



**2015 AMENDED**

# **URBAN WATER MANAGEMENT PLAN**

**FINAL**

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JUNE 2018

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## 2015 URBAN WATER MANAGEMENT PLAN

City of Cerritos

**FINAL**



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## ACRONYMS AND ABBREVIATIONS

20 by 2020	20% Water Use Reduction in GPCD by Year 2020
AB	Assembly Bill
Act	Urban Water Management Planning Act
AF	Acre-Feet
AFY	Acre-Feet per Year
AMR	Advanced Meter Readers
AWWA	American Water Works Association
Basin	Central Groundwater Basin
BMP	Best Management Practice
CBMWD	Central Basin Municipal Water District
CDPH	California Department of Public Health
CFS	Cubic Feet per Second
CII	Commercial/Industrial/Institutional
City	City of Cerritos
CRA	Colorado River Aqueduct
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
Delta	Sacramento-San Joaquin River Delta
DMM	Demand Management Measure
DOF	Department of Finance
DVL	Diamond Valley Lake
DWR	Department of Water Resources
FY	Fiscal Year
GAC	Granular Activated Carbon Filter
GPCD	Gallons per Capita per Day
GPM	Gallons per Minute
GSWC	Golden State Water Company
HCF	Hundred Cubic Feet per Second
HECW	High Efficiency Clothes Washer
HET	High Efficiency Toilets
IPR	Indirect Potable Reuse
IRP	Integrated Water Resource Plan
IWA	International Water Association
JWPCP	Joint Water Pollution Control Plant
LACFCD	Los Angeles County Flood Control District
LACSD	Los Angeles County Sanitation District
LRP	Local Resources Program
MAF	Million Acre-Feet
MCL	Maximum Contaminant Level

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Metropolitan	Metropolitan Water District of Southern California
MGD	Million Gallons per Day
MHI	Median Household Income
NDMA	N-nitrosodimethylamine
PCE	Perchloroethylene
PPCP	Pharmaceuticals and Personal Care Product
RHNA	Regional Housing Needs Assessment
SBx7-7	Senate Bill 7 as part of the Seventh Extraordinary Session
SCAB	South Coast Air Basin
SCADA	Supervisory Control and Data Acquisition System
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SDCWA	San Diego County Water Authority
SDP	Seawater Desalination Program
SMSS	Soil Moisture Sensor Systems
Study	Colorado River Basin Water Supply and Demand Study
SWP	State Water Project
SWRCB	California State Water Resources Control Board
TCE	Trichloroethylene
UWMP	Urban Water Management Plan
VOC	Volatile Organic Compound
WBIC	Weather Based Irrigation Controller
WQPP	Water Quality Protection Program
WRD	Water Replenishment District
WRP	Water Reclamation Plant
WSAP	Water Supply Allocation Plan
WSDM	Water Surplus and Drought Management

# 1 INTRODUCTION

## 1.1 Urban Water Management Plan Requirements

Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act) require every urban water supplier providing water for municipal purposes to more than 3,000 service connections or supplying more than 3,000 acre-feet (AF) of water annually to prepare, adopt, and file an Urban Water Management Plan (UWMP) with the California Department of Water Resources (DWR) every five years in the years ending in zero and five. The 2015 UWMP updates are due to DWR by July 1, 2016.

This UWMP provides DWR with a detailed summary of the present and future water resources and demands within the City of Cerritos' (City) service area and assesses the City's water resource needs. Specifically, the UWMP provides water supply planning for a 25-year planning period in five-year increments and identifies water supplies needed to meet existing and future demands. The demand analysis must identify supply reliability under three hydrologic conditions: a normal year, a single-dry year, and multiple-dry years. The City's 2015 UWMP updates the 2010 UWMP in compliance with the requirements of the Act as amended in 2009, and includes a discussion of:

- Water Service Area and Facilities
- Water Sources and Supplies
- Water Use by Customer Type
- Demand Management Measures
- Water Supply Reliability
- Planned Water Supply Projects and Programs
- Water Shortage Contingency Plan
- Recycled Water Use

Since the original Act's passage in 1983, several amendments have been added. The most recent changes affecting the 2015 UWMP include Senate Bill 7 as part of the Seventh Extraordinary Session (SBx7-7) and SB 1087. SBx7-7, or the Water Conservation Act of 2009, is part of the Delta Action Plan that stemmed from the Governor's goal to achieve a 20 percent statewide reduction in urban per capita water use by 2020 (20 by 2020). Reduction in water use is an important part of this plan that aims to sustainably manage the Sacramento-San Joaquin River Delta and reduce conflicts between environmental conservation and water supply; it is detailed in Section 3.2.2. SBx7-7 requires each urban retail water supplier to develop urban water use targets to achieve the 20 by 2020 goal and the interim ten percent goal by 2015. Each urban retail water supplier must include in its 2015 UWMPs the following information from its target-setting process:

- Baseline daily per capita water use
- 2020 Urban water use target

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- 2015 Interim water use target compliance
- Compliance method being used along with calculation method and support data
- An implementation plan to meet the targets

The other recent amendment, made to the UWMP on September 19, 2014, is set forth by SB 1420, Distribution System Water Losses. SB 1420 requires water purveyors to quantify distribution system losses for the most recent 12-month period available. The water loss quantification is based on the water system balance methodology developed by the American Water Works Association (AWWA).

The sections in this UWMP correspond to the outline of the Act, specifically Article 2, Contents of Plans, Sections 10631, 10632, and 10633. The sequence used for the required information differs slightly in order to present information in a manner reflecting the unique characteristics of the City's water utility. The UWMP Checklist has been completed, which identifies the location of Act requirements in this Plan and is included in Appendix A. This is an individual UWMP for a retail agency, as shown in Tables 1-1 and 1-2. Table 1-2 also indicates the units that will be used throughout this document.

Table 1-1: Plan Identification

Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance
<input checked="" type="checkbox"/>	<b>Individual UWMP</b>	
	<input type="checkbox"/> Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/> Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	<b>Regional Urban Water Management Plan (RUWMP)</b>	
NOTES:		

Table 1-2: Agency Identification

Agency Identification	
Type of Agency	
<input type="checkbox"/>	Agency is a wholesaler
<input checked="" type="checkbox"/>	Agency is a retailer
Fiscal or Calendar Year	
<input type="checkbox"/>	UWMP Tables Are in Calendar Years
<input checked="" type="checkbox"/>	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
7/1	
Units of Measure Used in UWMP	
Unit	AF
NOTES:	

## 1.2 Agency Overview

The City’s water system is municipally owned and operated. The Department of Water and Power administers the water utility and incorporates the operating divisions Water Management, Water Production and Distribution, Water Operations (Potable), Water Operations (Reclaimed), Water Inspection, and the operations division of the Cerritos Electric Utility.

The City operates under a Council/Manager form of government, established by the Charter of the City of Cerritos and drafted in 1958. The five-member City Council is an elected body with its members serving four year terms. Current City Council members are

- George Ray, Mayor
- Naresh Solanki, Mayor Pro Tem
- Carol K. Chen, Councilmember
- Jim Edwards, Councilmember
- Mark E. Pulido, Councilmember

The City has a 2015 population of 49,041 and the 2015 water demand was 7,632 acre-feet per year (AFY). The City receives its water from three main sources, local well water from the Central Groundwater Basin (Basin), recycled water from treated wastewater, and imported water from the Central Basin Municipal Water District (CBMWD). CBMWD is southeast Los Angeles County’s wholesale supplier and is

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a member agency of the Metropolitan Water District of Southern California (Metropolitan). The City's location within CBMWD is shown on Figure 1-1.

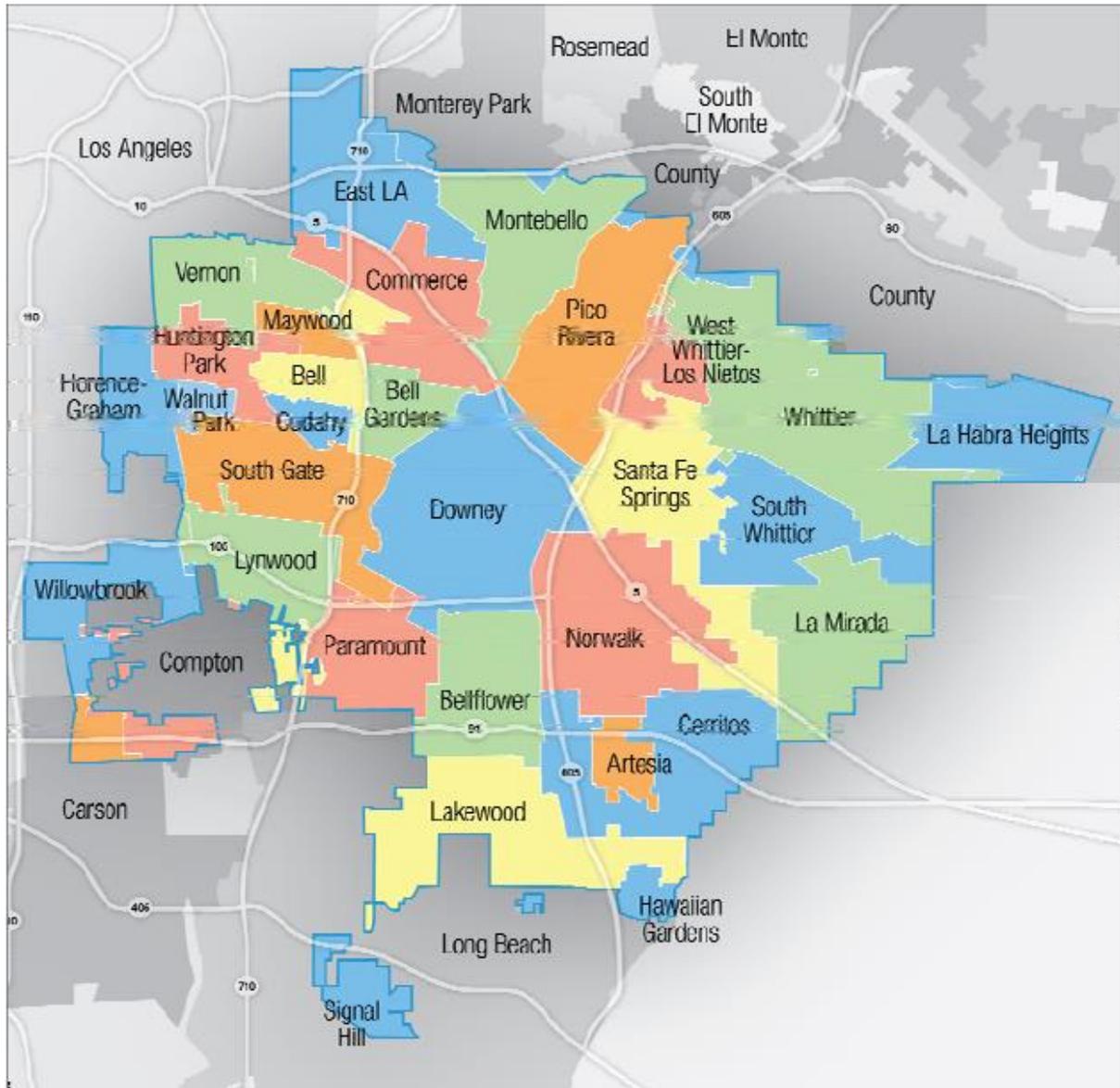


Figure 1-1: Regional Location of Urban Water Supplier

## 1.3 Service Area and Facilities

### 1.3.1 City of Cerritos Service Area

The City is located in the southeastern portion of Los Angeles County and comprises an area of approximately nine square miles. The City's water service area is depicted on Figure 1-2. This figure also shows the minor differences between the City limits and the water service area, which is important in determining the population of the water service area. Along the southeast boundary of the City, there are residential areas where the City serves residents in the City of La Palma and the City of La Palma serves

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City residents. There is also a small non-residential area near Pioneer Boulevard and South Street within the City where Golden State Water Company (GSWC) provides retail water service.

The City's service area is a coastal area with a Mediterranean climate, characterized by typically warm, dry summers and cool winters with an average precipitation level of about 12 inches per year. The average maximum and minimum temperatures are 74.2 degrees Fahrenheit and 54.8 degrees Fahrenheit, respectively. The combination of mild climate and low rainfall makes the area a popular tourist and residential destination, and challenges water agencies to provide adequate and reliable water service.

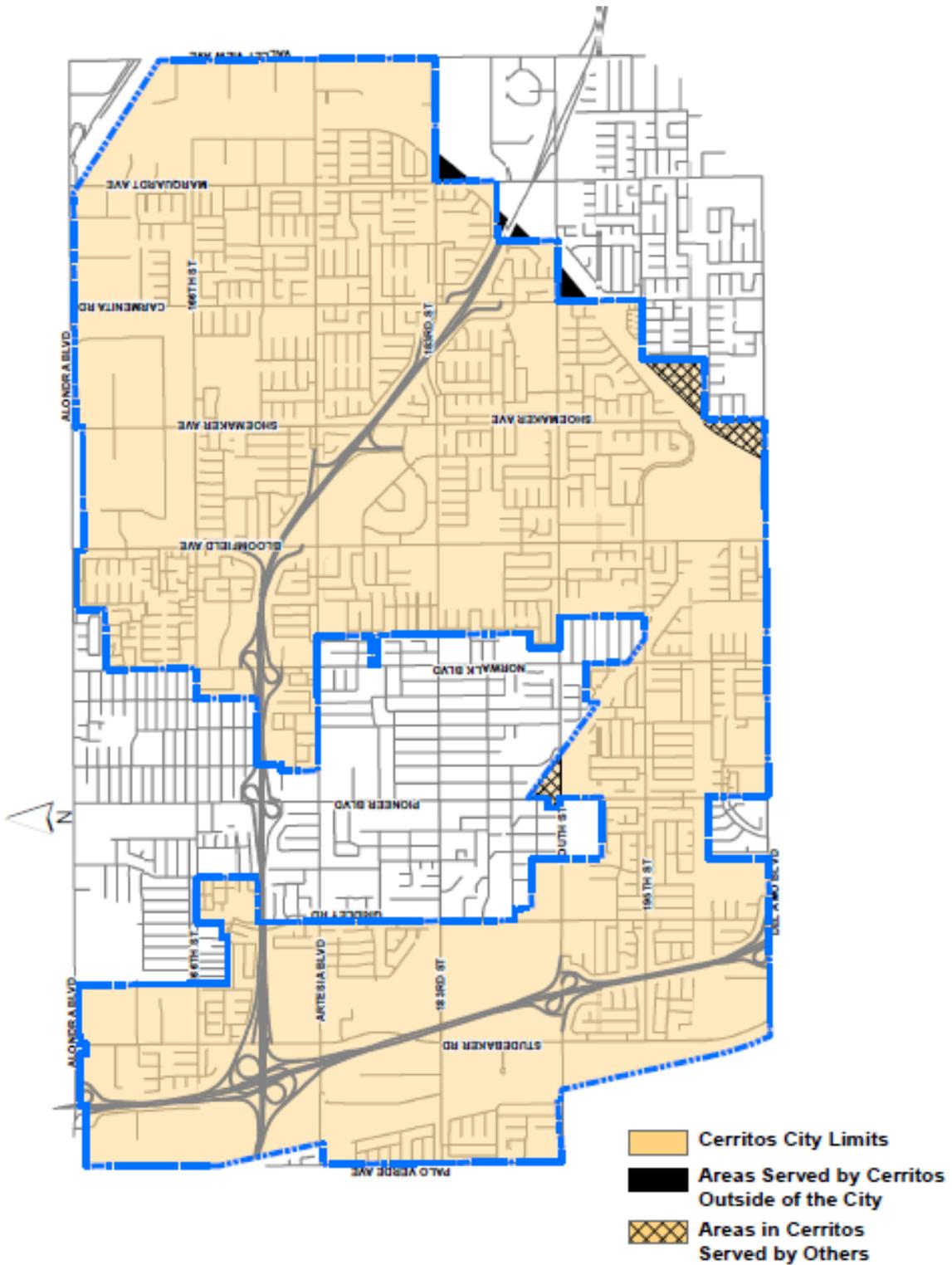


Figure 1-2: City of Cerritos Service Area

### 1.3.2 City of Cerritos Water Facilities

The City’s water supply comes from groundwater, imported water, and recycled water. The groundwater is produced from three wells. In 2004 a new well, C-5, was drilled and a casing installed but it has not yet been equipped. Once this is completed, it will serve as an additional supply of groundwater. Imported water is delivered through a connection from Metropolitan’s system. Recycled water is produced at the Los Coyotes Reclamation Plant and pumped into a recycled water delivery system.

The system connections and potable water volume supplied (i.e. not including recycled water) are summarized in Table 1-3, and the wholesalers informed of this water use as required are displayed in Table 1-4.

Table 1-3: Public Water Systems

Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
CA1910019	City of Cerritos	15,333	8,460
<b>TOTAL</b>		<b>15,333</b>	<b>8,460</b>
NOTES:			

Table 1-4: Water Supplier Information Exchange

Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
CBMWD
NOTES:

## 2 DEMANDS

### 2.1 Overview

Since the last UWMP update, southern California's urban water demand has been largely shaped by the efforts to comply with the SBx7-7. This law requires all California retail urban water suppliers serving more than 3,000 AFY or 3,000 service connections to achieve a 20 percent water demand reduction (from a historical baseline) by 2020. The City has been actively engaged in efforts to reduce water use in its service area to meet the 2015 interim 10 percent reduction and the 2020 final water use target. Meeting this target is critical to ensure the City's eligibility to receive future state water grants and loans.

In April 2015 Governor Brown issued an Emergency Drought Mandate as a result of one of the most severe droughts in California's history, requiring a collective reduction in statewide urban water use of 25 percent by February 2016, with each agency in the state given a specific reduction target by DWR. In response to the Governor's mandate, the City is carrying out more aggressive conservation efforts. It is also implementing higher (more restrictive) stages of its water conservation ordinance in order to achieve its demand reduction target of 28 percent set for the City (discussed later in Section 2.5).

This section analyzes the City's current water demands by customer type, factors that influence those demands, and projections of future water demands for the next 20 years. In addition, to satisfy SBx7-7 requirements, this section provides details for the SBx7-7 compliance method selection, baseline water use calculation, and 2015 and 2020 water use targets.

### 2.2 Factors Affecting Demand

Water demands within the City's service area are dependent on many factors such as local climate conditions and the evolving hydrology of the region, demographics, land use characteristics, and economics. In addition to local factors, southern California's imported water sources are also experiencing drought conditions that impact availability of current and future water supplies.

#### 2.2.1 Climate Characteristics

The City is located within the South Coast Air Basin (SCAB) that encompasses all of Orange County, and the urban areas of Los Angeles, San Bernardino, and Riverside counties. The SCAB climate is characterized by southern California's "Mediterranean" climate: a semi-arid environment with mild winters, warm summers and moderate rainfall.

Local rainfall has limited impacts on reducing demand for the City. Water that infiltrates into the soil may enter groundwater supplies depending on the local geography. However, due to the large extent of impervious cover in southern California, rainfall runoff quickly flows to a system of concrete storm drains and channels that lead directly to the ocean. Los Angeles County Department of Public Works operates stormwater capture and replenishment activities at the San Gabriel River Spreading Grounds and Rio Hondo Spreading Grounds which contribute to the Basin. Replenishment of the groundwater basin occurs through recycled water and untreated imported water managed by the Water Replenishment District of Southern California (WRD).

Metropolitan's water supplies come from the State Water Project (SWP) and the Colorado River Aqueduct (CRA), influenced by climate conditions in northern California and the Colorado River Basin, respectively. Both regions have been suffering from multi-year drought conditions with record low precipitation which directly impact water supplies to southern California.

### 2.2.2 Demographics

The City has a 2015 population of 49,041 according to DWR's Population Tool using the City's water service boundary. The City is almost completely built-out, and its population is projected to increase 5.1 percent by 2040, representing an average growth rate of 0.20 percent per year.

Growth has increased slightly since the 2010 UWMP as housing is becoming denser and new residential units are multi-storied. Table 2-1 shows the population projections in five-year increments out to 2040 within the City's service area.

Table 2-1: Population – Current and Projected

Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040
	49,091	49,582	50,078	50,579	51,084	51,595
NOTES: Current population from the DWR population tool and future population projected assuming a 5.1 percent increase by 2040.						

### 2.2.3 Land Use

The City's General Plan accompanied with an Environmental Impact Report was adopted and certified by the City Council on January 6, 2004. The City is required by California State law to adopt a General Plan that provides the policy framework for the long-term physical development of a community. The City's General Plan expresses the community's development goals and provides specific public policy relative to the public and private uses of land in the community. The General Plan links the community values, visions, and objectives with the way public and private land and other community resources are used. It is comprehensive and long-term, and provides the primary guidance for specific projects, policy actions or programs that may occur in the future.

The General Plan contains ten Elements; State law requires seven mandatory Elements be included: Land Use, Circulation, Housing, Conservation, Open Space, Noise and Safety. State law allows inclusion of optional Elements and the City included three optional Elements: Growth Management, Air Quality, and Community Design.

The City's service area can best be described as a predominately residential single and multi-family community located in southeastern Los Angeles County. The area within the City is mainly developed as residential. Most of the existing residential is single-family homes that were developed in the 1960s, 1970s, and 1980s. Apartments, townhomes, and condominiums also exist throughout the City. New residential opportunities exist for infill on vacant parcels and on sites available for redevelopment.

Commercial development encompasses approximately 496 acres of land in the City, approximately 8.6 percent of the City's area. Commercial uses are concentrated into centers located throughout the City to

meet the day-to-day needs of its citizens and to serve the surrounding region. The City discourages "strip" or "ribbon" commercial centers.

Industrial areas are located primarily in the northern and northeast areas of the City. Approximately 726 acres (13 percent) of land are designated for industrial uses within the City. The industrial sites are situated to provide easy access to truck routes and major transportation routes including freeways and rail. Most of these sites can be accessed from Alondra Boulevard along the City's northern boundary, as well as from several other major thoroughfares including Valley View Avenue, Marquardt Avenue, and Artesia Boulevard. The industrial districts are characterized by large, landscaped setbacks and architectural features to diminish the negative visual impacts of parking and loading facilities.

The City provides ample parks and open space along with programs for its residents. The City currently operates 20 parks within the City encompassing 187 acres. The City also pays for the operation and maintenance of two park sites outside the City limits: Bettencourt and Rainbow, as well as for facilities associated with ABC Unified School District sites. The range of neighborhood, community, and regional parks provide residents with playing courts, athletic fields, picnic shelters, and meeting rooms. Residents can swim laps or take courses at the Cerritos Olympic Swim and Fitness Center. The Community Gymnasiums at Cerritos and Whitney High Schools provide youth activities and indoor sports for residents of all ages. The Cerritos Senior Center at Pat Nixon Park offers a variety of special events, recreation, special interest classes and human services to seniors, age 50 and older.

The City includes one golf course, the City of Cerritos Iron-Wood Nine Golf Course, within its jurisdictional boundaries. The approximate 22.1 acre facility has become one of the more popular nine-hole executive courses in the area. The facility offers nine holes of golf, totaling approximately 2,936 yards with a night-lighted driving range.

The City provides approximately 404 acres of land dedicated to educational facilities. There are nine public elementary schools, three public middle schools, four public high schools, and the Cerritos Community College. In addition, there are three private schools located in the City.

The Artesia Cemetery is located on the south side of Artesia Boulevard between Studebaker Road and Gridley Road. The cemetery occupies approximately 16 acres and is in the Los Angeles County Cemetery District.

### **2.3 Water Use by Customer Type**

An agency's water consumption can be projected by understanding the type of use and customer type creating the demand. Developing local water use profiles helps to identify when, where, how, quantity of water used, and by whom within the agency's service area. A comprehensive profile of the agency's service area enables the impacts of water conservation efforts to be assessed and to project the future benefit of water conservation programs.

The following sections of this UWMP provide an overview of the City's water consumption by customer account type as follows:

- Single-family Residential
- Multi-family Residential

- Commercial
- Institutional/ Government

Other water uses including sales to other agencies and non-revenue water are also discussed in this section.

### 2.3.1 Overview

There are 15,333 current customer active and inactive service connections in the City’s water distribution system with all existing connections metered. Approximately 69 percent of the City’s water demand is residential, commercial/institutional accounts for 24 percent, and landscape accounts for 7 percent of the total demand.

Table 2-2 contains a summary of the City’s demand in the fiscal year (FY) of 2014-15 for potable water.

Table 2-2: Demands for Potable and Raw Water - Actual (AF)

Retail: Demands for Potable and Raw Water - Actual			
Use Type	2015 Actual		
	Additional Description	Level of Treatment When Delivered	Volume
Single Family		Drinking Water	4,734
Multi-Family		Drinking Water	554
Commercial	Commercial/Institutional	Drinking Water	1,853
Landscape		Drinking Water	522
Agricultural irrigation		Drinking Water	4
Sales/Transfers/Exchanges to other agencies	GSWC	Drinking Water	6
Sales/Transfers/Exchanges to other agencies	Norwalk	Drinking Water	787
<b>TOTAL</b>			<b>8,460</b>
NOTES: From Cerritos 2015 Water Usage Report			

### 2.3.2 Non-Residential

Non-residential use includes commercial, institutional, and landscape water demands. The City has a mix of commercial uses (markets, restaurants, etc.), public entities (schools, fire stations and government offices), and office complexes that account for 24 percent of total demand. Dedicated landscape accounts for 7 percent of total demand.

### 2.3.3 Sales to Other Agencies

The City sells potable water to the City of Norwalk and GSWC on a monthly basis.

### **2.3.4 Non-Revenue Water**

Non-revenue water is defined by the International Water Association (IWA) as the difference between distribution systems input volume (i.e. production) and billed authorized consumption. Non-revenue water consists of three components: unbilled authorized consumption (e.g. hydrant flushing, firefighting, and blow-off water from well start-ups), real losses (e.g. leakage in mains and service lines, and storage tank overflows), and apparent losses (unauthorized consumption, customer metering inaccuracies and systematic data handling errors).

A water loss audit was conducted per AWWA methodology for the City to understand the relationship between water loss, operating costs and revenue losses. This audit was developed by the IWA Water Loss Task Force as a universal methodology that could be applied to any water distribution system. This audit meets the requirements of SB 1420 that was signed into law in September 2014. Understanding and controlling water loss from a distribution system is an effective way for the City to achieve regulatory standards and manage their existing resources.

#### **2.3.4.1 AWWA Water Audit Methodology**

There are five data categories that are part of the AWWA Water Audit: 1) Water Supplied 2) Authorized Consumption 3) Water Losses 4) System Data and 5) Cost Data. Data was compiled from questionnaires, invoices, meter test results, and discussion with the City. Each data value has a corresponding validation score that evaluates the City's internal processes associated with that data entry. The scoring scale is 1-10 with 10 representing best practice.

The Water Supplied section represents the volume of water the City delivered from its own sources, purchased imported water, or water that was either exported or sold to another agency. Validation scores for each supply source correspond to meter accuracy and how often the meters are calibrated. If the calibration results of supply meters were provided, a weighted average of errors was calculated for master meter adjustment. This adjustment factor was applied to reported supply volumes for meters that were found to register either over or under the true volume. Validity scores for meter adjustment are based on how often the meter is read and what method is used.

The Authorized Consumption section breaks down consumption of the volume of Water Supplied. Billed metered water is billed and delivered to customers and makes up the majority of an agency's consumption. Billed unmetered water is water that is delivered to a customer for a set fee but the actual quantity of water is not metered. Customer accounts for this type of use are typically determined by utility policy. Unbilled metered water is the volume used and recorded, but the customer is not charged. This volume is typically used for City facilities per City policy. Unbilled unmetered water is authorized use that is neither billed nor metered which typically includes activities such as firefighting, flushing of water mains and sewers, street cleaning, and fire flow testing. The AWWA Water Audit recommends using the default value of 1.25 percent to represent this use, as calculating an accurate volume is often tedious due to the many different components involved and it represents a small portion of the City's overall use. For each consumption type listed above the associated validation score reflects utility policy for customer accounts, frequency of meter testing and replacement, computer-based billing and transition to electronic metering systems.

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Water Losses are defined as the difference between the volume of water supplied and the volume of authorized consumption. Water losses are further broken down into apparent and real losses. Apparent losses include unauthorized consumption, customer meter inaccuracies and systematic data handling errors. Default percentages were provided for the Audit by AWWA for unauthorized consumption and systematic data handling error as this data is not often available. The corresponding default validation score assigned is 5 out of 10. A discrete validation score was included for customer meter inaccuracies to represent quality of meter testing records, testing procedures for meter accuracy, meter replacement cycles, and inclusion of new meter technology.

System Data includes information about the City's physical distribution system and customer accounts. The information included is: length of mains, number of active and inactive service connections, location of customer meters in relation to the property line, and the average operating pressure of the system. The number of service connections is automatically divided by the length of mains to find the service connection density of the system. The calculated service connection density determines which performance indicators best represent a water system's real loss performance. The validity scores in this section relate to the water system's policies and procedures for calculating and documenting the required system data, quality of records kept, integration with an electronic database including GIS and SCADA, and how often this data is verified.

The final section is Cost Data and contains three important financial values related to system operation, customer cost and water production. The total annual cost of operating the water system, customer retail unit cost and the variable production cost per AF are included. The customer retail unit value is applied to the apparent losses to determine lost revenue, while the variable production cost is typically applied to real losses. In water systems with scarce water supplies, a case can be made for real losses to be valued at the retail rate, as this volume of water could be sold to additional customers if it were not lost.] Validity scores for these items consider how often audits of the financial data and supporting documents are compiled and if third-party accounting professionals are part of the process.

Calculations based on the entered and sufficiently valid data produce a series of results that help the City quantify the volume and financial impacts of water loss and facilitate comparison of the City's water loss performance with that of other water systems who have also performed water loss audits using the AWWA methodology. The City's Data Validity Score was 75 out of 100, with a total water loss volume of 95.6 AFY. The Non-Revenue Water volume represents 2.5 percent of the total water supplied by the City. The value of non-revenue water is calculated to be \$71,039 per year.

The Infrastructure Leakage Index (ILI) is a performance indicator developed from the ratio of Current Annual Real Losses (CARL) to the Unavoidable Annual Real Losses (UARL). CARL was developed as part of the workbook and explained as real losses above. UARL is developed on a per system basis with an equation based on empirical data, developed by IWA that factors in the length of mains (including fire hydrant laterals), number of service connections, average distance of customer service connection piping between the curb stop and the customer meter and the total length of customer service piping, all multiplied by average system pressure. The City received an ILI score of 0.06, which taken at face value indicates that real losses are well managed. This requires further field investigation of leakage if leakage detection and control practices are not extensively implemented and/or, given the Data Validity Score for some components in the Audit, further investigation/confirmation of entries such as water

supplied/accuracy of supply meters, accuracy of customer meters, systematic data handling errors, and applicability of the default percentages applied in the audit.

Apparent losses make up a significant portion of the City’s total water loss at 79 percent; as most of this was developed from default percentages provided by the AWWA Water Audit. Based on this information, the City can improve water loss by taking a closer look at apparent losses and developing a strategy to better quantify this data in the future. The overall Water Audit score can also be improved by meeting the standards AWWA has developed for each data point through clear City procedures and reliable data.

The result of the AWWA Water Audit completed for the City as required by the 2015 UWMP is summarized in Table 2-4. The water loss summary was calculated over a one-year period from available data and the methodology explained above.

Table 2-3: Water Loss Audit Summary (AF)

Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss
07/2014	95.6
NOTES:	

## 2.4 Demand Projections

Demand projections for the City were developed from Metropolitan supplied demand projections for CBMWD based on historical data. The average demand increase for CBMWD was applied to the City’s 2015 demands to determine future projections consistent with Metropolitan.

### 2.4.1 25 Year Projections

A key component of the 2015 UWMP is to provide insight into the City’s future water demand outlook. The City’s 2015 potable water demand is 8,460 AFY, met through locally pumped groundwater and purchased imported water from CBMWD. Table 2-4 is a projection of the City’s water demand for the next 25 years.

2015 URBAN WATER MANAGEMENT PLAN

Table 2-4: Demands for Potable and Raw Water - Projected (AF)

Retail: Demands for Potable and Raw Water - Projected						
Use Type	Additional Description	Projected Water Use <i>Report To the Extent that Records are Available</i>				
		2020	2025	2030	2035	2040
Single Family		5,246	5,268	5,290	5,312	5,334
Multi-Family		613	616	619	621	624
Commercial	Commercial/Institutional	2,053	2,061	2,070	2,079	2,087
Landscape		579	581	584	586	588
Agricultural irrigation		5	5	5	5	5
Sales/Transfers/Exchanges to other agencies	Norwalk	820	820	820	820	820
Sales/Transfers/Exchanges to other agencies	GSWC	10	10	10	10	10
<b>TOTAL</b>		<b>9,326</b>	<b>9,361</b>	<b>9,397</b>	<b>9,433</b>	<b>9,469</b>
NOTES:						

The above demand values were developed based on Metropolitan/CBMWD projected demands for the City. The City will aim to decrease its reliance on imported water by pursuing a variety of water conservation strategies and increasing local supplies, the City's per capita water use is projected to decrease as detailed in section 2.5 below. Table 2-5 displays the inclusion of future water savings in water use projections.

Table 2-5: Inclusion in Water Use Projections

Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.	Section 4.1
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES:	

The demand data presented in this section accounts for passive savings in the future. Passive savings are water savings as a result of Codes, Standards, Ordinances, or Transportation and Land Use Plans as well as public outreach on water conservation and higher efficiency fixtures. The City has adopted Cerritos Municipal Code Chapter 6.40, Water Efficient Landscape in 2010 and has recently amended Chapter 22.22 to regulate drought-tolerant landscape and synthetic turf.

### 2.4.2 Total Water Demand Projections

Based on the information provided above, the total demand for potable water is listed below in Table 2-6 below. The City has provided recycled water to its customers since 1978 and will continue this practice into the projected time frame.

Table 2-6: Total Water Demands (AF)

Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040
Potable and Raw Water	8,460	9,326	9,361	9,397	9,433	9,469
Recycled Water Demand	2,335	2,505	2,505	2,505	2,505	2,505
<b>TOTAL WATER DEMAND</b>	10,795	11,831	11,866	11,902	11,938	11,974
NOTES:						

### 2.4.3 Water Use for Lower Income Households

Since 2010, the UWMP Act has required retail water suppliers to include water use projections for single-family and multi-family residential housing for lower income and affordable households. This will assist the City in complying with the requirement under Government Code Section 65589.7 granting priority for providing water service to lower income households. A lower income household is defined as a household earning below 80 percent of the median household income (MHI).

DWR recommends retail suppliers rely on the housing elements of city or county general plans to quantify planned lower income housing with the City's service area (DWR, 2015 UWMP Guidebook, February 2016). The Regional Housing Needs Assessment (RHNA) assists jurisdictions in updating general plan's housing elements section. The RHNA identifies housing needs and assesses households by income level for the City through 2010 decennial Census and 2005-2009 American Community Survey data. The fifth cycle of the RHNA covers the planning period of October 2013 to October 2021. The Southern California Association of Governments (SCAG) adopted the RHNA Allocation Plan for this cycle on October 4, 2012 requiring housing elements updates by October 15, 2013. The California Department of Housing and Community Development reviewed the housing elements data submitted by jurisdictions in the SCAG region and concluded the data meets statutory requirements for the assessment of current housing needs.

The housing elements from the RHNA includes low income housing broken down into three categories: extremely low (less than 30 percent MHI), very low (31 percent - 50 percent MHI), and lower income (51 percent - 80 percent MHI). The report gives the household distribution for all households of various income levels in the City which can be seen in Table 2-7. Altogether the City has 22.33 percent low income housing (SCAG, RHNA, November 2013).

Table 2-7: Household Distribution Based on Median Household Income

Number of Households by Income	
Extremely Low Income	1,023
Very Low Income	935
Lower Income	1,495
Moderate Income	2,202
Above Income	9,808
<b>Total Households</b>	<b>15,463</b>

Table 2-8 provides the projected water needs for low income single family and multifamily units. The projected water demands shown here represent 22.33 percent of the projected water demand for the single-family and multifamily categories provided in Table 2-4 above. For example, the total low income single family residential demand is projected to be 1,171 AFY in 2020 and 1,191 AFY in 2040.

Table 2-8: Projected Water Demands for Housing Needed for Low Income Households (AF)

Water Use Sector	Fiscal Year Ending				
	2020	2025	2030	2035	2040
Total Residential Demand	5,859	5,883	5,908	5,933	5,958
SF Residential Demand-Low Income Households	1,171	1,176	1,181	1,186	1,191
MF Residential Demand-Low Income Households	137	138	138	139	139
<b>Total Low Income Households Demand</b>	<b>1,308</b>	<b>1,314</b>	<b>1,319</b>	<b>1,325</b>	<b>1,330</b>

## 2.5 SBx7-7 Requirements

The Water Conservation Act of 2009, SBx7-7, signed into law on February 3, 2010, requires the State of California to reduce urban water use by 20 percent by the year 2020. The City must determine baseline water use during their baseline period and water use targets for the years 2015 and 2020 to meet the state’s water reduction goal. The City may choose to comply with SBx7-7 individually or as a region in collaboration with other retail water suppliers. Under the regional compliance option, the City is still required to report its individual water use targets. The City is required to be in compliance with SBx7-7 either individually or as part of the alliance, or demonstrate they have a plan or have secured funding to be in compliance, in order to be eligible for water related state grants and loans on or after July 16, 2016 per Assembly Bill (AB) 1420.

For the 2015 UWMP, the City must demonstrate compliance with its 2015 water use target to indicate whether or not they are on track to meeting the 2020 water use target.

DWR also requires agencies to submit SBx7-7 Verification Forms, a set of standardized tables to demonstrate compliance with the Water Conservation Act in this 2015 UWMP.

### **2.5.1 Baseline Water Use**

The baseline water use is the City's gross water use divided by its service area population, reported in gallons per capita per day (GPCD). Gross water use is a measure of water that enters the distribution system of the supplier over a 12-month period with certain allowable exclusions. These exclusions are:

- Recycled water delivered within the service area
- Indirect recycled water
- Water placed in long term storage
- Water conveyed to another urban supplier
- Water delivered for agricultural use
- Process water

Water suppliers must report baseline water use for two baseline periods, the 10- to 15-year baseline (baseline GPCD) and the five-year baseline (target confirmation) as described below.

#### **2.5.1.1 Ten to 15-Year Baseline Period (Baseline GPCD)**

The first step to calculating the City's water use targets is to determine its base daily per capita water use (baseline water use). This baseline water use is essentially the City's gross water use divided by its service area population, reported in gallons per capita per day (GPCD). The baseline water use is calculated as a continuous (rolling) 10-year average during a period, which ends no earlier than December 31, 2004 and no later than December 31, 2010. Water suppliers whose recycled water made up 10 percent or more of their 2008 retail water delivery can use up to a 15-year average for the calculation. Recycled water use at 16.8 percent was greater than 10 percent of the City's retail delivery in 2008; therefore, a 10 to 15-year baseline period is used.

The City's baseline water use is 164 GPCD, obtained from the 14-year period July 1, 1997 to June 30, 2010.

#### **2.5.1.2 Five-Year Baseline Period (Target Confirmation)**

Water suppliers are required to calculate water use, in GPCD, for a five-year baseline period. This number is used to confirm that the selected 2020 target meets the minimum water use reduction requirements. Regardless of the compliance option adopted by the City, it will need to meet a minimum water use target of five percent reduction from the five-year baseline water use. This five-year baseline water use is calculated as a continuous five-year average during a period, which ends no earlier than December 31, 2007 and no later than December 31, 2010. The City's five-year baseline water use is 161 GPCD, obtained from the five-year period July 1, 2003 to June 30, 2008.

### 2.5.1.3 Service Area Population

The City's service area boundaries correspond with the boundaries for a city or census designated place. This allows the City to use service area population estimates prepared by the Department of Finance (DOF). The Census population was adjusted to exclude population serviced by the City of La Palma and include the City of La Palma population serviced by the City of Cerritos.

## 2.5.2 SBx7-7 Water Use Targets

In the 2015 UWMP, the City may update its 2020 water use target by selecting a different target method than what was used in 2010. The target methods and determination of the 2015 and 2020 targets are described below.

### 2.5.2.1 SBx7-7 Target Methods

DWR has established four target calculation methods for urban retail water suppliers to choose from. The City is required to adopt one of the four options to comply with SBx7-7 requirements. The four options include:

- *Option 1* requires a simple 20 percent reduction from the baseline by 2020 and 10 percent by 2015.
- *Option 2* employs a budget-based approach by requiring an agency to achieve a performance standard based on three metrics
  - Residential indoor water use of 55 GPCD
  - Landscape water use commensurate with the Model Landscape Ordinance
  - 10 percent reduction in baseline commercial/industrial/institutional (CII) water use
- *Option 3* is to achieve 95 percent of the applicable state hydrologic region target as set forth in the State's 20x2020 Water Conservation Plan.
- *Option 4* requires the subtraction of Total Savings from the baseline GPCD:
  - Total savings includes indoor residential savings, meter savings, CII savings, and landscape and water loss savings.

The City selected to comply with Option 3 consistent with the option selected in 2010.

### 2.5.2.2 2015 and 2020 Targets

Under Compliance Option 3, to achieve 95 percent of the South Coast Hydrologic Region target as set forth in the State's 20x2020 Water Conservation Plan, the City's 2015 target is 153 GPCD and the 2020 target is 142 GPCD as summarized in Table 2-9. The 2015 target is the midway value between the 10-year baseline and the confirmed 2020 target. In addition, the confirmed 2020 target needs to meet a minimum of five percent reduction from the five-year baseline water use.

2015 URBAN WATER MANAGEMENT PLAN

Table 2-9: Baselines and Targets Summary

<b>Baselines and Targets Summary</b> <i>Retail Agency or Regional Alliance Only</i>					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	1997	2010	164	153	142
5 Year	2004	2008	161		
*All values are in Gallons per Capita per Day (GPCD)					
NOTES:					

Table 2-10 compares the City's 2015 water use target to its actual 2015 consumption. Based on this comparison, the City is in compliance with its 2015 interim target and has also already met the 2020 water use target.

Table 2-10: 2015 Compliance

<b>2015 Compliance</b> <i>Retail Agency or Regional Alliance Only</i>			
Actual 2015 GPCD*	2015 Interim Target GPCD*	2015 GPCD* <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015? Y/N
139	153	124	Yes
*All values are in Gallons per Capita per Day (GPCD)			
NOTES:			

### 3 WATER SOURCES AND SUPPLY RELIABILITY

#### 3.1 Overview

The City’s water supply currently consists of groundwater, imported water, and recycled water, with groundwater making up most of its water supply portfolio. The City purchases imported water from CBMWD through Metropolitan to meet its demands. The sources of imported water supplies include the Colorado River and the SWP, delivered via the California Aqueduct. The City also meets non-potable demands with recycled water. The City also provides potable water to GSWC and the City of Norwalk. In FY 2014-2015, the City provided approximately 6 AF of potable water to GSWC and approximately 787 AF of potable water to the City of Norwalk.

The following sections provide a detailed discussion of the City’s water sources as well as the future water supply portfolio for the next 25 years. Additionally, the City’s projected supply and demand under various hydrological conditions are compared to determine the City’s supply reliability for the 25 year planning horizon. The City’s projected water supply portfolio is shown on Figure 3-1.

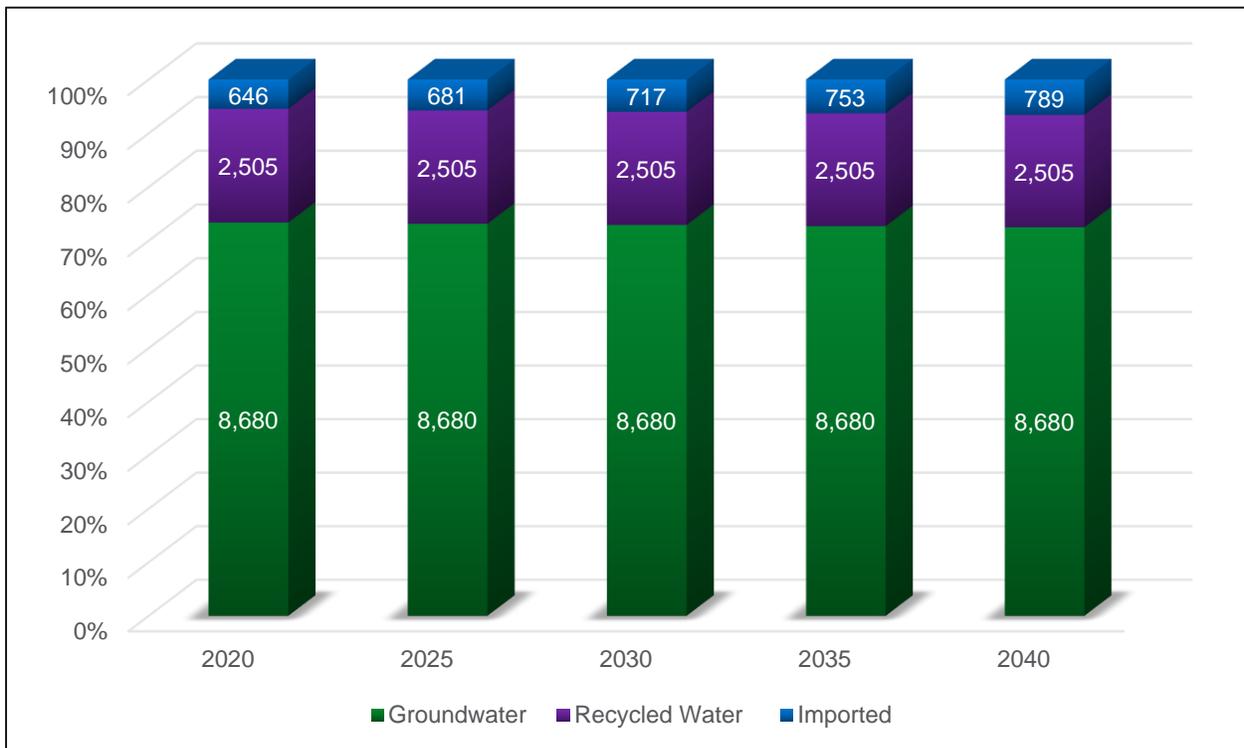


Figure 3-1: Projected Water Supply Sources (AF)

## **3.2 Water Sources**

### **3.2.1 Metropolitan**

Metropolitan is the largest water wholesaler for domestic and municipal uses in California, serving approximately 18.5 million customers. Metropolitan wholesales imported water supplies to 26 member cities and water districts in six southern California counties. Its service area covers the southern California coastal plain, extending approximately 200 miles along the Pacific Ocean from the City of Oxnard on the north to the international boundary with Mexico on the south. This encompasses 5,200 square miles and includes portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. Approximately 90 percent of the population from the aforementioned counties reside within Metropolitan's boundaries.

Metropolitan is governed by a Board of Directors comprised of 38 appointed individuals with a minimum of one representative from each of Metropolitan's 26 member agencies, with CBMWD being one such agency. The allocation of directors and voting rights are determined by each agency's assessed valuation. Each member of the Board shall be entitled to cast one vote for each ten million dollars (\$10,000,000) of assessed valuation of property taxable for district purposes, in accordance with Section 55 of the Metropolitan Water District Act. Directors can be appointed through the chief executive officer of the member agency or by a majority vote of the governing board of the agency. Directors are not compensated by Metropolitan for their service.

Metropolitan is responsible for importing water into the region through its operation of the CRA and its contract with the State of California for SWP supplies. Member agencies receive water from Metropolitan through various delivery points and pay for service through a rate structure made up of components such as uniform volumetric rates. Member agencies advise Metropolitan annually in April on how much water they anticipate they will need to meet their demands for the next five years.

### **3.2.2 Central Basin Municipal Water District**

In 1954, CBMWD became a member agency of Metropolitan, an agency which provides the region with imported water. CBMWD is one of the largest member agencies of Metropolitan and serves more than two million people living in 24 cities in southeast Los Angeles County as well as unincorporated areas. Communities that CBMWD serve include Artesia, Bell, Bellflower, Bell Gardens, parts of Carson, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Habra Heights, Lakewood, La Mirada, Lynwood, Maywood, Montebello, Monterey Park, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, Vernon, and Whittier. CBMWD also serves unincorporated areas of Los Angeles County such as East Los Angeles and South Whittier. CBMWD's service area is shown on Figure 3-2.



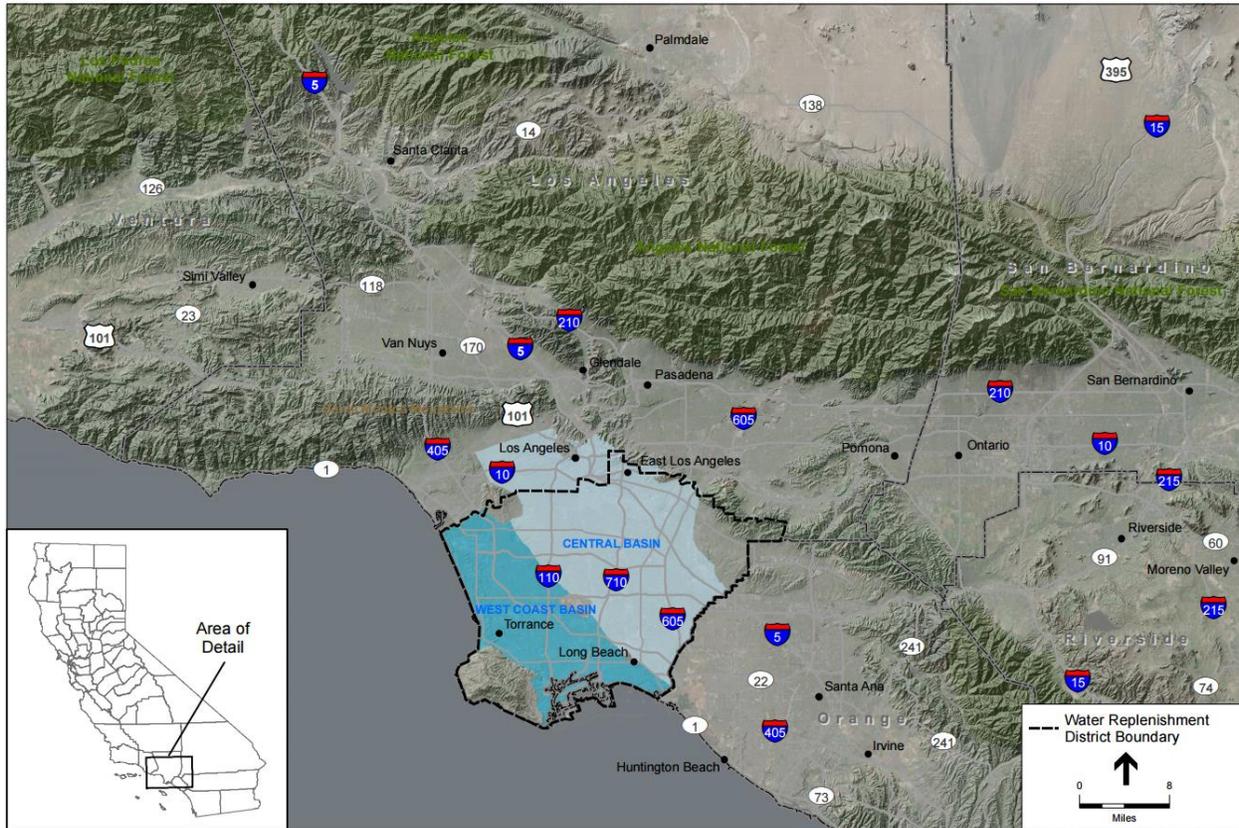


Figure 3-3: WRD's Service Area

WRD's primary responsibilities are to replenish the West Coast and Central Groundwater Basins sufficiently to meet local water rights and to implement clean water programs. WRD purchases approximately 80,000 to 120,000 AF of water annually to replenish the groundwater basins, either from percolation through spreading grounds or by direct injection into the aquifers using injections wells. Injection wells are used for two purposes, groundwater replenishment and prevention of seawater intrusion into the potable freshwater aquifers (WRD, Groundwater Basins Master Plan, December 2015).

### 3.2.4 Sanitation Districts of Los Angeles County

The City lies within the Los Angeles County Sanitation District (LACSD) boundaries for sewer service. The entire LACSD service area includes 23 separate Sanitation Districts that serve about 5.7 million people in Los Angeles County. The overall service area is approximately 820 square miles and encompasses 78 cities as well as unincorporated areas of the County. The main purpose of LACSD is to construct, operate, and maintain facilities to collect, treat, recycle, and dispose of wastewater. The LACSD operates one wastewater treatment plant and ten reclamation plants. The City purchases recycled water from the LACSD Los Coyotes Water Reclamation Plant for distribution within its service area. More detailed information related to recycled water is discussed in Section 6 of this UWMP.

### 3.3 Imported Water

Imported water makes up a small portion of the City's water supply portfolio. Nevertheless, it helps supplement groundwater supplies to meet its demands. In 2015, the City relied on 651 AFY of imported water purchased wholesale by CBMWD through Metropolitan. Imported water represents approximately six percent of the City's total water supply. Metropolitan's principal sources of water originate from two sources - the Colorado River via the Colorado Aqueduct and the Lake Oroville watershed in Northern California through the SWP.

#### 3.3.1 Colorado River Supplies

The Colorado River was Metropolitan's original source of water after Metropolitan's establishment in 1928. The CRA, which is owned and operated by Metropolitan, transports water from the Colorado River to its terminus at Lake Mathews in Riverside County. The actual amount of water per year that may be conveyed through the CRA to Metropolitan's member agencies is subject to the availability of Colorado River water for delivery.

The CRA includes supplies from the implementation of the Quantification Settlement Agreement and related agreements to transfer water from agricultural agencies to urban uses. The 2003 Quantification Settlement Agreement enabled California to implement major Colorado River water conservation and transfer programs, stabilizing water supplies for 75 years and reducing the state's demand on the river to its 4.4 MAF entitlement. Colorado River transactions are potentially available to supply additional water up to the CRA capacity of 1.25 million acre-feet (MAF) on an as-needed basis. Water from the Colorado River or its tributaries is available to users in California, Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, as well as to Mexico. California is apportioned the use of 4.4 MAF of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California, and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to but not used by Arizona or Nevada. Metropolitan has a basic entitlement of 550,000 AFY of Colorado River water, plus surplus water up to an additional 662,000 AFY when the following conditions exist (Metropolitan, 2015 UWMP, June 2016):

- Water unused by the California holders of priorities 1 through 3
- Water saved by the Palo Verde land management, crop rotation, and water supply program
- When the U.S. Secretary of the Interior makes available either one or both:
  - Surplus water is available
  - Colorado River water is apportioned to but unused by Arizona and/or Nevada

Unfortunately, Metropolitan has not received surplus water for a number of years. The Colorado River supply faces current and future imbalances between water supply and demand in the Colorado River Basin due to long term drought conditions. Over the past 16 years (2000-2015), there have only been three years when the Colorado River flow has been above average (Metropolitan, 2015 UWMP, June 2016). The long-term imbalance in future supply and demand is projected to be approximately 3.2 MAF by the year 2060.

Approximately 40 million people rely on the Colorado River and its tributaries for water with 5.5 million acres of land using Colorado River water for irrigation. Climate change will affect future supply and demand as increasing temperatures may increase evapotranspiration from vegetation along with an increase in water loss due to evaporation in reservoirs, therefore reducing the available amount of supply from the Colorado River and exacerbating imbalances between increasing demands from rapid growth and decreasing supplies.

Findings concerning the future projected supply include:

- Increased temperatures are projected across the Colorado River Basin with larger changes in the Upper Basin than in the Lower Basin. Annual Basin-wide average temperature is projected to increase by 1.3 degrees Celsius over the period through 2040.
- Projected seasonal trends toward drying are significant in certain regions. A general trend towards drying is present in the Colorado River Basin, although increases in precipitation are projected for some higher elevation and hydrologically productive regions. Consistent and expansive drying conditions are projected for the spring and summer months throughout the Colorado River Basin, although some areas in the Lower Basin are projected to experience slight increases in precipitation, which is thought to be attributed to monsoonal influence in the region. Upper Basin precipitation is projected to increase in the fall and winter, and Lower Basin precipitation is projected to decrease.
- Snowpack is projected to decrease due to precipitation falling as rain rather than snow and warmer temperatures melting the snowpack earlier. Areas where precipitation does not change or increase is projected to have decreased snowpack in the fall and early winter. Substantial decreases in spring snowpack are projected to be widespread due to earlier melt or sublimation of snowpack.
- Runoff (both direct and base flow) is spatially diverse, but is generally projected to decrease, except in the northern Rockies. Runoff is projected to increase significantly in the higher elevation Upper Basin during winter but is projected to decrease during spring and summer.

The following future actions must be taken to implement solutions and help resolve the imbalance between water supply and demand in areas that use Colorado River water (U.S. Department of the Interior Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, December 2012):

- Resolution of significant uncertainties related to water conservation, reuse, water banking, and weather modification concepts.
- Costs, permitting issues, and energy availability issues relating to large-capacity augmentation projects need to be identified and investigated.
- Opportunities to advance and improve the resolution of future climate projections should be pursued.
- Consideration should be given to projects, policies, and programs that provide a wide-range of benefits to water users and healthy rivers for all users.

### **3.3.2 State Water Project Supplies**

The SWP consists of a series of pump stations, reservoirs, aqueducts, tunnels, and power plants operated by DWR and is an integral part of the effort to ensure that business and industry, urban and

suburban residents, and farmers throughout much of California have sufficient water. The SWP is the largest state-built, multipurpose, user-financed water project in the United States. Nearly two-thirds of residents in California receive at least part of their water from the SWP with approximately 70 percent of SWP's contracted water supply going to urban users and 30 percent to agricultural users. The primary purpose of the SWP is to divert and store water during wet periods in Northern and Central California and distribute it to areas of need in Northern California, the San Francisco Bay area, the San Joaquin Valley, the Central Coast, and southern California.

The availability of water supplies from the SWP can be highly variable. A wet water year may be followed by a dry or critically dry year and fisheries issues can restrict the operations of the export pumps even when water supplies are available.

The Sacramento-San Joaquin River Delta (Delta) is key to the SWP's ability to deliver water to its agricultural and urban contractors. All but five of the 29 SWP contractors receive water deliveries below the Delta (pumped via the Harvey O. Banks or Barker Slough pumping plants). However, the Delta faces many challenges concerning its long-term sustainability such as climate change posing a threat of increased variability in floods and droughts. Sea level rise complicates efforts in managing salinity levels and preserving water quality in the Delta to ensure a suitable water supply for urban and agricultural use. Furthermore, other challenges include continued subsidence of Delta islands, many of which are below sea level, and the related threat of a catastrophic levee failure as the water pressure increases, or as a result of a major seismic event.

Ongoing regulatory restrictions, such as those imposed by federal biological opinions (Biops) on the effects of SWP and the federal Central Valley Project (CVP) operations on certain marine life, also contributes to the challenge of determining the SWP's water delivery reliability. In dry, below-normal conditions, Metropolitan has increased the supplies delivered through the California Aqueduct by developing flexible CVP/SWP storage and transfer programs. The goal of the storage/transfer programs is to develop additional dry-year supplies that can be conveyed through the available Harvey O. Banks pumping plant capacity to maximize deliveries through the California Aqueduct during dry hydrologic conditions and regulatory restrictions. In addition, the California State Water Resources Control Board (SWRCB) has set water quality objectives that must be met by the SWP including minimum Delta outflows, limits on SWP and CVP Delta exports, and maximum allowable salinity level.

Metropolitan's Board approved a Delta Action Plan in June 2007 that provides a framework for staff to pursue actions with other agencies and stakeholders to build a sustainable Delta and reduce conflicts between water supply conveyance and the environment. The Delta action plan aims to prioritize immediate short-term actions to stabilize the Delta while an ultimate solution is selected, and mid-term steps to maintain the Delta while a long-term solution is implemented. Currently, Metropolitan is working towards addressing three basin elements: Delta ecosystem restoration, water supply conveyance, and flood control protection and storage development.

"Table A" water is the maximum entitlement of SWP water for each water contracting agency. Currently, the combined maximum Table A amount is 4.17 MAFY. Of this amount, 4.13 MAFY is the maximum Table A water available for delivery from the Delta pumps as stated in the State Water Contract. However, deliveries commonly are less than 50 percent of the Table A.

SWP contractors may receive Article 21 water on a short-term basis in addition to Table A water if requested. Article 21 of SWP contracts allows contractors to receive additional water deliveries only under specific conditions, generally during wet months of the year (December through March). Because an SWP contractor must have an immediate use for Article 21 supply or a place to store it outside of the SWP, there are few contractors like Metropolitan that can access such supplies.

Carryover water is SWP water allocated to an SWP contractor and approved for delivery to the contractor in a given year but not used by the end of the year. The unused water is stored in the SWP's share of San Luis Reservoir, when space is available, for the contractor to use in the following year.

Turnback pool water is essentially unused Table A water. Turnback pool water is able to be purchased by another contractor depending on its availability.

SWP Delta exports are the water supplies that are transferred directly to SWP contractors or to San Luis Reservoir storage south of the Delta via the Harvey O. Banks pumping plant. Estimated average annual Delta exports and SWP Table A water deliveries have generally decreased since 2005, when Delta export regulations affecting SWP pumping operations became more restrictive due to the Biops. A summary of SWP water deliveries from the years 2005 and 2013 is summarized in Table 3-1.

**Table 3-1: Metropolitan Colorado River Aqueduct Program Capabilities**

Year	Average Annual Delta Exports (MAF)	Average Annual Table A Deliveries (MAF)
2005	2.96	2.82
2013	2.61	2.55
<b>Percent Change</b>	<b>-11.7%</b>	<b>-9.4%</b>

The following factors affect the ability to estimate existing and future water delivery reliability:

- Water availability at the source: Availability depends on the amount and timing of rain and snow that fall in any given year. Generally, during a single dry year or two, surface and groundwater storage can supply most water deliveries, but multiple dry years can result in critically low water reserves.
- Water rights with priority over the SWP: Water users with prior water rights are assigned higher priority in DWR's modeling of the SWP's water delivery reliability, even ahead of SWP Table A water.
- Climate change: mean temperatures are predicted to vary more significantly than previously expected. This change in climate is anticipated to bring warmer winter storms that result in less snowfall at lower elevations, reducing total snowpack. From historical data, DWR projects that by 2050, the Sierra snowpack will be reduced from its historical average by 25 to 40 percent. Increased precipitation as rain could result in a larger number of "rain-on-snow" events, causing snow to melt earlier in the year and over fewer days than historically, affecting the availability of water for pumping by the SWP during summer.
- Regulatory restrictions on SWP Delta exports due to the Biops to protect special-status species such as delta smelt and spring- and winter-run Chinook salmon. Restrictions on SWP operations imposed

by state and federal agencies contribute substantially to the challenge of accurately determining the SWP's water delivery reliability in any given year.

- Ongoing environmental and policy planning efforts: the California WaterFix involves water delivery improvements that could reduce salinity levels by diverting a greater amount of lower salinity Sacramento water to the South Delta export pumps. The EcoRestore Program aims to restore at least 30,000 acres of Delta habitat, and plans to be well on the way to meeting that goal by the year 2020.
- Delta levee failure: The levees are vulnerable to failure because most original levees were simply built with soils dredged from nearby channels and were not engineered. A breach of one or more levees and island flooding could affect Delta water quality and SWP operations for several months. When islands are flooded, DWR may need to drastically decrease or even cease SWP Delta exports to evaluate damage caused by salinity in the Delta (Department of Water Resources, The State Water Project Final Delivery Capability Report 2015, July 2015).

DWR has altered the SWP operations to accommodate species of fish listed under the Biops, and these changes have adversely impacted SWP deliveries. DWR's Water Allocation Analysis indicated that export restrictions are currently reducing deliveries to Metropolitan as much as 150 TAF to 200 TAF under median hydrologic conditions.

Operational constraints likely will continue until a long-term solution to the problems in the Bay-Delta is identified and implemented. New biological opinions for listed species under the Federal ESA or by the California Department of Fish and Game's issuance of incidental take authorizations under the Federal ESA and California ESA might further adversely affect SWP and CVP operations. Additionally, new litigation, listings of additional species or new regulatory requirements could further adversely affect SWP operations in the future by requiring additional export reductions, releases of additional water from storage or other operational changes impacting water supply operations.

### **3.3.3 Storage**

Storage is a major component of Metropolitan's dry year resource management strategy. Metropolitan's likelihood of having adequate supply capability to meet projected demands, without implementing its Water Supply Allocation Plan (WSAP), is dependent on its storage resources.

Lake Oroville is the SWP's largest storage facility, with a capacity of about 3.5 MAF. The water is released from Oroville Dam into the Feather River as needed, which converges with the Sacramento River while some of the water at Bethany Reservoir is diverted from the California Aqueduct into the South Bay Aqueduct. The primary pumping plant, the Harvey O. Banks pumping plant, pumps Delta water into the California Aqueduct, which is the longest water conveyance system in California.

## **3.4 Groundwater**

Groundwater is pumped from three deep operating wells located within the City. The depth of the three wells, C-1, C-2, and C-4, ranges from 765 feet to 1,000 feet, with production varying from 4.5 cubic feet per second (cfs) to 21 cfs. A fourth well, C-5, is currently off-line and will be operational once funding is available.

Historical over-pumping from the Basin has led to critical overdraft and seawater intrusion. In 1966, the Los Angeles Superior Court adjudicated groundwater pumping rights. The City has since acquired water rights in the Basin from other party members in the amount of 4,860 AF. The Basin currently faces overdraft every year due to pumping exceeding the rate of natural groundwater replenishment. As a result, WRD tracks the amount of groundwater production that occurs annually in the Basin. The estimated annual overdraft in 2015 is 97,200 AF and the estimated accumulated overdraft is 813,300 AF (WRD, Engineering Survey and Report, May 2015).

Groundwater makes up the majority of the City's water supply portfolio. In 2015, the City relied on approximately 7,809 AFY of groundwater to meet their demands.

### **3.4.1 Basin Characteristics**

The Basin covers an area of about 270 square miles in the Los Angeles Coastal Plain in southeast Los Angeles County and has a total storage capacity of 13,800,000 AF. The Basin is bounded on the north by the Hollywood Basin, and the Elysian, Repetto, Merced, and Puente Hills. The southeast boundary is along Coyote Creek, which is used to separate the Basin from the Orange County Groundwater Basin. The southwest boundary is the Newport-Inglewood fault system and uplift which separates it from the West Coast Groundwater Basin.

Water bearing formations include Holocene and Pleistocene age sediments at depths that range from 1,000 feet to 2,200 feet. The Basin is divided into two forebays and two pressure areas: the Los Angeles forebay, the Montebello forebay, the Whittier pressure areas, and the Basin pressure area. Both forebays consists of unconfined groundwater conditions and relatively interconnected aquifers that extend up to 1,600 feet deep to provide recharge to the aquifer system. The pressure areas extends 2,200 feet below the surface and are the largest of the Basin divisions, consisting of many aquifers of permeable sands and gravels separated by semi-permeable to impermeable sandy clay.

The locations of both the Central and West Coast Basins is shown on Figure 3-4.



- Transfer from the Basin – Although not well quantified, groundwater from the Basin flows into the West Coast Groundwater Basin through the Newport Inglewood Uplift. This, along with natural percolation due to stormwater and irrigation, make up a small part of the overall recharge to the West Coast Groundwater Basin (WRD, Engineering Survey and Report, May 2015).

### 3.4.3 Groundwater Historical Extraction

A summary of the groundwater volume pumped by the City from 2011 to 2015 is shown in Table 3-2.

Table 3-2: Groundwater Volume Pumped (AF)

Retail: Groundwater Volume Pumped						
Groundwater Type	Location or Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	Central Groundwater Basin	8,648	8,873	9,074	9,254	7,809
<b>TOTAL</b>		<b>8,648</b>	<b>8,873</b>	<b>9,074</b>	<b>9,254</b>	<b>7,809</b>
NOTES:						

## 3.5 Summary of Existing and Planned Sources of Water

The actual sources and volume of water for the year 2015 is displayed in Table 3-3.

Table 3-3: Water Supplies, Actual (AF)

Retail: Water Supplies — Actual			
Water Supply	Additional Detail on Water Supply	2015	
		Actual Volume	Water Quality
Groundwater	Central Groundwater Basin	7,809	Drinking Water
Purchased or Imported Water	CBMWD	651	Drinking Water
Recycled Water	LACSD	2,335	Recycled Water
<b>Total</b>		<b>10,795</b>	
NOTES:			

2015 URBAN WATER MANAGEMENT PLAN

A summary of the projected amount of water supply per each source for the City is shown in Table 3-4.

Table 3-4: Water Supplies, Projected (AF)

Retail: Water Supplies — Projected						
Water Supply	Additional Detail on Water Supply	Projected Water Supply <i>Report To the Extent Practicable</i>				
		2020	2025	2030	2035	2040
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Groundwater	Central Groundwater Basin	8,680	8,680	8,680	8,680	8,680
Purchased or Imported Water	CBMWD	646	681	717	753	789
Recycled Water	LACSD	2,505	2,505	2,505	2,505	2,505
<b>Total</b>		<b>11,831</b>	<b>11,866</b>	<b>11,902</b>	<b>11,938</b>	<b>11,974</b>
NOTES:						

## 3.6 Recycled Water

The City uses recycled water to augment its groundwater and imported water supplies. Recycled water is currently used for non-potable purpose such as the irrigation of golf courses. Detailed information concerning the City's recycled water usage is included in Section 7.

## 3.7 Supply Reliability

### 3.7.1 Overview

Every urban water supplier is required to assess the reliability of their water service to its customers under normal, dry, and multiple dry water years. The City depends on a combination of imported and local supplies to meet its water demands and has taken numerous steps to ensure it has adequate supplies. Development of groundwater, groundwater recovery, and non-domestic water system opportunities augment the reliability of the imported water system. There are various factors that may impact reliability of supplies such as legal, environmental, water quality and climatic which are discussed below. The water supplies are projected to meet full-service demands; Metropolitan's 2015 UWMP finds that Metropolitan is able to meet, with existing supplies, full-service demands of its member agencies starting 2020 through 2040 during normal years, single dry year, and multiple dry years.

Metropolitan's 2015 Integrated Water Resources Plan (IRP) update describes the core water resource strategy that will be used to meet full-service demands at the retail level under all foreseeable hydrologic conditions from 2020 through 2040. The foundation of Metropolitan's resource strategy for achieving regional water supply reliability has been to develop and implement water resources programs and activities through its IRP preferred resource mix. This preferred resource mix includes conservation, local resources such as water recycling and groundwater recovery, Colorado River supplies and transfers, SWP supplies and transfers, in-region surface reservoir storage, in-region groundwater storage, out-of-region banking, treatment, conveyance and infrastructure improvements.

### 3.7.2 Metropolitan Integrated Water Resource Plan

The fundamental goal of the IRP is to have a reliable water system within southern California. Since the 2010 IRP, drought in California and across the southwestern United States has put the IRP adaptive management strategy to test. Dry conditions in California have persisted into 2015, resulting in a fourth consecutive year of drought. The year 2015 began with the driest January on record, resulting in the earliest and lowest snowpack peak in recorded history at only 17 percent of the traditional snowpack peak on April 1st. In the ten years since 2006, there were only two wet years, with the other eight years having been below normal, dry, or critically dry. The Colorado River watershed has also experienced an extended reduction in runoff. Within southern California, continuing dry conditions have impacted the region's local supplies, including its groundwater basins.

Southern California has a remarkable, unparalleled tradition of meeting its water challenges as a single cohesive region. Metropolitan serves as both importer of water and regional water planner. For the past generation, the IRP has served as the reliability road map for the region. Throughout 2015, Metropolitan engaged in a comprehensive process with its Board of Directors and member agencies to review how

conditions have changed since the 2010 IRP Update and to establish targets for achieving regional reliability, taking into account known opportunities and risks. Areas reviewed in the 2015 IRP Update include demographics, hydrologic scenarios, water supplies from existing and new projects, water supply reliability analyses, and potential resource and conservation targets.

The 2015 IRP Update approach explicitly recognizes that there are remaining policy discussions that will be essential to guiding the development and maintenance of local supplies and conservation. Following adoption of the 2015 IRP Update and its targets for water supply reliability, Metropolitan will begin a process to address questions such as how to meet the targets for regional reliability, what are local and what are regional responsibilities, how to finance regional projects, etc. This discussion will involve extensive interaction with Metropolitan's Board of Directors and member agencies, with input from the public. The findings and conclusions of the 2015 IRP Update are (Metropolitan, Integrated Water Resources Plan, 2015):

- Action is needed – Without the investments in conservation, local supplies and the California WaterFix targeted in the 2015 IRP Update, Metropolitan's service area would experience unacceptable level of shortage allocation frequency in the future.
- Stabilize SWP supplies – The goal for SWP supplies is to adaptively manage flow and export regulations to achieve a long-term Delta solution that will enable a healthy ecosystem and address water reliability challenges. Also, efforts will be made to work with California WaterFix and California EcoRestore to facilitate a continuation of collaborative adaptive management with key regulatory agencies.
- Develop and protect local supplies and water conservation – The 2015 IRP Update embraces and advances the regional self-sufficiency ethics by increasing the targets for additional local supplies and conservation.
- Maximize the effectiveness of storage and transfers – Rebuilding Metropolitan's supply of water reserves is imperative when the drought is over. A comprehensive water transfer approach that takes advantage of water when it is available will help to stabilize and build storage reserves, increasing the ability for Metropolitan to meet water demands in dry years.
- Continue with the adaptive management approach – The IRP is updated periodically to incorporate changed conditions, and an implementation report is prepared annually to monitor the progress in resources development. The 2015 IRP also includes Future Supply Actions that would advance a new generation of local supplies through public outreach; development of legislation and regulation; technical studies and support; and land and resource acquisitions.

### **3.7.3 Factors Impacting Reliability**

The Act requires a description of water supply reliability and vulnerability to seasonal or climatic shortage. The following are some of the factors identified by Metropolitan that may have an impact on the reliability of Metropolitan supplies.

### 3.7.3.1 Environment

Endangered species protection needs in the Delta have resulted in operational constraints to the SWP system, as mentioned previously in the State Water Project Supplies section.

### 3.7.3.2 Legal

The addition of more species under the Endangered Species Act and new regulatory requirements could impact SWP operations by requiring additional export reductions, releases of additional water from storage or other operational changes impacting water supply operations.

### 3.7.3.3 Water Quality

#### 3.7.3.3.1 *Imported Water*

Metropolitan is responsible for providing high quality potable water throughout its service area. Over 300,000 water quality tests are performed per year on Metropolitan's water to test for regulated contaminants and additional contaminants of concern to ensure the safety of its waters. Metropolitan's supplies originate primarily from the CRA and from the SWP. A blend of these two sources, proportional to each year's availability of the source, is then delivered throughout Metropolitan's service area.

Metropolitan's primary water sources face individual water quality issues of concern. The CRA water source contains higher TDS and the SWP contains higher levels of organic matter, lending to the formation of disinfection byproducts. To remediate the CRA's high level of salinity and the SWP's high level of organic matter, Metropolitan blends CRA and SWP supplies and upgraded four of its treatment facilities to include ozone treatment processes. In addition, Metropolitan has been engaged in efforts to protect its Colorado River supplies from threats of uranium, perchlorate, and chromium VI while also investigating the potential water quality impact of emerging contaminants, N-nitrosodimethylamine (NDMA), and pharmaceuticals and personal care products (PPCP). While unforeseeable water quality issues could alter reliability, Metropolitan's current strategies ensure the deliverability of high quality water.

The presence of Quagga mussels in water sources is a water quality concern. Quagga mussels are an invasive species that was first discovered in 2007 at Lake Mead, on the Colorado River. This species of mussels form massive colonies in short periods of time, disrupting ecosystems and blocking water intakes. They are capable of causing significant disruption and damage to water distribution systems. Controlling the spread and impacts of this invasive species within the CRA requires extensive maintenance and results in reduced operational flexibility.

#### 3.7.3.3.2 *Groundwater*

Groundwater in the CBMWD is continually monitored because of its susceptibility to seawater intrusion, potential contamination from adjacent basins, and migration of shallow contamination into deeper aquifers. The Alamitos Barrier, located in the southwest portion of CBMWD's service area, provides a buffer between the Basin and seawater intrusion. Imported Water is purchased from Metropolitan to be

used for surface spreading at the Montebello Fore bay and for seawater barrier injection at the Alamitos Barrier.

Except for a few instances of groundwater contamination problems, the Basin's groundwater quality is remarkably high. Contamination still occurs in isolated areas within the Basin. The major contaminants are listed below.

- Perchlorate
- Manganese
- Volatile Organic Compounds (VOC)
- Arsenic

### **Perchlorate**

Perchlorate is a chemical compound used in a variety of defense and industrial applications, such as rockets, missiles, road flare, fireworks, air bag inflators, lubricating oils, tanning and finishing leather, and paints and enamels. As such, perchlorate commonly found in area where there was a defense industry complex. Human uptake of perchlorate is a health concern as it can inhibit the proper uptake of iodide by the thyroid gland, resulting in a decrease in hormones for normal growth and development and normal metabolism. Those that are affected most by the ingestion of perchlorate are infants, small children, and pregnant women. The California Department of Public Health (CDPH) finalized a primary maximum contaminant level (MCL) at 6 µg/L effective on October 2007.

Five production wells within the Basin had detectable perchlorate levels and only 2 out of 271 production wells contained perchlorate concentrations above the MCL.

The San Gabriel Valley Groundwater Basin was an important home of the defense industry in the 1950's and 1960's. Because of the amount of experimentation with rockets and rocket fuels, perchlorate is one of the most abundant contaminants that seeped into the groundwater. In response, the CBMWD Board of Directors supported a plan to clean up the contaminated groundwater before it migrated into the Basin. The "San Gabriel Basin Restoration Fund" was established through an act of Congress and the San Gabriel Valley Water Quality Authority was created. Eleven firms agreed to pay \$200 million to construct various treatment facilities and other water quality projects throughout the San Gabriel Valley to remove contaminants and restore the groundwater basin. That effort by the Water Quality Authority continues to this day.

### **Manganese**

Manganese is naturally-occurring is an objectionable contaminant in water supply mainly for aesthetic reasons. Stains caused by manganese are black and difficult to remove. Manganese is a required nutrient that exists in natural environments. Humans need about 1 to 10 milligrams per day for normal dietary requirements. However, elevated levels can have serious impacts, particularly on children. For example, neurologic damage (mental and emotional disturbances, as well as difficulty in moving) has been reported to be permanent among miners exposed to high levels of airborne manganese for long periods of time. Lower chronic exposures in the workplace resulted in a decrease in various motor skills, balance and coordination, as well as increased memory loss, anxiety, and sleeplessness.

The secondary MCL for manganese is 5 ppb. Manganese concentrations in the Basin has widespread vertical and horizontal variations. 49 out of 236 production wells in the Basin had manganese concentrations that exceeded the MCL.

### **Volatile Organic Compounds**

VOC's, such as perchloroethylene (PCE), was used as the primary chemical by dry cleaners for decades and trichloroethylene (TCE) was used as an industrial cleaning and degreasing solvent. Both of these organic compounds were generally used in quantities sufficient to contaminate the groundwater and both of them are considered carcinogenic even at low concentrations.

. There are a number of granulated activated carbon (GAC) wellhead treatment programs underway in the San Gabriel Valley. However, about fifteen years ago, the EPA and CBMWD noted the movement of VOC's from Main Basin into the Basin through the Whittier Narrows area. CBMWD took action and in 2001, began construction of the Water Quality Protection Program (WQPP) to intercept and treat the VOC plume before it could arrive at local wells.

Recently, a contaminated groundwater spill site was identified by the EPA. The Omega Chemical Corporation operated between 1976 and 1991 in an area of Whittier near Whittier Boulevard. Drums of waste solvents and other chemicals from various industrial activities were processed at this facility. As a result of the operations, spills and leaks of various chemicals occurred. The soil and groundwater beneath the Omega property became contaminated with high concentrations of PCE and TCE as well as Freon's 11 and 113 and other contaminants. Contaminated groundwater now extends about 4 miles down gradient of the Whittier property into Santa Fe Springs and Norwalk. In January 1999, the Omega site was placed on the EPA's National Priorities List, which is also known as Superfund List. EPA is now engaged in reviewing and selecting a methodology for cleaning up the contamination plume. The selected methodology will likely be something similar to the existing WQPP program operated by CBMWD for the contamination coming out of the Main Basin. CBMWD will continue to work with EPA and the retail agencies in the area to further develop this methodology in the near future.

### **Arsenic**

Arsenic is a naturally occurring element that exists in the earth's rock formation and in the seas. Natural sources of arsenic include weathering and erosion of rocks, deposition of arsenic in water bodies, and uptake of the metal by animals and plants. Arsenic is odorless and tasteless, but it is toxic to humans, particularly in high concentrations or in low concentrations over a prolonged period. Arsenic is classified as a known human carcinogen by the EPA. CDPH established the primary MCL for arsenic at 10 µg/L effective November 28, 2008.

Ten production wells in the Basin contained arsenic concentrations above the established MCL between the years 2006-2009 (WRD, Regional Groundwater Monitoring Report, February 2010).

### **3.7.3.4 Climate Change**

Changing climate patterns are expected to shift precipitation patterns and affect water supply. Unpredictable weather patterns will make water supply planning more challenging. The areas of concern for California include a reduction in Sierra Nevada Mountain snowpack, increased intensity and frequency

of extreme weather events, and rising sea levels causing increased risk of Delta levee failure, seawater intrusion of coastal groundwater basins, and potential cutbacks on the SWP and CVP.

Legal, environmental, and water quality issues may have impacts on Metropolitan supplies. It is felt, however, that climatic factors would have more of an impact than legal, water quality, and environmental factors. Climatic conditions have been projected based on historical patterns but severe pattern changes are still a possibility in the future.

### **3.7.4 Normal-Year Reliability Comparison**

The City has entitlements to receive imported water from Metropolitan through CBMWD via connection to Metropolitan's regional distribution system. Although pipeline and connection capacity rights do not guarantee the availability of water, they do guarantee the ability to convey water when it is available to the Metropolitan distribution system. All imported water supplies are assumed available to the City from existing water transmission facilities. The demand and supplies listed below also include local groundwater supplies that are available to the City through adjudicated groundwater basin rights.

The City's reliability analysis follows that of Metropolitan and CBMWD where the average year is taken to be the average of 1922 to 2004 hydrology.

### **3.7.5 Single-Dry Year Reliability Comparison**

A single-dry year is defined as a single year of no to minimal rainfall within a period that average precipitation is expected to occur. The City has documented that it is 100 percent reliable for single dry year demands from 2020 through 2040 with a demand increase of three percent using water year 1977 as the single dry-year. This percentage was determined for CBMWD by Metropolitan based on historical data for all of its retail agencies and applied to the City.

### **3.7.6 Multiple-Dry Year Period Reliability Comparison**

Multiple-dry years are defined as three or more years with minimal rainfall within a period of average precipitation. The City is capable of meeting all customers' demands with significant reserves held by Metropolitan, local groundwater supplies, and conservation in multiple dry years from 2020 through 2040 with a demand increase of five percent using water years 1990-1992 as the driest years. The percent increase was developed for CBMWD by Metropolitan and applied to the City for the UWMP, the results are located in Table 3-5.

Table 3-5: Basis of Water Year Data

Retail: Basis of Water Year Data			
Year Type	Base Year	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	1922-2004		100%
Single-Dry Year	1977		103%
Multiple-Dry Years 1st Year	1990		105%
Multiple-Dry Years 2nd Year	1991		105%
Multiple-Dry Years 3rd Year	1992		105%
NOTES:			

### 3.8 Supply and Demand Assessment

A comparison between the supply and the demand for projected years between 2020 and 2040 is shown in Table 3-6. As stated above, the available supply will meet projected demand due to diversified supply and conservation measures.

Table 3-6: Normal Year Supply and Demand Comparison (AF)

Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply totals	11,831	11,866	11,902	11,938	11,974
Demand totals	11,831	11,866	11,902	11,938	11,974
Difference	0	0	0	0	0
NOTES:					

A comparison between the supply and the demand in a single dry year is shown in Table 3-7. As stated above, the available supply will meet projected demand due to diversified supply and conservation measures.

Table 3-7: Single Dry Year Supply and Demand Comparison (AF)

Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply totals	12,185	12,222	12,259	12,296	12,333
Demand totals	12,185	12,222	12,259	12,296	12,333
Difference	0	0	0	0	0
NOTES:					

A comparison between the supply and the demand in multiple dry years is shown in Table 3-8.

Table 3-8: Multiple Dry Years Supply and Demand Comparison (AF)

Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040
First year	Supply totals	12,422	12,460	12,497	12,535	12,573
	Demand totals	12,422	12,460	12,497	12,535	12,573
	Difference	0	0	0	0	0
Second year	Supply totals	12,422	12,460	12,497	12,535	12,573
	Demand totals	12,422	12,460	12,497	12,535	12,573
	Difference	0	0	0	0	0
Third year	Supply totals	12,422	12,460	12,497	12,535	12,573
	Demand totals	12,422	12,460	12,497	12,535	12,573
	Difference	0	0	0	0	0
NOTES:						

## 4 DEMAND MANAGEMENT MEASURES

The goal of the Demand Management Measures (DMM) section is to provide a comprehensive description of the water conservation programs that a supplier has implemented, is currently implementing, and plans to implement in order to meet its urban water use reduction targets. The reporting requirements for DMM have been significantly modified and streamlined in 2014 by Assembly Bill 2067. For a retail agency such as the City the requirements changed from having 14 specific measures to six more general requirements plus an “other” category.

### 4.1 Water Waste Prevention Ordinances

City Council adopted the resolution implementing emergency water conservation regulations (Resolution No. 2015-16) on June 11, 2015. The resolution was implemented in response to the California Governor’s state of emergency drought declaration and the new State Water Resources Control Board drought response plan regulations.

The City’s emergency regulations will remain in effect until the state mandated restrictions expire, at which time the City Council will review the need for conservation measures. Prohibition against waste has been established for the following activities/water using features:

- Application of potable water to outdoor landscapes in a manner that causes runoff
- Use of potable water for irrigation during and 48 hours following measureable precipitation
- Use of a hose that dispenses potable water to wash a motor vehicle except when the hose has a shut-off nozzle
- Application of potable water to driveways and sidewalks
- Use of potable water in decorative water features unless it is part of a recirculating system
- Restrictions on time and duration of landscape watering

The City’s water conservation resolution is included in Appendix D.

The City adopted an Emergency Water Conservation Resolution in August 2014 requiring water conservation measures to curb water use by 28 percent. In June 2015 the City Council expanded upon the water conservation measures to address outdoor landscapes and water runoff, the use of hoses equipped with a shut-off nozzle, fountains, and when landscape areas may be watered. Violation of the regulations is subject to a fine of up to \$500 per day. The City receives complaints from residents and an inspector will investigate. A letter will be forwarded to the resident requiring the wasteful actions to cease. To date all residents have complied after receiving a letter. Water wasting messages have been included in the monthly newspaper that is sent to all addresses and on the City’s website.

### 4.2 Metering

The City requires meters for all water connections and bills by volume of use. All water service connections, with the exception of dedicated fire services, are metered. The City has retrofitted all

existing unmetered connections to be metered. The City bills its customers according to meter consumption. Meter calibration and periodic replacement ensures that customers are paying for all of the water they consume and encourages conservation. Metering allows the City to conserve 20 to 30 percent of the total water demand and up to 40 percent savings during peak demand periods as estimated by the California Urban Water Conservation Council's (CUWCC) Best Management Practices (BMP) Costs and Savings Study performed in December 2003. The measure of effectiveness will include a comparison of water use before and after meter calibration.

The City has a meter replacement program that replaces approximately 1,000 old, under-registering meters with new meters. Since 2010, approximately 4,500 meters have been replaced. A more aggressive replacement program is anticipated over the next five years to replace 3,000 meters each year with an automatic meter reading (AMR) system. The City received a grant to replace approximately 300 residential water meters with AMR meters. The City will evaluate and determine if the remaining meters should be replaced. A replacement program would be established and the meters would be replaced over several years.

All landscape meters are dedicated water meters. Since 2010, the City has installed water efficient sprinkler heads at several median and parkway sites. An audit was conducted at one site that found there was two-thirds in water savings. Twenty weather-based smart controllers at several median strips have been installed. Medians and parkway irrigation systems have been reduced by approximately 30 percent. At several medians turf has been removed and drought tolerant ground cover installed. The City is using more recycled mulch in planters and around tree wells that suppress weeds and conserve water. Drip systems, micro spray systems, and rotor streams have been installed at several parks. A goal for the next five years is to convert all medians, parkways, and parks to water efficient sprinkler heads and replace the remaining irrigation controllers with smart controllers.

### **4.3 Conservation Pricing**

The City implements a FY 2015-16 rate structure that includes a uniform residential charge of \$23.35 for the first 10 units (hundred cubic feet, HCF) and \$1.71 for each additional unit on a two month billing cycle (for a typical residential meter). These rates will increase by approximately ten percent per year through FY 2020-21. The City's commercial water rates are summarized in Table 4-1.

Table 4-1: Cerritos Commercial Water Usage Rates FY 2015-16

Meter Size	Tier	Water Rate (\$/HCF)
1"	First 25 units	\$79.18
	Over base	\$1.71
1.5"	First 50 units	\$158.38
	Over base	\$1.71
2"	First 100 units	\$316.75
	Over base	\$1.71
3"	First 150 units	\$475.12
	Over base	\$1.71
4"	First 175 units	\$554.31
	Over base	\$1.71
6"	First 200 units	\$633.50
	Over base	\$1.71
8"	First 225 units	\$664.00
	Over base	\$1.71
10"	First 250 units	\$738.15
	Over base	\$1.71

#### 4.4 Public Education and Outreach

The City recognizes the continued need for a public information program to maintain and increase the public's awareness of water and the need to use it wisely. The City promotes water conservation and other resource efficiencies in coordination with CBMWD, Metropolitan, AWWA, the National Association of Water Companies, and the California Association of Water Companies.

CBMWD's public information efforts consist of a variety of programs and practices that are used to educate the public about water conservation. Conservation literature is provided to the public at various one-day programs and at community events.

CBMWD also provides the community with a Speakers Bureau through which CBMWD's Board of Directors and staff work with local civic organizations and service clubs to provide information on a variety of programs and projects that promote conservation. Additionally, CBMWD provides education through its website, an interactive Blog, and various publication materials.

CBMWD has effectively bolstered its community outreach and public education programs by integrating social marketing strategies with existing outreach programs. CBMWD uses social media to disseminate information through websites such as Twitter, Facebook and YouTube. CBMWD has realized many campaign successes of increased community involvement, which is reflective in the upward curve of its website traffic.

The City participates in CBMWD's school education programs that promote water conservation to elementary through high school students. CBMWD currently offers the following programs within its service area as well as the City of Cerritos:

- Water Squad Investigations (Grades 4 – 12)
- Water Wanderings (Grades 4 – 5)
- Think Watershed (Grades 4 – 6)
- Think Earth! It's Magic (Grades K – 5)
- Think Water! It's Magic (After School Program for Grades K – 5)
- "Water Is Life" Poster Contest (Grades 4 – 8)
- Waterlogged (Grades 9 – 12)
- Sewer Science (Grades 9-12)
- Conservation Connection: Water & Energy in Southern California (Grades 5 – 8)
- Water for the City: Southern California Urban Water Cycle (Grades 4 –8)

## **4.5 Programs to Assess and Manage Distribution System Real Loss**

Senate Bill 1420 signed into law in September 2014 requires urban water suppliers that submit UWMPs to calculate annual system water losses using the water audit methodology developed by the AWWA. SB 1420 requires the water loss audit be submitted to DWR every five years as part of the urban water supplier's UWMP. Water auditing is the basis for effective water loss control. DWR's UWMP Guidebook include a water audit manual intended to help water utilities complete the AWWA Water Audit on an annual basis. A Water Loss Audit was completed by the City which identified areas for improvement and quantified total loss. Multiple criteria are a part of each validity score and a system wide approach will need to be implemented for the City's improvement. Quantified water loss for the FY 2014-15 was 95.6 AF which is a significant volume and presents opportunities for improvement.

The City's surveillance of its water system to detect leaks is an on-going operation. The City recognizes the urgency of repairing leaks and responds to any leak in an expedient manner. The City's water system is relatively new, as the main distribution line was completed in the late 1960s and the residential distribution lines were completed in the late 1970s and early 1980s. The system is designed to operate with approximately 80 pounds of pressure, and includes steel lines coated with cement. As a result, the system rarely experiences leaks. However, should a leak occur, the City's Supervisory Control and Data Acquisition System (SCADA) would immediately alert City staff.

The City's SCADA system monitors all pumping stations and the Metropolitan connection. The SCADA system allows the City to monitor the water system 24 hours a day. If situations where the water supply is disrupted (via leak, break, etc.) occur, a SCADA alarm will notify City operators within ten minutes. This immediate response system allows City staff to respond within 30 minutes. In 2010, the City only had one main break, which shows both the reliability of the City's relatively new water system and the accuracy of the City's SCADA monitoring system. Recently, there have been very few distribution line breaks in the

City's system, and therefore, the amount of time and expenditures dedicated to leak detection has been limited and not significant enough for the City to maintain detailed records of the few breaks that have occurred.

In 1996, CBMWD and WBMWD partnered with the USBR and hired a consultant to develop and provide a Water Audit and Leak Detection Program. The program was offered to 40 water purveyors. Of the 40, only 10 participated in the audit, and of the 10, only three agencies found their unaccounted-for water to be above 10 percent.

These conservation measures have proven to be very effective, given the reliable use of the SCADA system and the limited number of line breaks. The CUWCC has established a standard rate of water savings based on the repair of a distribution line: a 1-inch crack in a distribution main at 100 psi can leak 57 gallons per minute. Cost and savings depend on the age of infrastructure for the water system. Since the City's system is relatively new, costs and savings are minimal. If line breaks become more regular, the staff will look into developing a regular system water audits, leak detection, and repair.

## **4.6 Water Conservation Program Coordination and Staffing Support**

The City conservation activities are provided through the CBMWD Conservation Coordinator. The CBMWD Conservation Coordinator investigates Federal, State, and local funding to develop new programs throughout CBMWD's service area, benefiting the City's service area through program implementation.

## **4.7 Other Demand Management Measures**

During the past five years, FY 2010-11 to 2014-15, the City, with the assistance of CBMWD, has implemented many water use efficiency programs for its residential, CII, and landscape customers as described below. The City will continue to implement all applicable programs in the next five years.

### **4.7.1 Residential Programs**

#### **Socal Water\$mart Rebate Program for Residential**

The City through CBMWD offers rebates for high efficiency toilets (HET), high efficiency clothes washers (HECW), turf removal, weather based irrigation controllers (WBIC), rain barrels, rotating nozzles for pop-up spray heads, and soil moisture sensor systems (SMSS).

The largest amount of water used inside a home, 30 percent, goes toward flushing the toilet. The HET Program offers free HETs and rebates to residential customers for replacing their standard, water-guzzling toilets with HETs. HETs use just 1.28 gallons of water or less per flush, which is 20 percent less water than standard toilets. In addition, HETS save an average of 38 gallons of water per day while maintaining high performance standards.

The HECW Program is one of CBMWD's more successful programs. Rebates give customers incentives to purchase HECWs although they are more expensive than standard models, and in addition to water savings HECWs provide the added benefits of using 60 percent less energy and 50 percent less detergent.

## **4.7.2 CII Programs**

### **Socal Water\$mart Rebate Program for CII**

The City through CBMWD offers financial incentives under the Socal Water\$mart Rebate Program which offers rebates for various water efficient devices to CII customers, such as high efficiency toilets, ultralow volume urinals, connectionless food steamers, air-cooled ice machines, pH-cooling towers controller, and dry vacuum pumps.

### **Other CII Rebate Programs**

In addition to the Water\$mart Rebates, the City through CBMWD also offers rebates for WBICs, central computer irrigation controllers, large rotary nozzles, rotating nozzles for pop-up spray heads, ice-making machines, laminar flow restrictors, in-stem flow restrictors, plumping flow control, SMSS, turf removal, public agency landscape, landscape irrigation surveys, and water savings surveys.

## **4.7.3 Landscape Programs**

### **Smart Gardening Workshops**

CBMWD continues a partnership with the Los Angeles County Department of Public Works to bring free, educational gardening workshops to local residents. The workshops, which are offered in English and Spanish, provide information on California native plants, composting and gardening tips for residents, business owners, and local landscapers.

### **Drought Gardening Classes**

With the increased interest in removing lawns to conserve water, CBMWD partnered with Metropolitan to host Drought Gardening Classes throughout the service area. These three hour classes provide information and the tools on how to create drought tolerant landscaping. Residents are taught by a landscape professional. Each resident leaves the class with a better understanding on how water flows outside their home and how to best capture and use it for irrigation.

### **DWR Grant (Prop 50) – Large Landscape Water Conservation/Management and Education Program**

The Large Landscape Water Conservation, Runoff Reduction and Educational Program provides \$900,000 in funding for the implementation of a water management program using weather-based irrigation controllers and wireless technologies to significantly reduce the amount of runoff from large landscapes, street medians, and residential properties. CBMWD partners with local public agencies such as cities and school Districts to create Demonstration Gardens that enrich the environmental awareness of the community and promote the benefits of water efficient gardens.

### **U.S. D.O.E. (Energy Efficiency Conservation Block Grant) Water and Energy Emergency End Use Demand Management Measures Grant**

The Water and Energy Emergency End Use Demand Management Measures Grant in the amount of \$2,000,000 was awarded to Central Basin under the United States Department of Energy Recovery Act - Energy Efficiency and Conservation Block Grant Program. Under this program, funding is provided to purchase and install a series of wireless (ET) controllers in residential and commercial settings that use

radio commands for periodic pressure and management adjustments. A second element of the grant addresses water and energy demand management in recycled pipelines.

**Socal Water\$mart Rebate Program for Landscape**

The City through CBMWD also offers financial incentives under the SoCal Water\$mart Rebate Program for a variety of water efficient landscape devices, such as Central Computer Irrigation Controllers, large rotary nozzles, and in-stem flow regulators.

## 5 WATER SHORTAGE CONTINGENCY PLAN

### 5.1 Overview

Recent water supply challenges throughout the American Southwest and the State of California have resulted in the development of a number of policy actions that water agencies would implement in the event of a water shortage. In southern California, the development of such policies has occurred at both the wholesale and retail level. This section describes how new and existing policies that Metropolitan, CBMWD, and the City have in place to respond to water supply shortages.

### 5.2 Shortage Actions

#### 5.2.1 Metropolitan Water Surplus and Drought Management Plan

Metropolitan evaluates the level of supplies available and existing levels of water in storage to determine the appropriate management stage annually. Each stage is associated with specific resource management actions to avoid extreme Shortages to the extent possible and minimize adverse impacts to retail customers should an extreme Shortage occur. The sequencing outlined in the Water Surplus and Drought Management (WSDM) Plan reflects anticipated responses towards Metropolitan's existing and expected resource mix.

Surplus stages occur when net annual deliveries can be made to water storage programs. Under the WSDM Plan, there are four surplus management stages that provide a framework for actions to take for surplus supplies. Deliveries in Diamond Valley Lake (DVL) and in SWP terminal reservoirs continue through each surplus stage provided there is available storage capacity. Withdrawals from DVL for regulatory purposes or to meet seasonal demands may occur in any stage.

The WSDM Plan distinguishes between shortages, severe shortages, and extreme shortages. The differences between each term are listed below.

- Shortage: Metropolitan can meet full-service demands and partially meet or fully meet interruptible demands using stored water or water transfers as necessary.
- Severe Shortage: Metropolitan can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation.
- Extreme Shortage: Metropolitan must allocate available supply to full-service customers.

There are six shortage management stages to guide resource management activities. These stages are defined by shortfalls in imported supply and water balances in Metropolitan's storage programs. When Metropolitan must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition. Figure 5-1 gives a summary of actions under each surplus and shortage stages when an allocation plan is necessary to enforce mandatory cutbacks. The goal of the WSDM Plan is to avoid Stage 6, an extreme shortage.

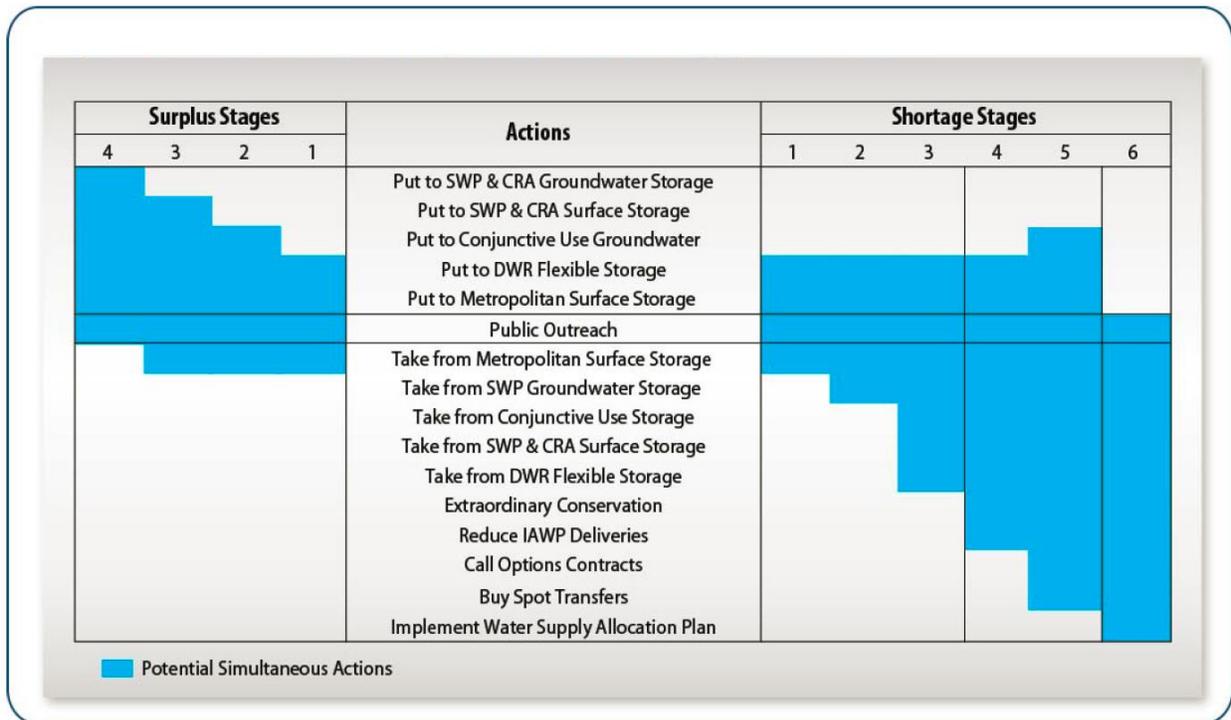


Figure 5-1: Resource Stages, Anticipated Actions, and Supply Declarations

Metropolitan’s Board of Directors adopted a Water Supply Condition Framework in June 2008 in order to communicate the urgency of the region’s water supply situation and the need for further water conservation practices. The framework has four conditions, each calling increasing levels of conservation. Descriptions for each of the four conditions are listed below:

- Baseline Water Use Efficiency: Ongoing conservation, outreach, and recycling programs to achieve permanent reductions in water use and build storage reserves.
- Condition 1 Water Supply Watch: Local agency voluntary dry-year conservation measures and use of regional storage reserves.
- Condition 2 Water Supply Alert: Regional call for cities, counties, member agencies, and retail water agencies to implement extraordinary conservation through drought ordinances and other measures to mitigate use of storage reserves.
- Condition 3 Water Supply Allocation: Implement Metropolitan’s WSAP

As noted in Condition 3, should supplies become limited to the point where imported water demands cannot be met, Metropolitan will allocate water through the WSAP (Metropolitan, 2015 UWMP, June 2016).

## 5.2.2 Metropolitan Water Supply Allocation Plan

Metropolitan's imported supplies have been impacted by a number of water supply challenges as noted earlier. In case of extreme water shortage within the Metropolitan service area the response is the implementation of its WSAP.

Metropolitan's Board of Directors adopted the WSAP in February 2008 to fairly distribute a limited amount of water supply and to apply it through a detailed methodology to reflect a range of local conditions and needs of the region's retail water consumers.

Metropolitan's Board of Directors adopted the WSAP in February 2008 in the event that Metropolitan was unable to meet "firm demands" (non-interruptible supplies).

The WSAP includes the specific formula for calculating member agency supply allocations and the key implementation elements needed for administering an allocation. Metropolitan's WSAP is the foundation for the urban water shortage contingency analysis required under Water Code Section 10632 and is part of Metropolitan's 2015 UWMP.

Metropolitan's WSAP was developed in consideration of the principles and guidelines in Metropolitan's 1999 WSDM Plan. The WSAP's formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level for shortages of Metropolitan supplies of up to 50 percent. The formula takes into account the impact on retail customers and the economy, growth and population, changes in supply conditions, investments in local resources, demand hardening aspects of non-potable recycled water use, implementation of conservation savings program, participation in Metropolitan's interruptible programs, and investments in facilities.

The formula is calculated in three steps: 1) based period calculations, 2) allocation year calculations, and 3) supply allocation calculations. The first two steps involve standard computations, while the third step contains specific methodology developed for the WSAP.

**Step 1: Base Period Calculations** – The first step in calculating a water supply allocation is to estimate water supply and demand using a historical based period with established water supply and delivery data. The base period for each of the different categories of supply and demand is calculated using data from the two most recent non-shortage years, 2013-2014.

**Step 2: Allocation Year Calculations** – The next step in calculating the water supply allocation is estimating water needs in the allocation year. This is done by adjusting the base period estimates of retail demand for population or economic growth and changes in local supplies.

**Step 3: Supply Allocation Calculations** – The final step is calculating the water supply allocation for each retail agency based on the allocation year water needs identified in Step 2. Each element and its application in the allocation formula are discussed in detail in Metropolitan's WSAP.

In order to implement the WSAP, the Metropolitan Board makes a determination on the level of the regional shortage, based on specific criteria, annually in April. The allocations, if deemed necessary, go into effect in July of the same year and remain in effect for a 12-month period. The schedule is made at the discretion of the Board.

Metropolitan's 2015 UWMP forecasts that Metropolitan will be able to meet projected firm demands throughout the forecast period from 2020 to 2040. However, these projections do not mean that Metropolitan would not implement its WSAP during this period (Metropolitan, 2015 UWMP, May 2016).

### **5.2.3 CBMWD's Water Supply Allocation Plan**

CBMWD's Board of Directors approved to move forward reevaluating CBMWD's existing plan. The framework for CBMWD's WSAP contains similar guiding principles under Metropolitan's plan.

- The baseline for CBMWD retail agency demand is estimated on a two year average during FY 2012-2013 and FY 2013-2014.
- Conservation Demand Hardening credits can be applied using a method based on GPCD water use reductions. Qualifying mandatory conservation ordinances and requirements can be taken into consideration.
- Includes a provision for replenishment water deliveries to drought-impacted groundwater basins through a qualifying consultation process with Metropolitan.
- An Allocation Surcharge will be imposed to agencies who exceed their maximum allocated supplies.

Water use between 100 percent and 115 percent of the allocated amount will result in an Allocation Surcharge of \$1,480 per AF. Water use greater than 115 percent of the allocated amount will result in an Allocation Surcharge of \$2,960 per AF.

The WSAP will become effective once a regional shortage is declared by Metropolitan. The allocation period typically covers a fiscal year 12-month period beginning in July and ending in the following June. Monthly reports can be used to track potential overage of annual allocations that might be charged at the end of the 12-month allocation period (CBMWD, CBMWD Imported Water Supply Allocation Plan, October 2014)

### **5.2.4 City of Cerritos**

The City adopted an Emergency Water Conservation Resolution in August 2014 requiring water conservation measures to curb water use by 28 percent. In June 2015 the City Council expanded on the water conservation measures to address outdoor landscapes and water runoff, the use of hoses equipped with a shut-off nozzle, fountains, and when landscape areas may be watered. Violation of the regulations is subject to a fine of up to \$500 per day. The City receives complaints from residents and an inspector will investigate. A letter will be forwarded to the resident requiring the wasteful actions to cease. To date all residents have complied after receiving a letter. Water wasting messages have been included in the monthly newspaper that is sent to all addresses and is on the City's website. A summary of the stages of water shortage is shown in Table 5-1. Stages 1 and 2 correspond to the water shortage stages identified in the City's Resolution No. 91-6, February 1991. Stage 3 was added in this UWMP for planning purposes. The City reduces their water supply based on the amount set by its wholesale water provider, CBMWD.

Table 5-1: Stages of Water Shortage Contingency Plan

Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction <sup>1</sup>	Water Supply Condition
1	Up to 5%	The City Council will declare a Phase 1 water shortage based on the severity (mild) of the shortage emergency to accomplish the necessary water conservation.
2	Up to 10%	The City Council will declare a Phase 2 water shortage based on the severity (moderate) of the shortage emergency to accomplish the necessary water conservation.
3	Up to 50%	The City Council will declare a water shortage emergency when the severity of the water supply exceeds that of Stage 2.
<sup>1</sup> One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES:		

### 5.3 Three-Year Minimum Water Supply

As a matter of practice, Metropolitan does not provide annual estimates of the minimum supplies available to its member agencies. As such, Metropolitan member agencies must develop their own estimates for the purposes of meeting the requirements of the Act.

Section 135 of the Metropolitan Water District Act declares that a member agency has the right to invoke its “preferential right” to water, which grants each member agency a preferential right to purchase a percentage of Metropolitan’s available supplies based on specified, cumulative financial contributions to Metropolitan. Each year, Metropolitan calculates and distributes each member agency’s percentage of preferential rights. However, since Metropolitan’s creation in 1927, no member agency has ever invoked these rights as a means of acquiring limited supplies from Metropolitan.

As captured in its 2015 UWMP, Metropolitan believes that the water supply and demand management actions it is undertaking will increase its reliability throughout the 25-year period addressed in its plan. Thus for purposes of this estimate, it is assumed that Metropolitan and CBMWD will be able to maintain the identified supply amounts throughout the three-year period.

The Three Year Estimated Minimum Water Supply is listed in Table 5-2.

Table 5-2: Minimum Supply Next Three Years (AF)

Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	12,450	12,450	12,450
NOTES:			

## 5.4 Catastrophic Supply Interruption

Given the great distances that imported supplies travel to reach CBMWD, the region is vulnerable to interruptions along hundreds of miles aqueducts, pipelines and other facilities associated with delivering the supplies to the region. Additionally, the infrastructure in place to deliver supplies are susceptible to damage from earthquakes and other disasters.

### 5.4.1 Metropolitan

Metropolitan has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM Plan and WSAP. Metropolitan also developed an Emergency Storage Requirement to mitigate against potential interruption in water supplies resulting from catastrophic occurrences within the southern California region, including seismic events along the San Andreas Fault. In addition, Metropolitan is working with the State to implement a comprehensive improvement plan to address catastrophic occurrences that could occur outside of the southern California region, such as a maximum probable seismic event in the Delta that would cause levee failure and disruption of SWP deliveries. For greater detail on Metropolitan’s planned responses to catastrophic interruption, please refer to Metropolitan’s 2015 UWMP.

### 5.4.2 City of Cerritos

If a catastrophic supply interruption were to occur, the City has numerous mechanisms in place to supply water to its system as well as neighboring agencies.

- Southern California Edison (SCE) powered well with a 750 KVV backup diesel generator that pumps into a 12 million gallon reservoir. Three natural gas engines pump potable water on demand from the reservoir into the distribution system.
- Natural gas engine pumps water from a deep well into the distribution system.
- SCE powered well that pumps into a 12 million gallon reservoir and six booster pumps with a 750 KVV backup diesel generator that pumps water into the distribution system.
- Interconnection with CBMWD/Metropolitan.
- Interconnections with seven public and private water companies that in an emergency could supply one another with potable water.

## 5.5 Prohibitions, Penalties and Consumption Reduction Methods

### 5.5.1 Prohibitions

The City's Water Conservation Ordinance No. 1586 lists water conservation requirements that will take effect upon implementation by the City Council. These prohibitions will promote the efficient use of water, reduce or eliminate water waste, and enable implementation of the City's Water Shortage Contingency Measures.

Water conservation measures become more restrictive per each progressive stage in order to address the increasing differential between water supply and demand.

A list of restrictions and prohibitions that are applicable to each stage is displayed in Table 5-3 (Cerritos, Ordinance No. 91-6, February 1991).

Table 5-3: Restrictions and Prohibitions on End Uses

Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other - Prohibit use of potable water for washing hard surfaces	Washing of walkways, driveways, or parking areas with a hose is prohibited.	Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Using water to clean, fill, or maintain levels in decorative fountains unless a recycled system is used is prohibited.	Yes
1	CII - Restaurants may only serve water upon request	-	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	-	Yes
1	Landscape - Limit landscape irrigation to specific times	Watering or irrigating of lawn, turf, or landscape areas is prohibited between the hours of 10:00 A.M. and 4:00 P.M.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	-	Yes
1	Other	Allowing a hose to run continuously while washing vehicles is prohibited.	Yes
1	Other	Allowing sprinklers to direct water to areas other than landscape causing runoff is prohibited.	Yes
NOTES: All Phase I restrictions are applicable during a Phase II Water Shortage Stage.			

## 5.5.2 Penalties

Any customer who violates provisions of the Water Conservation Ordinance by either excess use of water or by specific violation of one or more of the applicable water use restrictions for a particular mandatory conservation stage may be cited by the City where the severity is based on the number of violations committed by the user.

Violations for a Phase I Water Shortage Stage are listed below.

- A first violation will result in the City issuing a written notice of the improper water use to the customer.
- A second violation will result in a twenty-five dollar (\$25) penalty payable with the next subsequent water bill.
- Third and subsequent violations will result in the installation of a flow restricting device of one gallon per minute (gpm) capacity for services up to one and on-half inch size, and comparatively sized for larger services, on the service of the customer at the premises at which the violation occurred for a period of not less than forty-eight (48) hours. The customer in violation will be responsible for paying the costs associated with the installation of said flow restricting device and for the restoration of normal service.
- Failure to pay the penalties will result in discontinuation of water service until all previous penalties are paid in full. A reactivation fee will also be imposed.

Violation of any of the restrictions during a Phase II Water Shortage Stage will result in the installation of a flow restricting device for a period of three months (Cerritos, Ordinance No. 91-6, February 1991).

## 5.5.3 Consumption Reduction Methods

Table 5-4 lists the consumption reduction methods that will be used to reduce water use in restrictive stages.

Table 5-4: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods

Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
2	Other	Bimonthly, each 5/8" x 3/4" or 1" water meter shall be billed at base consumption of 30 units, under the current water rate structure. All billing units used over the base consumption will be billed at one and one half times the quantity rate in existence in the current rate structure.
2	Other	Bimonthly, each 1-1/2" water meter shall be billed at a base consumption of 119 units under the current water rate structure.
2	Other	Bimonthly, each 2" water meter shall be billed at a base consumption of 277 units under the current water rate structure.
2	Other	Bimonthly, each 3" water meter shall be billed at a base consumption of 511 units under the current water rate structure.
2	Other	Bimonthly, each 4" water meter shall be billed at a base consumption of 1080 units under the current water rate structure.
NOTES:		

## 5.6 Impacts to Revenue

During a catastrophic interruption of water supplies, prolonged drought, or water shortage of any kind, the City will experience a reduction in revenue due to reduced water sales. Throughout this period of time, expenditures may increase or decrease with varying circumstances. Expenditures may increase in the event of significant damage to the water system, resulting in emergency repairs. Expenditures may also decrease as less water is pumped through the system, resulting in lower power costs.

The City receives water revenue from a service charge and a commodity charge based on consumption. The service charge recovers costs associated with providing water to the serviced property. The service charge does not vary with consumption and the commodity charge is based on water usage. Rates have been designed to recover the full cost of water service in the charges. Therefore, the total cost of purchasing water would decrease as the usage or sale of water decreases.

However, there are significant fixed costs associated with maintaining a minimal level of service. The City will monitor projected revenues and expenditures should an extreme shortage and a large reduction in water sales occur for an extended period of time. To overcome these potential revenue losses and/or expenditure impacts, the City may use reserves. If necessary, the City may reduce expenditures by

delaying implementation of its Capital Improvement Program and equipment purchases, and/or adjust the work force, implement a drought surcharge, and/or make adjustments to its water rate structure.

## **5.7 Reduction Measuring Mechanism**

In normal water supply conditions, production figures are recorded daily and are incorporated into the water production report. During rationing conditions, water shortages will continue to be closely monitored on a daily or hourly basis depending on the severity of the drought. Production data from the Metropolitan connections and wells can be retrieved on an hourly basis. This will allow City staff to determine the effects of a reduction on water production within the system.

During a disaster shortage, production figures will be monitored on an ongoing basis. The City's SCADA system will warn of any critical conditions instantly. Once a shortage stage is implemented, actual reductions in water supply will be determined based on the SCADA system, which will allow monitoring on a daily basis. Reports will be provided on a daily basis to the City's Water Superintendent.

## 6 RECYCLED WATER

Recycled water opportunities have continued to grow in southern California as public acceptance and the need to expand local water resources continues to be a priority. Recycled water also provides a degree of flexibility and added reliability during drought conditions when imported water supplies are restricted.

Recycled water is wastewater that is treated through primary, secondary and tertiary processes and is acceptable for most non-potable water purposes such as irrigation, and commercial and industrial process water per Title 22 requirements.

### 6.1 Agency Coordination

The City purchases recycled water from LACSD's Los Coyotes Water Reclamation Plant (WRP) located at 16515 Piuma Avenue in Cerritos for non-potable purposes such as landscape irrigation. In 1988, the City constructed a 15,000 gpm pump station at the Los Coyotes WRP and a recycled water distribution system to directly provide recycled water to its customers. Although the City is actively engaged in recycled water planning, it does not currently have a recycled water master plan. The City purchases recycled water directly from LACSD's Los Coyotes WRP and pumps it directly into the City's distribution system; a portion of this recycled water is pumped into CBMWD's recycled water distribution system as well.

### 6.2 Wastewater Description and Disposal

The City's sewer system includes 110 miles of sewer lines ranging from 8 to 15 inches diameter. The City's wastewater is conveyed through a gravity system to the Long Beach WRP where it is treated, recycled, and/or disposed.

Treatment at the Long Beach WRP includes primary, secondary, and tertiary treatment for wastewater up to 25 million gallons per day (MGD). Primary treatment removes heavier solid particles that settle and lighter materials that float from the wastewater. These solids are known as primary sludge and are removed and conveyed to LACSD's Joint Water Pollution Control Plant (JWPCP). Secondary treatment removes dissolved and suspended organic materials with naturally occurring microorganisms that feed on dissolved organic materials and settle so they are separated from the water. Finally, tertiary treatment consists of filtration and disinfection to remove remaining suspended material and harmful bacteria and viruses. Wastewater that is not reclaimed at the Long Beach WRP and by-products of treatment are conveyed to the JWPCP. The JWPCP provides advanced primary and partial secondary treatment for 400 MGD of wastewater. Following treatment the water is discharged through a network of outfalls extending two miles off the Palos Verdes Peninsula at a depth of approximately 200 feet.

Table 6-1 summarizes the wastewater collected by the City and transported to LACSD's system in 2015. No wastewater is treated or disposed in the City's service area as LACSD treats and disposes all of the City's wastewater.

2015 URBAN WATER MANAGEMENT PLAN

Table 6-1: Wastewater Collected Within Service Area in 2015

<b>Retail: Wastewater Collected Within Service Area in 2015</b>					
<b>Wastewater Collection</b>			<b>Recipient of Collected Wastewater</b>		
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?
City of Cerritos	Estimated	5,499	LACSD	Long Beach WRP	No
<b>Total Wastewater Collected from Service Area in 2015:</b>		5,499			
NOTES:					

### 6.3 Current Recycled Water Uses

The source of the City's recycled water comes from LACSD's Los Coyotes WRP. The Los Coyotes WRP is located in Cerritos serving a population of 370,000 people. The WRP has a wastewater treatment capacity of 37.5 MGD and produces approximately 5 MGD of recycled water that is used at over 270 sites throughout the region. The recycled water provides irrigation for schools, golf courses, parks, nurseries and greenbelts as well as industrial use at local companies for carpet dying and concrete mixing.

The recycled water produced at the Los Coyotes WRP's undergoes tertiary treatment and denitrification. Tertiary treatment provides additional treatment to secondary effluent with coagulation, filtration and disinfection. Tertiary treated water can be used for a wide variety of industrial and irrigation purposes where high-quality, non-potable water can be used.

The City's recycled water distribution system consists of 25 miles of pipelines that provide water to customers within the service area and have two connections with the City of Lakewood's recycled water system. The City has approximately 256 connections to their recycled water system. The first City site to be irrigated with recycled water is the Iron-Wood Nine Golf Course in 1978. Currently the City irrigates more than 200 acres of City-owned property including most parks, parkways, and medians with recycled water. Recycled water is also used to irrigate schools, a community college, a county park, a cemetery, freeway landscaping, and privately owned landscaped areas like the Cerritos Towne Center and commercial nurseries.

Table 6-2 shows the current and projected recycled water use through 2040. The recycled water use is expected to increase slightly in 2020 and remain constant through 2040. The projected 2015 recycled water use from the City's 2010 UWMP was compared to the 2015 actual recycled water use as shown in Table 6-3. The actual recycled water use in 2015 is slightly higher than that projected in 2010.

2015 URBAN WATER MANAGEMENT PLAN

Table 6-2: Current and Projected Recycled Water Direct Beneficial Use within Service Area

Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area								
Name of Agency Producing (Treating) the Recycled Water:		LACSD						
Name of Agency Operating the Recycled Water Distribution System:		Cerritos						
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015	2020	2025	2030	2035	2040
Agricultural irrigation								
Landscape irrigation	Schools, Colleges, Parks, Cemetery, freeway landscaping, privately owned landscaped areas, and nurseries	Tertiary	2,048	2,200	2,200	2,200	2,200	2,200
Golf course irrigation								
Commercial use		Tertiary	287	305	305	305	305	305
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other (Provide General Description)								
		<b>Total:</b>	2,335	2,505	2,505	2,505	2,505	2,505
*IPR - Indirect Potable Reuse								
NOTES: Golf course irrigation is included in the landscape irrigation value. Separate data was not available.								

Table 6-3: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual		
Use Type	2010 Projection for 2015	2015 Actual Use
Agricultural irrigation		
Landscape irrigation (excludes golf courses)	2,050	2,048
Golf course irrigation		
Commercial use		287
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Surface water augmentation (IPR)		
Direct potable reuse		
Other	<i>Type of Use</i>	
<b>Total</b>	<b>2,050</b>	<b>2,335</b>
NOTES:		

## 6.4 Potential Recycled Water Uses

Potential recycled water users are locations where recycled water could replace potable water use. Recycled water demands may increase slightly with the recycled water line installation from the City to Forest Lawn Memorial Park. This recycled water line would extend through the Cities of Lakewood and Cypress. Miscellaneous recycled water conversions are also expected over the next five years (Cerritos, Review of CIP for FY 2015-2016, June 2015).

### 6.4.1 Direct Non-Potable Reuse

The City currently uses recycled water from LACSD’s Los Coyotes WRP for direct non-potable reuse such as landscape irrigation.

### 6.4.2 Indirect Potable Reuse

#### Carson Advanced Water Treatment Plant

With changing conditions in the CRA and SWP supplies, imported water has continued to be restricted. To maintain a sustainable water supply for Los Angeles and surrounding communities, Metropolitan is determining the feasibility of advanced water treatment of wastewater to be used for groundwater recharge in order to offset a portion of Metropolitan’s imported water demand. Metropolitan has partnered with LACSD since 2010 to determine the potential demands, technical and regulatory constraints of indirect potable reuse (IPR), and to estimate costs associated with the system (Metropolitan Board of Directions Special Committee on Desalination and Recycling, March 2010). LACSD’s “Status Report on

Recycled Water from 2010-2011” presented the advanced water treatment concept as a 200 MGD (224,110 AFY) facility but has since been revised. Pilot scale testing of treatment systems for the demonstration facility were underway in 2010 with a \$33,000 grant from the United States Bureau of Reclamation at LACSD’s JWPCP in the City of Carson. Figure 6-1 shows the JWPCP existing site outlined in yellow, the demonstration facility site, and the proposed location of a full scale plant outlined in red.



Figure 6-1: LACSD JWPCP and Potential Plant Site

On September 21, 2015, Metropolitan representatives presented the “Potential Regional Recycled Water Supply Program” to the Board’s Water Planning and Stewardship Committee. The presentation detailed the potential to develop a water supply to recharge groundwater basins and increase the regions water supply portfolio with IPR similar to the Orange County Water District’s Groundwater Replenishment System. The program would involve a multi-phased approach with an initial 1 MGD demonstration plant, feasibility studies for full scale facilities, and a financing plan followed by several incremental phases of full scale facilities up to 150 MGD. The full scale facility would produce up to 150 MGD of advanced treated water that would be injected into groundwater basins throughout the Los Angeles region, as shown on Figure 6-2.

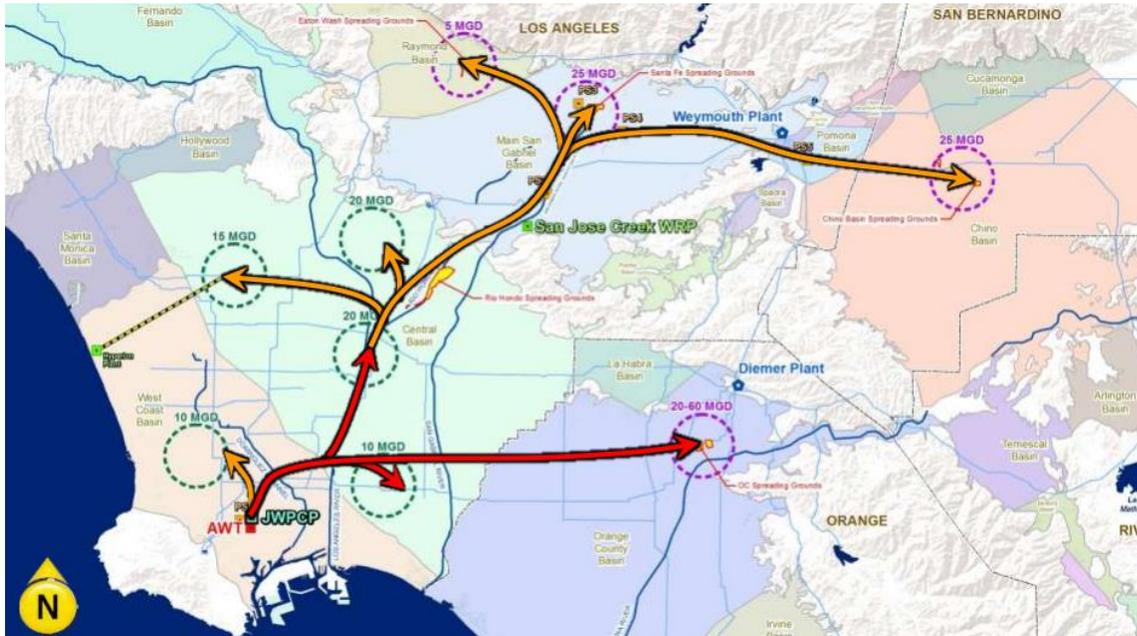


Figure 6-2: Potential Full Scale Recycled Water Program

## 6.5 Optimization Plan

The City has prepared and adopted a recycled water ordinance, Ordinance No. 621. The City is committed to encouraging recycled water use by providing financial incentives. Financial incentives include selling recycled water at a rate lower than potable water and setting aside funds within the budget each year to assist customers in converting their potable water connection to a recycled water system connection.

The City's recycled water system has been in operation since 1978 and there is little opportunity for the system to expand and for new users to connect to the system. Although the City will continue to encourage recycled water use within its service area, the City does not anticipate an increase in recycled water demands. With the recycled water system essentially built-out, the City does not have an optimization plan. However, the City recognizes the importance of optimizing recycled water within the region. As implementation of recycled water projects involves a substantial upfront capital investment for planning studies, environmental impact reports, engineering design, and construction, the City supports the establishment of funding sources for these types of projects. Funding sources through federal, state and regional programs currently provide significant financial incentives for local agencies to develop and make use of recycled water. The City will continue to support seeking funding for regional water recycling projects and programs.

## 7 FUTURE WATER SUPPLY PROJECTS AND PROGRAMS

### 7.1 Water Management Tools

Resource optimization such as desalination and IPR minimize the City's and region's reliance on imported water. Optimization efforts are typically led by regional agencies in collaboration with local/retail agencies.

### 7.2 Transfer or Exchange Opportunities

Interconnections with other agencies result in the ability to share water supplies during short term emergency situations or planned shutdowns of major imported systems. The City maintains one imported water connection with Metropolitan's system and seven emergency interconnections with neighboring agencies including the Cities of Lakewood, La Palma, Santa Fe Springs, and Norwalk, and private water companies including GSWC, Suburban Water Systems, and Liberty Utilities. Currently, there are no additional transfer or exchange opportunities.

### 7.3 Planned Water Supply Projects and Programs

The projects identified to improve the City's water supply reliability and quality from the City's FY 2015-16 CIP include:

**Groundwater Remediation Lincoln Station** – provides the City's contribution to a groundwater contamination remediation system at Lincoln Station.

**Groundwater Remediation Civic Center** – installation of a filtration system to remove trace levels of arsenic from the groundwater pumped at the Civic Center parking structure. Expected to be operational at the end of 2016.

**C-5 Water Well** – design and construction of a pump house and all associated water lines to bring the C-5 water well into production potentially reducing imported water demands by up to 2,200 gpm if additional groundwater rights can be leased. Expected completion by the end of 2019.

Future recycled water expansions and projects are described in Section 6.4.

### 7.4 Desalination Opportunities

Seawater desalination represents a significant opportunity to diversify the region's water resources with a new, local water supply. The constant availability of ocean water regardless of weather or climate is a key benefit to seawater desalination. Metropolitan supports seawater desalination to its member agencies by providing technical assistance, regional facilitation of research and information exchanges, and financial incentives through the Local Resources Program (LRP).

Metropolitan and its member agencies have considered seawater desalination since the 1960's, but it has been too expensive compared to other water sources until the 1990's when advances were made in membrane technology, energy recovery, and process design. In the early 2000's, several member agencies began pursuing local projects to diversify their resource portfolios and in 2001, Metropolitan

created an incentive program, known as the Seawater Desalination Program (SDP), to support seawater desalination projects. In December 2015, San Diego County Water Authority (SDCWA) began operating of the largest desalination facility in the country. The 56,000 AF Carlsbad project will meet approximately eight percent of San Diego County's water demand and be a reliable, drought-resistant water source. Several other local water agencies are considering seawater desalination projects.

In 2014, Metropolitan modified the provisions of the LRP to include incentives for locally produced seawater desalination projects that reduce the need for imported supplies. To qualify for the incentive, proposed projects must replace an existing demand or prevent new demand on Metropolitan's imported water supplies. In return, Metropolitan offers two incentive formulas under the program:

- Up to \$340 per AF for 25 years, depending on the unit cost of the seawater project cost compared to the cost of Metropolitan supplies
- Up to \$475 per AF for 15 years, depending on the unit cost of the seawater project cost compared to the cost of Metropolitan supplies

Brackish groundwater is groundwater with a salinity higher than freshwater, but lower than seawater. Brackish groundwater typically requires treatment using desalters.

### **7.4.1 Groundwater**

There are currently no brackish groundwater opportunities within the City's service area.

### **7.4.2 Ocean Water**

Numerous seawater desalination projects exist that would reduce the region's reliance on imported water. Although none of the projects immediately serve the City's service area, they benefit the region as a whole. A summary of the status of the SDP projects is provided in Metropolitan's 2015 UWMP as shown on Figure 7-1 that could ultimately provide up to 142,000 AFY of new supply. Other local agencies are also considering seawater desalination projects independent of Metropolitan's SDP that are provided in Metropolitan's 2015 UWMP as shown on Figure 7-2 that could ultimately provide up to 360,000 AFY of new supply.

Project	Member Agency Service Area	Capacity Range AF per Year	Status	SDP Agreement
Long Beach Seawater Desalination Project	Long Beach Water Department	10,000	Long-term intake testing	Yes
Doheny Desalination Project	Municipal Water District of Orange County/ South Coast Water District	5,000 – 16,000	Pre-EIR Studies	Yes
Carlsbad Seawater Desalination Project	San Diego County Water Authority	56,000	Operational	No
West Basin Seawater Desalination Project	West Basin Municipal Water District	20,000 – 60,000	Pre-EIR Studies	Yes
<b>Total: Seawater Desalination Projects</b>		<b>91,000 – 142,000</b>		

Figure 7-1: SDP Projects in Metropolitan’s Service Area

Project	Member Agency Service Area	AF per Year	Status
Huntington Beach Seawater Desalination Project	Municipal Water District of Orange County / Orange County Water District	56,000	Permitting
Camp Pendleton Seawater Desalination Project	San Diego County Water Authority	56,000 to 168,000	Planning
Ventura County	Calleguas Municipal Water District	20,000 to 80,000	Feasibility Study
Rosarito Beach	San Diego County Water Authority, Otay Water District	56,000 to 112,000 <sup>1</sup>	Feasibility study
<b>Total: Other Potential Projects</b>		<b>160,000 – 360,000</b>	

<sup>1</sup> Metropolitan’s service area would receive a share of the total supply produced by the project.

Figure 7-2: Other Local Seawater Desalination Projects in Metropolitan’s Service Area

## 8 UWMP ADOPTION PROCESS

Recognizing that close coordination among other relevant public agencies is key to the success of its UWMP, the City worked closely with entities such as CBMWD to develop and update this planning document. The City also encouraged public involvement by holding a public hearing for residents to learn and ask questions about their water supply.

This section provides the information required in Article 3 of the Water Code related to adoption and implementation of the UWMP. Table 8-1 summarizes external coordination and outreach activities carried out by the City and their corresponding dates. The UWMP checklist to confirm compliance with the Water Code is provided in Appendix A.

**Table 8-1: External Coordination and Outreach**

External Coordination and Outreach	Date	Reference
Encouraged public involvement (Public Hearing)	5/12/16, 5/19/16, & 5/20/16	Appendix E
Notified city or county within supplier's service area that water supplier is preparing an updated UWMP (at least 60 days prior to public hearing)	3/10/16	Appendix E
Held public hearing	5/26/16	Appendix E
Adopted UWMP	5/26/16	Appendix F
Submitted UWMP to DWR	7/1/16	-
Submitted UWMP to the California State Library and city or county within the supplier's service area	8/1/16	-
Made UWMP available for public review	8/1/16	-

This UWMP was adopted by the City Council on May 26, 2016. A copy of the adopted resolution is provided in Appendix F.

A change from the 2004 legislative session to the 2009 legislative session required the City to notify any city or county within its service area at least 60 days prior to the public hearing. As shown in Table 8-2, the City sent a Letter of Notification to the County of Los Angeles, the City of Norwalk, and the City of Lakewood on March 10, 2016 to state that it was in the process of preparing an updated UWMP (Appendix E).

Table 8-2: Notification to Cities and Counties

Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
City of Lakewood	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Norwalk	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
County Name	60 Day Notice	Notice of Public Hearing
Los Angeles County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
NOTES:		

## 8.1 Public Participation

The City encourages community participation in developing its urban water management planning efforts. For UWMP update, a public meeting was held on May 16, 2016 to review and receive comments on the draft plan before the City Council approval.

Notices of public meetings were published in the local newspaper and posted at City facilities. The Long Beach Press-Telegram published a notice on May 12 and 19, 2015 and the Los Cerritos Community News published a notice on May 20, 2016. Copies of the draft plan were available on the City website. A copy of the published Notice of Public Hearing is included in Appendix E.

## 8.2 Agency Coordination

The City's water supply planning relates to the policies, rules, and regulations of its regional and local water providers. The City is dependent on imported water from Metropolitan through CBMWD, its regional wholesaler. As such, the City involved the listed water providers in the development of its 2015 UWMP at various levels of contribution.

### 8.2.1 Review of 2010 UWMP Implementation

As required by California Water Code, the City summarized Water Conservation Programs implemented to date, and compared them to those planned in its 2010 UWMP.

## 8.2.2 Comparison of 2010 Planned Water Conservation Programs with 2015 Actual Programs

As a signatory to the MOU regarding urban water use efficiency, the City's commitment to implement BMP-based water use efficiency program continues today. For the City's specific achievements in the area of conservation, please see Section 4 of this Plan.

## 8.2.3 Comparison of 2010 Projected Recycled Water Use with 2015 Actual Use

Current recycled water use for the City in 2015 was about 7 percent less than previously forecasted for 2015 in the 2010 UWMP, as illustrated in Table 6-4.

## 8.2.4 Filing of 2015 UWMP

The City Council reviewed the Final Draft Plan on May 26, 2016. The five-member City Council approved the 2015 UWMP on May 26, 2016. See Appendix F for the resolution approving the Plan.

By July 1, 2016, the City's Adopted 2015 UWMP was filed with DWR. By August 1, 2016, the City's Adopted 2015 UWMP was filed California State Library, County of Los Angeles, and cities within its service area, if applicable.

## 8.3 UWMP Amendment Process

### 8.3.1 Resubmitting UWMP

As requested by DWR, the City resubmitted their 2015 UWMP to address certain sections of the California Water Code that were not covered by the original plan. After making edits to the UWMP, the City went through the adoption process once more. Table 8-3 presents a summary of the steps taken by the City in adopting the amended UWMP.

Table 8-3: External Coordination and Outreach for Resubmitting UWMP

External Coordination and Outreach	Date	Reference
Public notification	6/1/18 and 6/8/18	Appendix E-1
Held public hearing	6/14/18	Appendix E-1
Adopted UWMP	6/14/18	Appendix F-1
Submitted UWMP to DWR	6/30/18	-
Submitted UWMP to the California State Library and city or county within the supplier's service area	6/30/18	-
Made UWMP available for public review	7/30/18	-

Again, the opportunity was presented to the public for comments and questions concerning the UWMP. The City published a public hearing notification in the local newspaper for the amended UWMP which can be viewed in Appendix E-1. After the public hearing, the City Council reviewed and approved the Amended UWMP on June 14, 2018. Appendix F-1 includes the resolution approving the Amended UWMP. By June 30, 2018, the City's Amended UWMP will be resubmitted to DWR, California State Library, and County of Los Angeles. The Amended UWMP will be available for public review no later than 30 days after filing with DWR.

## REFERENCES

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- Metropolitan Water District of Southern California, 2010. Metropolitan Board of Directors Special Committee on Desalination and Recycling.
- Metropolitan Water District of Southern California, 2016. Integrated Water Resources Plan 2015.
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- Water Replenishment District, 2010. Regional Groundwater Monitoring Report.
- Water Replenishment District, 2015. Engineering Survey and Report.
- Water Replenishment District, 2015. Groundwater Basins Master Plan Draft.
- Water Systems Optimization, 2016. California Department of Water Resources: Water Audit Manual.

# APPENDIX A

## UWMP Checklist



# UWMP Checklist

This checklist is developed directly from the Urban Water Management Planning Act and SB X7-7. It is provided to support water suppliers during preparation of their UWMPs. Two versions of the UWMP Checklist are provided – the first one is organized according to the California Water Code and the second checklist according to subject matter. The two checklists contain duplicate information and the water supplier should use whichever checklist is more convenient. In the event that information or recommendations in these tables are inconsistent with, conflict with, or omit the requirements of the Act or applicable laws, the Act or other laws shall prevail.

Each water supplier submitting an UWMP can also provide DWR with the UWMP location of the required element by completing the last column of either checklist. This will support DWR in its review of these UWMPs. The completed form can be included with the UWMP.

If an item does not pertain to a water supplier, then state the UWMP requirement and note that it does not apply to the agency. For example, if a water supplier does not use groundwater as a water supply source, then there should be a statement in the UWMP that groundwater is not a water supply source.

## Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location <i>(Optional Column for Agency Use)</i>
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	<b>Section 1.1</b>
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	<b>Section 8.2</b>
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	<b>Section 8.1</b>
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	<b>Section 1.3.1</b>
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	<b>Section 2.2.1</b>
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	<b>Section 2.2.2</b>
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	<b>Section 2.2.2</b>
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	<b>Section 2.2.2</b>
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	<b>Section 2.3.1 and 2.4.1</b>
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	<b>Section 2.3.4 and Appendix G</b>
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	<b>Section 2.4.3</b>
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	<b>Section 2.5.2</b>
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	<b>Section 2.5.2.2</b>

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			
<b>10608.22</b>	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	<b>Section 2.5.2.2</b>
<b>10608.24(a)</b>	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	<b>Section 2.5.2.2</b>
<b>10608.24(d)(2)</b>	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	<b>Section 2.5.2.2</b>
<b>10608.36</b>	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	<b>N/A</b>
<b>10608.40</b>	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	<b>Section 2.5.2.2</b>
<b>10631(b)</b>	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	<b>Section 3.5</b>
<b>10631(b)</b>	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	<b>Section 3.4</b>
<b>10631(b)(1)</b>	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	<b>Section 3.4</b>
<b>10631(b)(2)</b>	Describe the groundwater basin.	System Supplies	Section 6.2.1	<b>Section 3.4.1</b>
<b>10631(b)(2)</b>	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	<b>Section 3.4</b>
<b>10631(b)(2)</b>	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	<b>Section 3.4</b>
<b>10631(b)(3)</b>	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	<b>Section 3.4.3</b>

	groundwater pumped by the urban water supplier for the past five years			
<b>10631(b)(4)</b>	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	<b>Section 3.4 and 3.5</b>
<b>10631(d)</b>	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	<b>Section 7.2</b>
<b>10631(g)</b>	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	<b>Section 7</b>
<b>10631(h)</b>	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	<b>Section 7.4</b>
<b>10631(j)</b>	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	<b>Section 3.5 &amp; Table 1-4</b>
<b>10631(j)</b>	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	<b>N/A</b>
<b>10633</b>	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	<b>Section 6.1</b>
<b>10633(a)</b>	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	<b>Section 6.2</b>
<b>10633(b)</b>	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	<b>Section 6.2</b>
<b>10633(c)</b>	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	<b>Section 6.3</b>
<b>10633(d)</b>	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	<b>Section 6.4</b>
<b>10633(e)</b>	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in	System Supplies (Recycled Water)	Section 6.5.4	<b>Section 6.3 and 6.4</b>

	comparison to uses previously projected.			
<b>10633(f)</b>	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	<b>Section 6.4</b>
<b>10633(g)</b>	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	<b>Section 6.5</b>
<b>10620(f)</b>	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	<b>Section 7.1</b>
<b>10631(c)(1)</b>	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	<b>Section 3.7</b>
<b>10631(c)(1)</b>	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	<b>Section 3.7.6</b>
<b>10631(c)(2)</b>	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	<b>Section 3.7</b>
<b>10634</b>	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	<b>Section 3.7.3.3</b>
<b>10635(a)</b>	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	<b>Section 3.8</b>
<b>10632(a) and 10632(a)(1)</b>	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	<b>Section 5.2</b>
<b>10632(a)(2)</b>	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	<b>Section 5.3</b>
<b>10632(a)(3)</b>	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	<b>Section 5.4</b>
<b>10632(a)(4)</b>	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	<b>Section 5.5.1</b>
<b>10632(a)(5)</b>	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	<b>Section 5.5.3</b>
<b>10632(a)(6)</b>	Indicated penalties or charges for excessive	Water Shortage Contingency	Section 8.3	<b>Section</b>

	use, where applicable.	Planning		<b>5.5.2</b>
<b>10632(a)(7)</b>	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	<b>Section 5.6</b>
<b>10632(a)(8)</b>	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	<b>Appendix D</b>
<b>10632(a)(9)</b>	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	<b>Section 5.7</b>
<b>10631(f)(1)</b>	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	<b>Section 4</b>
<b>10631(f)(2)</b>	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	<b>N/A</b>
<b>10631(i)</b>	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	<b>Section 4</b>
<b>10608.26(a)</b>	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	<b>Section 8.1</b>
<b>10621(b)</b>	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	<b>Appendix E</b>
<b>10621(d)</b>	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	<b>Section 8.2.4</b>
<b>10635(b)</b>	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	<b>Section 8.2.4</b>
<b>10642</b>	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	<b>Section 8.1</b>

	public hearing, and held a public hearing about the plan.			
<b>10642</b>	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	<b>Appendix E</b>
<b>10642</b>	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	<b>Appendix F</b>
<b>10644(a)</b>	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	<b>Section 8.2.4</b>
<b>10644(a)(1)</b>	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	<b>Section 8.2.4</b>
<b>10644(a)(2)</b>	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	<b>Section 8.2.4</b>
<b>10645</b>	<b>Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.</b>	<b>Plan Adoption, Submittal, and Implementation</b>	<b>Section 10.5</b>	<b>Section 8</b>

# APPENDIX B

## Standardized Tables



**Table 2-1 Retail Only: Public Water Systems**

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
CA1910019	City of Cerritos	15,333	8,460
<b>TOTAL</b>		<b>15,333</b>	<b>8,460</b>
NOTES:			

**Table 2-2: Plan Identification**

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance <i>if applicable</i> <i>drop down list</i>
<input checked="" type="checkbox"/>	<b>Individual UWMP</b>		
	<input type="checkbox"/>	Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/>	Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	<b>Regional Urban Water Management Plan (RUWMP)</b>		

NOTES:

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
<input type="checkbox"/>	Agency is a wholesaler
<input checked="" type="checkbox"/>	Agency is a retailer
Fiscal or Calendar Year (select one)	
<input type="checkbox"/>	UWMP Tables Are in Calendar Years
<input checked="" type="checkbox"/>	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
7/1	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

<b>Table 2-4 Retail: Water Supplier Information Exchange</b>
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
CBMWD
NOTES:

**Table 3-1 Retail: Population - Current and Projected**

Population Served	2015	2020	2025	2030	2035	2040
	49,091	49,582	50,078	50,579	51,084	51,595

NOTES: From DWR population tool and Cerritos supplied service boundary assuming a population increase of 5.1 percent by 2040.

**Table 4-1 Retail: Demands for Potable and Raw Water - Actual**

Use Type <i>(Add additional rows as needed)</i>	2015 Actual		
<i>Use Drop down list</i> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description <i>(as needed)</i>	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Single Family		Drinking Water	4,734
Multi-Family		Drinking Water	554
Commercial	Commercial/Institutional	Drinking Water	1,853
Landscape		Drinking Water	522
Agricultural irrigation		Drinking Water	4
Sales/Transfers/Exchanges to other agencies	GSWC	Drinking Water	6
Sales/Transfers/Exchanges to other agencies	Norwalk	Drinking Water	787
<b>TOTAL</b>			<b>8,460</b>
NOTES: From Cerritos 2015 Water Usage Report			

**Table 4-2 Retail: Demands for Potable and Raw Water - Projected**

Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>				
<i>Use Drop down list</i> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the</i> <i>WUdata online submittal tool</i>		2020	2025	2030	2035	2040
Single Family		5,246	5,268	5,290	5,312	5,334
Multi-Family		613	616	619	621	624
Commercial	Commercial/Institutional	2,053	2,061	2,070	2,079	2,087
Landscape		579	581	584	586	588
Agricultural irrigation		5	5	5	5	5
Sales/Transfers/Exchanges to other agencies	Norwalk	820	820	820	820	820
Sales/Transfers/Exchanges to other agencies	GSWC	10	10	10	10	10
<b>TOTAL</b>		9,326	9,361	9,397	9,433	9,469
NOTES:						

**Table 4-3 Retail: Total Water Demands**

	2015	2020	2025	2030	2035	2040
Potable and Raw Water <i>From Tables 4-1 and 4-2</i>	8,460	9,326	9,361	9,397	9,433	9,469
Recycled Water Demand* <i>From Table 6-4</i>	2,335	2,505	2,505	2,505	2,505	2,505
<b>TOTAL WATER DEMAND</b>	10,795	11,831	11,866	11,902	11,938	11,974

NOTES:

**Table 4-4 Retail: 12 Month Water Loss Audit Reporting**

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
07/2014	95.6
NOTES:	

**Table 4-5 Retail Only: Inclusion in Water Use Projections**

Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i>	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.	Section 4.1
Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i>	Yes

NOTES:

**Table 5-1 Baselines and Targets Summary***Retail Agency or Regional Alliance Only*

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	1997	2010	164	153	142
5 Year	2004	2008	161		

\*All values are in Gallons per Capita per Day (GPCD)

NOTES:

**Table 5-2: 2015 Compliance**  
*Retail Agency or Regional Alliance Only*

Actual 2015 GPCD*	2015 Interim Target GPCD*	2015 GPCD* <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015? Y/N
139	153	139	Yes
<i>*All values are in Gallons per Capita per Day (GPCD)</i>			
NOTES:			

**Table 6-1 Retail: Groundwater Volume Pumped**

Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	Central Groundwater Basin	8,648	8,873	9,074	9,254	7,809
<b>TOTAL</b>		8,648	8,873	9,074	9,254	7,809

NOTES:

**Table 6-2 Retail: Wastewater Collected Within Service Area in 2015**

Wastewater Collection			Recipient of Collected Wastewater		
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>
City of Cerritos	Estimated	5,499	LACSD	Long Beach WRP	No
<b>Total Wastewater Collected from Service Area in 2015:</b>		5,499			

NOTES:

**Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015**



No wastewater is treated or disposed of within the UWMP service area.  
The supplier will not complete the table below.

**Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area**

Name of Agency Producing (Treating) the Recycled Water:		LACSD						
Name of Agency Operating the Recycled Water Distribution System:		Cerritos						
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035	2040
Agricultural irrigation								
Landscape irrigation	Schools, Colleges, Parks, Cemetery, freeway landscaping, privately owned landscaped areas, and nurseries	Tertiary	2,048	2,200	2,200	2,200	2,200	2,200
Golf course irrigation								
Commercial use		Tertiary	287	305	305	305	305	305
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other ( <i>Provide General Description</i> )								
<b>Total:</b>			2,335	2,505	2,505	2,505	2,505	2,505

\*IPR - Indirect Potable Reuse

NOTES: Golf course irrigation is included in the landscape irrigation value. Separate data was not available.

<b>Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual</b>		
<b>Use Type</b>	<b>2010 Projection for 2015</b>	<b>2015 Actual Use</b>
Agricultural irrigation		
Landscape irrigation (excludes golf courses)	2,050	2,048
Golf course irrigation		
Commercial use		287
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Surface water augmentation (IPR)		
Direct potable reuse		
Other	<i>Type of Use</i>	
<b>Total</b>	2,050	2,335
NOTES:		

**Table 6-6 Retail: Methods to Expand Future Recycled Water Use**

<input type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.
Section 6.4	Provide page location of narrative in UWMP

**Table 6-7 Retail: Expected Future Water Supply Projects or Programs**

<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
<input checked="" type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
Section 7.3	Provide page location of narrative in the UWMP

**Table 6-8 Retail: Water Supplies — Actual**

Table 6-8 Retail: Water Supplies — Actual			
Water Supply	Additional Detail on Water Supply	2015	
<i>Drop down list</i> <i>May use each category multiple times.</i> <i>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Actual Volume	Water Quality <i>Drop Down List</i>
Groundwater	Central Groundwater Basin	7,809	Drinking Water
Purchased or Imported Water	CBMWD	651	Drinking Water
Recycled Water	LACSD	2,335	Recycled Water
<b>Total</b>		10,795	
NOTES:			

**Table 6-9 Retail: Water Supplies — Projected**

Water Supply	Additional Detail on Water Supply	Projected Water Supply <i>Report To the Extent Practicable</i>				
<i>Drop down list</i> May use each category multiple times. These are the only water supply categories that will be recognized by the WUdata online submittal tool		2020	2025	2030	2035	2040
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Groundwater	Central Groundwater Basin	8,680	8,680	8,680	8,680	8,680
Purchased or Imported Water	CBMWD	646	681	717	753	789
Recycled Water	LACSD	2,505	2,505	2,505	2,505	2,505
<b>Total</b>		11,831	11,866	11,902	11,938	11,974
NOTES:						

**Table 7-1 Retail: Basis of Water Year Data**

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	1922-2004		100%
Single-Dry Year	1977		103%
Multiple-Dry Years 1st Year	1990		105%
Multiple-Dry Years 2nd Year	1991		105%
Multiple-Dry Years 3rd Year	1992		105%

NOTES:

**Table 7-2 Retail: Normal Year Supply and Demand Comparison**

	2020	2025	2030	2035	2040
Supply totals <i>(autofill from Table 6-9)</i>	11,831	11,866	11,902	11,938	11,974
Demand totals <i>(autofill from Table 4-3)</i>	11,831	11,866	11,902	11,938	11,974
Difference	0	0	0	0	0
NOTES:					

**Table 7-3 Retail: Single Dry Year Supply and Demand Comparison**

	2020	2025	2030	2035	2040
Supply totals	12,185	12,222	12,259	12,296	12,333
Demand totals	12,185	12,222	12,259	12,296	12,333
Difference	0	0	0	0	0
NOTES:					

**Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison**

		2020	2025	2030	2035	2040
First year	Supply totals	12,422	12,460	12,497	12,535	12,573
	Demand totals	12,422	12,460	12,497	12,535	12,573
	Difference	0	0	0	0	0
Second year	Supply totals	12,422	12,460	12,497	12,535	12,573
	Demand totals	12,422	12,460	12,497	12,535	12,573
	Difference	0	0	0	0	0
Third year	Supply totals	12,422	12,460	12,497	12,535	12,573
	Demand totals	12,422	12,460	12,497	12,535	12,573
	Difference	0	0	0	0	0

NOTES:

**Table 8-1 Retail  
Stages of Water Shortage Contingency Plan**

Stage	Complete Both	
	Percent Supply Reduction <sup>1</sup> <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
1	Up to 5%	The City Council will declare a Phase 1 water shortage based on the severity (mild) of the shortage emergency to accomplish the necessary water conservation.
2	Up to 10%	The City Council will declare a Phase 2 water shortage based on the severity (moderate) of the shortage emergency to accomplish the necessary water conservation.
3	Up to 50%	The City Council will declare a water shortage emergency when the severity of the water supply exceeds that of Stage 2.

<sup>1</sup> One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.

NOTES:

**Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses**

Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
1	Other - Prohibit use of potable water for washing hard surfaces	Washing of walkways, driveways, or parking areas with a hose is prohibited.	Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Using water to clean, fill, or maintain levels in decorative fountains unless a recycled system is used is prohibited.	Yes
1	CII - Restaurants may only serve water upon request	-	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	-	Yes
1	Landscape - Limit landscape irrigation to specific times	Watering or irrigating of lawn, turf, or landscape areas is prohibited between the hours of 10:00 A.M. and 4:00 P.M.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	-	Yes
1	Other	Allowing a hose to run continuously while washing vehicles is prohibited.	Yes
1	Other	Allowing sprinklers to direct water to areas other than landscape causing runoff is prohibited.	Yes

NOTES: All Phase I restrictions are applicable during a Phase II Water Shortage Stage.

**Table 8-3 Retail Only:  
Stages of Water Shortage Contingency Plan - Consumption Reduction Methods**

Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
2	Other	Bimonthly, each 5/8" x 3/4" or 1" water meter shall be billed at base consumption of 30 units, under the current water rate structure. All billing units used over the base consumption will be billed at one and one half times the quantity rate in existence in the current rate structure.
2	Other	Bimonthly, each 1-1/2" water meter shall be billed at a base consumption of 119 units under the current water rate structure.
2	Other	Bimonthly, each 2" water meter shall be billed at a base consumption of 277 units under the current water rate structure.
2	Other	Bimonthly, each 3" water meter shall be billed at a base consumption of 511 units under the current water rate structure.
2	Other	Bimonthly, each 4" water meter shall be billed at a base consumption of 1080 units under the current water rate structure.
NOTES:		

**Table 8-4 Retail: Minimum Supply Next Three Years**

	2016	2017	2018
Available Water Supply	12,450	12,450	12,450

NOTES:

**Table 10-1 Retail: Notification to Cities and Counties**

City Name	60 Day Notice	Notice of Public Hearing
City of Lakewood	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Norwalk	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
Los Angeles County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
NOTES:		

# APPENDIX C

## Groundwater Reports



A copy of the WRD Regional Groundwater  
Monitoring Report can be found at [http://  
www.wrd.org/engineering/  
reports/2014\\_RGWMR\\_Final%20\\_Web.pdf](http://www.wrd.org/engineering/reports/2014_RGWMR_Final%20_Web.pdf)

A copy of the WRD Engineering Survey and Report can be found at [http://www.wrd.org/WRD\\_ESR\\_Report\\_March\\_3\\_2016\\_Final\\_For\\_Web.pdf](http://www.wrd.org/WRD_ESR_Report_March_3_2016_Final_For_Web.pdf)

# APPENDIX D

City Resolution



**CITY OF CERRITOS**

**RESOLUTION NO. 2015-16**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CERRITOS  
IMPLEMENTING EMERGENCY WATER CONSERVATION REGULATIONS**

WHEREAS, On January 17, 2014, Governor Jerry Brown declared a state of emergency in California and called for a 20 percent reduction in water use due to the ongoing drought conditions throughout the state; and Governor Brown issued an executive order on April 25 calling on California residents to refrain from wasting water; and

WHEREAS, On May 5, 2015, the State Water Resources Control Board adopted revised emergency water conservation regulations in response to Governor Brown's executive order; and

WHEREAS, The adopted regulations require the City of Cerritos to reduce its water consumption by 28%; and

WHEREAS, the City of Cerritos City Council adopted an Emergency Water Conservation Ordinance in February 1991;

WHEREAS, said ordinance authorizes the City Council to declare the implementation of water conservation measures by resolution; and

WHEREAS, it is necessary to comply with the State of California Water Resources Control Board regulations.

NOW, THEREFORE, THE CITY OF CERRITOS CITY COUNCIL DOES FIND, DETERMINE AND DECLARE AS FOLLOWS:

**Section 1.** Except when necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency, the following actions are prohibited:

a. The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots or structures. Water runoff is defined as water accumulation sufficient to cause a flow of water off of landscaped areas; and

b. Use of potable water for irrigation during and 48 hours following measurable precipitation;

c. The use of a hose that dispenses potable water to wash a motor vehicle, except when the hose is equipped with a shut-off nozzle; and

d. The application of potable water to driveways and sidewalks; and

e. The use of potable water in a fountain or other decorative water feature, unless the water is part of a recirculating system.

**Section 2.** Residential and commercial landscape areas shall be watered between the hours of 5 p.m. and 9 a.m. for no more than ten (10) minutes per station. Watering shall be limited to two (2) times per week during the months of June through September, and one (1) time per week during the months of October through May. Landscape irrigation for commercial nurseries and growers, fire and erosion protection, the protection of endangered species, environmental mitigation projects, and properties using reclaimed water are exempt from this provision. Watering using a handheld container; a hose equipped with a shut off nozzle; or the use of an irrigation system for short durations to make repairs are also exempt from the provision; and

**Section 3.** Use of a drip irrigation system shall be subject to State mandated restrictions; and

**Section 4.** Violation of the regulations is an infraction punishable by a fine of up to five hundred dollars (\$500) per day; and

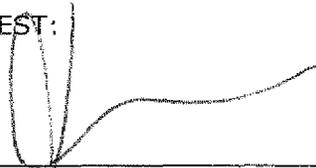
**Section 5.** The emergency regulations will remain in effect until the state mandated restrictions expire, at which time the City Council shall review the water supply conditions to determine the need for continued mandatory conservation measures.

**PASSED, APPROVED and ADOPTED this 11th day of June 2015.**



\_\_\_\_\_  
Carol K. Chen, Mayor

ATTEST:



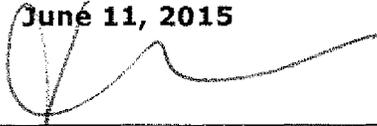
\_\_\_\_\_  
Vida Barone, City Clerk

STATE OF CALIFORNIA        )  
COUNTY OF LOS ANGELES    ) ss.  
CITY OF CERRITOS            )

I, Vida Barone, City Clerk of the City of Cerritos, California, DO HEREBY CERTIFY that the foregoing **Resolution No. 2015-16** was duly adopted by the City Council of the City of Cerritos at a Regular Meeting held on the **11<sup>th</sup> Day of June, 2015**, and that it was so adopted as follows:

AYES:            Councilmembers - **Chen, Edwards, Pulido, Ray, Solanki**  
NOES:            Councilmembers - None.  
ABSENT:          Councilmembers - None.  
ABSTAIN:         Councilmembers - None.

DATED: **June 11, 2015**



---

Vida Barone, City Clerk

# APPENDIX E

Notification of Public and Service Area Suppliers





# CITY OF CERRITOS<sup>SM</sup>

CIVIC CENTER • 18125 BLOOMFIELD AVENUE  
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

Mr. Jeff Moneda  
City of La Palma  
City Engineer  
7822 Walker Street  
La Palma California 90623

**RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear Mr. Moneda:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a sixty (60) day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing at a Cerritos City Council meeting on Thursday May 26, 2016 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (562) 916-1223 or our consultant preparing the plan, Manual Alvarez of Arcadis at (714) 508-2672.

Sincerely,

Charles Emig  
Water Superintendent

vk

CAROL K. CHEN  
MAYOR

GEORGE RAY  
MAYOR PRO TEM

JIM EDWARDS  
COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER



# CITY OF CERRITOS<sup>SM</sup>

CIVIC CENTER • 18125 BLOOMFIELD AVENUE  
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

District Manager, Central District  
Golden State Water Company  
12035 Burke Street, Suite I  
Santa Fe Springs, California 90670

## **RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear District Manager:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a sixty (60) day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing at a Cerritos City Council meeting on Thursday May 26, 2016 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (562) 916-1223 or our consultant preparing the plan, Manual Alvarez of Arcadis at (714) 508-2672.

Sincerely,

Charles Emig  
Water Superintendent

vk

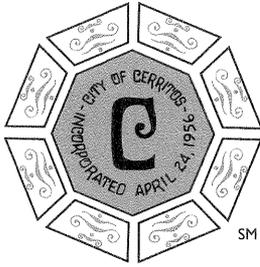
CAROL K. CHEN  
MAYOR

GEORGE RAY  
MAYOR PRO TEM

JIM EDWARDS  
COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER



# CITY OF CERRITOS<sup>SM</sup>

CIVIC CENTER • 18125 BLOOMFIELD AVENUE  
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

Mr. Earle C. Hartling  
County Sanitation Districts of Los Angeles County  
Technical Services Department  
1955 Workman Mill Road  
Whittier, California 90601

**RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear Mr. Hartling:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a sixty (60) day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing at a Cerritos City Council meeting on Thursday May 26, 2016 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (562) 916-1223 or our consultant preparing the plan, Manual Alvarez of Arcadis at (714) 508-2672.

Sincerely,

Charles Emig  
Water Superintendent

vk

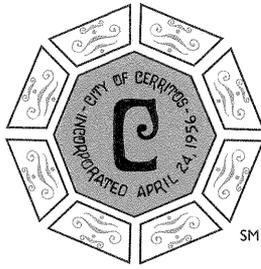
CAROL K. CHEN  
MAYOR

GEORGE RAY  
MAYOR PRO TEM

JIM EDWARDS  
COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER



# CITY OF CERRITOS<sup>SM</sup>

CIVIC CENTER • 18125 BLOOMFIELD AVENUE  
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

Clerk-Recorder  
County of Los Angeles  
12400 Imperial Highway  
Norwalk, California 90650

**RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear Clerk-Recorder:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a sixty (60) day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing at a Cerritos City Council meeting on Thursday May 26, 2016 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (562) 916-1223 or our consultant preparing the plan, Manual Alvarez of Arcadis at (714) 508-2672.

Sincerely,

Charles Emig  
Water Superintendent

vk

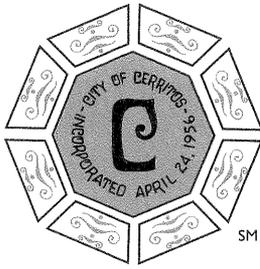
CAROL K. CHEN  
MAYOR

GEORGE RAY  
MAYOR PRO TEM

JIM EDWARDS  
COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER



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P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

Mr. Kevin Hunt  
Central Basin Municipal Water District  
6252 Telegraph Road  
Commerce, California 90040-2512

**RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear Mr. Hunt:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a sixty (60) day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing at a Cerritos City Council meeting on Thursday May 26, 2016 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (562) 916-1223 or our consultant preparing the plan, Manual Alvarez of Arcadis at (714) 508-2672.

Sincerely,

Charles Emig  
Water Superintendent

vk

CAROL K. CHEN  
MAYOR

GEORGE RAY  
MAYOR PRO TEM

JIM EDWARDS  
COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER



# CITY OF CERRITOS<sup>SM</sup>

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P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

Mr. Rob Whitaker  
Water Replenishment District of Southern California  
4040 Paramount Boulevard  
Lakewood, California 90712

## **RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear Mr. Whitaker:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a sixty (60) day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing at a Cerritos City Council meeting on Thursday May 26, 2016 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (562) 916-1223 or our consultant preparing the plan, Manual Alvarez of Arcadis at (714) 508-2672.

Sincerely,

Charles Emig  
Water Superintendent

vk

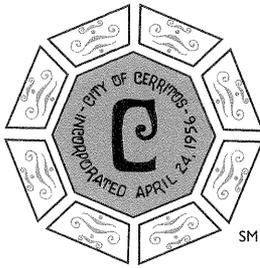
CAROL K. CHEN  
MAYOR

GEORGE RAY  
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JIM EDWARDS  
COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER



# CITY OF CERRITOS<sup>SM</sup>

CIVIC CENTER • 18125 BLOOMFIELD AVENUE  
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

Mr. Donald K. Jensen  
City of Santa Fe Springs  
Director of Public Works  
11710 Telegraph Road  
Santa Fe Springs, California 90670-3679

**RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear Mr. Jensen:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a sixty (60) day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing at a Cerritos City Council meeting on Thursday May 26, 2016 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (562) 916-1223 or our consultant preparing the plan, Manual Alvarez of Arcadis at (714) 508-2672.

Sincerely,

Charles Emig  
Water Superintendent

vk

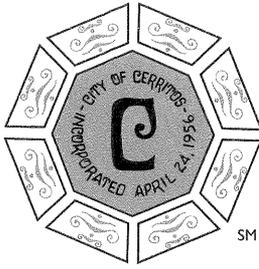
CAROL K. CHEN  
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COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER



# CITY OF CERRITOS<sup>SM</sup>

CIVIC CENTER • 18125 BLOOMFIELD AVENUE  
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

Ms. Adriana Figueroa  
City of Norwalk  
12700 Norwalk Boulevard  
Norwalk, California 90650

**RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear Ms. Figueroa:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

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Sincerely,

Charles Emig  
Water Superintendent

vk

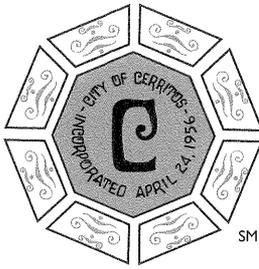
CAROL K. CHEN  
MAYOR

GEORGE RAY  
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JIM EDWARDS  
COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER



# CITY OF CERRITOS<sup>SM</sup>

CIVIC CENTER • 18125 BLOOMFIELD AVENUE  
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



March 10, 2016

Mr. Steven Arakawa  
Metropolitan Water District of Southern California  
Manager of Water Resources Management  
P.O. Box 54153  
Los Angeles, California 90054-0153

**RE: CITY OF CERRITOS 2015 URBAN WATER MANAGEMENT PLAN UPDATE**

Dear Mr. Arakawa:

The City of Cerritos is in the process of preparing our 2015 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a sixty (60) day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing at a Cerritos City Council meeting on Thursday May 26, 2016 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (562) 916-1223 or our consultant preparing the plan, Manual Alvarez of Arcadis at (714) 508-2672.

Sincerely,

Charles Emig  
Water Superintendent

vk

CAROL K. CHEN  
MAYOR

GEORGE RAY  
MAYOR PRO TEM

JIM EDWARDS  
COUNCILMEMBER

MARK E. PULIDO  
COUNCILMEMBER

NARESH SOLANKI  
COUNCILMEMBER

**PROOF OF PUBLICATION  
(2015.5 C.C.P.)**

**Los Cerritos Community Newspaper Group  
13079 E. Artesia Blvd., B-108  
Cerritos CA 90703  
(562) 407-3873**

County Clerk's Filing Stamp

STATE OF CALIFORNIA,  
COUNTY OF LOS ANGELES

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter.

I am the principal clerk of the printer of the Los Cerritos Community News, a newspaper of general circulation, printed and published one time each week in the County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, under the date of September 9, 1996, in Case Number V5005861 that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

5/20

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

DATED AT CERRITOS, CALIFORNIA,

**THIS 20th DAY OF MAY, 2016**

B

Signature

Brian Hews

Proof of Publication of

aGroup.net

**CITY OF CERRITOS  
NOTICE OF PUBLIC HEARING**

NOTICE IS HEREBY GIVEN that the City Council of the City of Cerritos will hold a public hearing on **Thursday, May 26, 2016 at 7:00 p.m.** on the following matter:

**REVIEW AND CONSIDERATION OF APPROVAL TO ADOPT THE 2015 URBAN WATER MANAGEMENT PLAN PURSUANT TO CALIFORNIA WATER CODE SECTIONS 10610 TO 10657**

This City Council hearing will be held in the Council Chambers of the Cerritos City Hall, 18125 Bloomfield Avenue, Bloomfield Avenue at 183rd Street, Cerritos, California.

THOSE DESIRING TO testify in favor or in opposition to the plan will be given an opportunity to do so at the public hearing.

Should you have any questions, please call Charles Emig, Water Superintendent, at (562) 916-1223. Copies of the report are available for inspection at the City Clerks Office, City of Cerritos, 18125 Bloomfield Avenue, Cerritos, CA 90703, 8:00 a.m. to 5:00 p.m.

Dated: May 10, 2016/s/ Vida Barone, City Clerk

Published at Los Cerritos Community Newspaper 5/20/16

**MAY 13, 2016 15**

Los Cerritos Community News  
13079 Artesia Blvd. Suite B-108, Cerritos, CA 90703  
562-407-3873

LCCN FORM 82180 PROOF

# Long Beach Press-Telegram

727 Pine Avenue  
Long Beach, CA 90844  
562-499-1236  
Fax: 562-499-1391  
legals@presstelegram.com

5007672

CITY OF CERRITOS  
CITY CLERK  
PO BOX 3130  
CERRITOS, CA 90703

## PROOF OF PUBLICATION (2015.5 C.C.P.)

### STATE OF CALIFORNIA County of Los Angeles

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principle clerk of the printer of the Long Beach Press-Telegram, a newspaper of general circulation, printed and published daily in the City of Long Beach, County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of County of Los Angeles, State of California, on the date of March 21, 1934, Case Number 370512. The notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

**05/12/2016, 05/19/2016**

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Executed at Long Beach, LA Co. California,  
this 19th day of May, 2016.



Signature

The Long Beach Press-Telegram, a newspaper of general circulation, is delivered to and available in but not limited to the following cities:  
Long Beach, Lakewood, Bellflower, Cerritos, Downey, Norwalk, Artesia, Paramount, Wilmington, Compton, South Gate, Los Alamitos, Seal Beach, Cypress, La Palma, Lynwood, San Pedro, Hawaiian

(Space below for use of County Clerk Only)

Legal No. **0010801937**

#### CITY OF CERRITOS NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the City Council of the City of Cerritos will hold a public hearing on **Thursday, May 26, 2016 at 7:00 p.m. on the following matter:**  
**REVIEW AND CONSIDERATION OF APPROVAL TO ADOPT THE 2015 URBAN WATER MANAGEMENT PLAN PURSUANT TO CALIFORNIA WATER CODE SECTIONS 10610 TO 10657**

This City Council hearing will be held in the Council Chambers of the Cerritos City Hall, 18125 Bloomfield Avenue, Bloomfield Avenue at 183rd Street, Cerritos, California.

THOSE DESIRING TO testify in favor or in opposition to the plan will be given an opportunity to do so at the public hearing.

Should you have any questions, please call Charles Emig, Water Superintendent, at (562) 916-1223. Copies of the report are available for inspection at the City Clerks Office, City of Cerritos, 18125 Bloomfield Avenue, Cerritos, CA 90703, 8:00 a.m. to 5:00 p.m.

Dated: May 10, 2016  
/s/ Vida Barone, City Clerk

**Pub: May 12, 19, 2016 (2t) PT (801937)**

# APPENDIX E-1

Notification of Public and Service Area Suppliers





# City Clerk's Office MULTIPURPOSE AFFIDAVIT

STATE OF CALIFORNIA  
COUNTY OF LOS ANGELES  
CITY OF CERRITOS

I	Vida Barone	<b>DO HEREBY CERTIFY THAT ON</b>	Posted <input checked="" type="checkbox"/>
	Brenda Cabrera		Mailed
	Cynthia Orozco	Date: 6/1/18	Published <input checked="" type="checkbox"/>
			Delivered

Authorized as representative for/on behalf of  
the following Department/Division:

At the following Locations:

<input checked="" type="checkbox"/> ASD	Administrative Services Department	<input checked="" type="checkbox"/>	City Hall, 18125 Bloomfield Avenue
<input type="checkbox"/>	CCO City Clerk's Office	<input checked="" type="checkbox"/>	Cerritos Public Library, 18025 Bloomfield Avenue
<input type="checkbox"/>	CMO City Manager's Office	<input checked="" type="checkbox"/>	City Posting Board, 18802 Gridley Road
<input type="checkbox"/>	CDD Community Development Department	<input checked="" type="checkbox"/>	City Posting Board 13301 East Artesia Boulevard
<input type="checkbox"/>	CSC Community Safety Department		Council Chamber Door, 18125 Bloomfield Avenue
<input checked="" type="checkbox"/> PWD	Public Works Department		Cerritos Sheriff's Conference Room 18135 Bloomfield Avenue
<input type="checkbox"/>	RSD Recreation Services Department		United States Postal Service
<input type="checkbox"/>	Other		Other:

Signature:	Date: 06/01/2018
Signature:	Date: 6/1/18
Signature:	Date:



# CITY OF CERRITOS<sup>SM</sup>

CIVIC CENTER • 18125 BLOOMFIELD AVENUE  
P.O. BOX 3130 • CERRITOS, CALIFORNIA 90703-3130  
PHONE: (562) 860-0311 • CERRITOS.US



## NOTICE OF PUBLIC HEARING

**NOTICE IS HEREBY GIVEN** that the **Cerritos City Council** will conduct a public hearing at a **Regular** meeting on **Thursday, June 14, 2018 at 7:00 p.m.** on the following matter:

**REVIEW AND CONSIDERATION TO WAIVE READING OF AND ADOPT A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CERRITOS ADOPTING AN AMENDMENT TO THE 2015 URBAN WATER MANAGEMENT PLAN PURSUANT TO CALIFORNIA WATER CODE SECTIONS 10610 TO 10657**

This public hearing will be conducted in the Council Chambers of the Cerritos City Hall, Cerritos Civic Center, 18125 Bloomfield Avenue, Cerritos, California, 90703. The meeting will also air live on Cerritos TV3 and will be streamed over the City of Cerritos website at **www.cerritos.us**. A copy of the related staff report will be available for download from the website by 6:00 p.m. on the Friday prior to the public hearing.

If you challenge the above mentioned item and related actions in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the **Cerritos City Council** at, or prior to, the public hearing.

Any person interested in this matter may contact the Office of the City Clerk at (562) 916-1248 for additional information and/or appear at the hearing in person or by agent and be heard.

Dated, Posted and Published: June 1 & June 8, 2018

Vida Barone  
City Clerk

# APPENDIX F

Adopted UWMP Resolution



**CITY OF CERRITOS**

**RESOLUTION NO. 2018-9**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CERRITOS  
ADOPTING AN AMENDMENT TO THE 2015 URBAN WATER  
MANAGEMENT PLAN PURSUANT TO CALIFORNIA WATER CODE  
SECTIONS 10610 TO 10657**

WHEREAS, Government Code Sections 10610 through 10657 requires the development of an Urban Water Management Plan for a water supplier providing more than 3,000 acre-feet of water annually; and

WHEREAS, the City of Cerritos developed its 2015 Urban Water Management Plan pursuant to the requirements of the Urban Water Management Planning Act of 1983; and

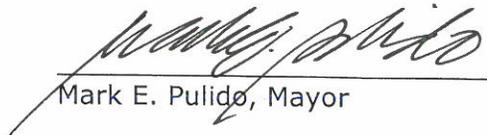
WHEREAS, the 2015 UWMP is a general information document and complements other regional water planning documents, including the Central Basin Municipal Water District and Metropolitan Water District of Southern California 2015 Regional Urban Water Management Plans; and

WHEREAS, the 2015 UWMP has been amended in response to comments from Los Angeles County.

**NOW, THEREFORE, THE CITY OF CERRITOS CITY COUNCIL DOES FIND,  
DETERMINE AND DECLARE AS FOLLOWS:**

**Section 1.** The City Council hereby approves the amendment to the 2015 Urban Water Management Plan pursuant to California Water Code sections 10610 to 10657.

**PASSED, APPROVED and ADOPTED this 14th day of June 2018.**

  
\_\_\_\_\_  
Mark E. Pulido, Mayor

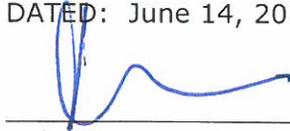
ATTEST:   
\_\_\_\_\_  
Vida Barone, City Clerk

STATE OF CALIFORNIA        )  
COUNTY OF LOS ANGELES    ) ss.  
CITY OF CERRITOS            )

I, Vida Barone, City Clerk of the City of Cerritos, California, DO HEREBY CERTIFY that the foregoing **Resolution No. 2018-9** was duly adopted by the City Council of the City of Cerritos at a Regular Meeting held on the 14<sup>th</sup> day of June, 2018, and that it was so adopted as follows:

AYES:            Councilmembers – Hu, Edwards, Yokoyama, Solanki, Pulido  
NOES:            Councilmembers – None  
ABSENT:          Councilmembers – None  
ABSTAIN:         Councilmembers – None

DATED: June 14, 2018



---

Vida Barone, City Clerk

PROOF OF PUBLICATION  
(2015.5 C.C.P.)  
Los Cerritos Community Newspaper Group  
13017 Artesia Blvd., Suite C-102  
Cerritos CA 90703  
(562) 407-3873

County Clerk's Filing Stamp

STATE OF CALIFORNIA,  
COUNTY OF LOS ANGELES

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter.

I am the principal clerk of the printer of the Los Cerritos Community News, a newspaper of general circulation, printed and published one time each week in the County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles of California, under the date of September 9, 1998, Case Number V5005861 that the notice, of which an annexed is a printed copy (set in type not small nonpareil), has been published in each regular issue of said newspaper and not in any supplement thereof on the following dates, to wit:

6/1 and 6/8/18

I certify (or declare) under penalty of perjury foregoing is true and correct.

DATED AT CERRITOS, CALIFORNIA,

THIS 1st DAY OF JUNE 2018

Signature

Brian Hews

Los Cerritos Community News  
13047 Artesia Blvd. Suite C-102, Cerritos, CA 90703  
562-407-3873  
LCCN FORM 82180 PROOF

**NOTICE OF PUBLIC HEARING**

NOTICE IS HEREBY GIVEN that the Cerritos City Council will conduct a public hearing at a Regular meeting on Thursday, June 14, 2018 at 7:00 p.m. on the following matter:

**REVIEW AND CONSIDERATION TO WAIVE READING OF AND ADOPT A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CERRITOS ADOPTING AN AMENDMENT TO THE 2015 URBAN WATER MANAGEMENT PLAN PURSUANT TO CALIFORNIA WATER CODE SECTIONS 10610 TO 10657**

This public hearing will be conducted in the Council Chambers of the Cerritos City Hall, Cerritos Civic Center, 18125 Bloomfield Avenue, Cerritos, California, 90703. The meeting will also air live on Cerritos TV3 and will be streamed over the City of Cerritos website at [www.cerritos.us](http://www.cerritos.us). A copy of the related staff report will be available for download from the website by 6:00 p.m. on the Friday prior to the public hearing.

If you challenge the above mentioned item and related actions in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Cerritos City Council at, or prior to, the public hearing.

Any person interested in this matter may contact the Office of the City Clerk at (562) 916-1248 for additional information and/or appear at the hearing in person or by agent and be heard.

Dated, Posted and Published: June 1 & June 8, 2018

*/s/*Vida Barone  
Vida Barone, City Clerk

Published at Los Cerritos Community Newspaper 6/1 and 6/8/18

**CITY OF CERRITOS**

**RESOLUTION NO. 2016-10**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CERRITOS  
ADOPTING THE 2015 URBAN WATER MANAGEMENT PLAN PURSUANT  
TO CALIFORNIA WATER CODE SECTIONS 10610 THROUGH 10657**

WHEREAS, Government Code Sections 10610 through 10657 requires the development of an Urban Water Management Plan for a water supplier providing more than 3,000 acre-feet of water annually; and

WHEREAS, the City of Cerritos provides water service to approximately 16,000 customers; and

WHEREAS, the City of Cerritos has updated its 2015 Urban Water Management Plan pursuant to the requirements of the Urban Water Management Planning Act of 1983; and

WHEREAS, the 2015 UWMP is a general information document and complements other regional water planning documents, including the Central Basin Municipal Water District and Metropolitan Water District of Southern California 2015 Regional Urban Water Management Plans; and

WHEREAS, the purpose of the 2015 UWMP is to provide a local perspective and analysis of the current and alternative water demand, supplies and conservation activities of the City; and

WHEREAS, the 2015 UWMP also addressed the effects and measures of coping with short-term and chronic water shortages within the City boundaries; and

WHEREAS, the 2015 UWMP will be periodically updated, no less than every five years in the years ending in zero and five, to reflect changes in water supply trends and conservation policies within the boundaries of the City.

NOW THEREFORE, BE IT HEREBY RESOLVED that the City Council of the City of Cerritos does hereby approve the 2015 Urban Water Management Plan Pursuant to California Water Code Sections 10610 through 10657.

PASSED, APPROVED and ADOPTED this 26th day of May 2016.

  
\_\_\_\_\_  
George Ray, Mayor

ATTEST:

  
\_\_\_\_\_  
Vida Barone, City Clerk

STATE OF CALIFORNIA     )  
COUNTY OF LOS ANGELES   ) ss.  
CITY OF CERRITOS         )

I, Vida Barone, City Clerk of the City of Cerritos, California, DO HEREBY CERTIFY that the foregoing **Resolution No. 2016-10** was duly adopted by the City Council of the City of Cerritos at a Regular Meeting held on the 26th day of May, 2016, and that it was so adopted as follows:

AYES:           Councilmembers –   Chen, Edwards, Pulido, Solanki, Ray  
NOES:           Councilmembers –   None.  
ABSENT:         Councilmembers –   None.  
ABSTAIN:        Councilmembers –   None.

DATED: May 26, 2016



---

Vida Barone  
City Clerk

# APPENDIX F-1

Adopted UWMP Resolution



# APPENDIX G

AWWA Water Loss Audit Worksheet



# AWWA Free Water Audit Software v5.0

American Water Works Association Copyright © 2014, All Rights Reserved.

This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

## Please begin by providing the following information

Name of Contact Person:

Email Address:

Telephone | Ext.:

Name of City / Utility:

City/Town/Municipality:

State / Province:

Country:

Year:  Financial Year

Start Date:  Enter MM/YYYY numeric format

End Date:  Enter MM/YYYY numeric format

Audit Preparation Date:

Volume Reporting Units:

PWSID / Other ID:

## The following guidance will help you complete the Audit

All audit data are entered on the [Reporting Worksheet](#)

Value can be entered by user

Value calculated based on input data

These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt:  Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

### Instructions

The current sheet. Enter contact information and basic audit details (year, units etc)

### Reporting Worksheet

Enter the required data on this worksheet to calculate the water balance and data grading

### Comments

Enter comments to explain how values were calculated or to document data sources

### Performance Indicators

Review the performance indicators to evaluate the results of the audit

### Water Balance

The values entered in the Reporting Worksheet are used to populate the Water Balance

### Dashboard

A graphical summary of the water balance and Non-Revenue Water components

### Grading Matrix

Presents the possible grading options for each input component of the audit

### Service Connection Diagram

Diagrams depicting possible customer service connection line configurations

### Definitions

Use this sheet to understand the terms used in the audit process

### Loss Control Planning

Use this sheet to interpret the results of the audit validity score and performance indicators

### Example Audits

Reporting Worksheet and Performance Indicators examples are shown for two validated audits

### Acknowledgements

Acknowledgements for the AWWA Free Water Audit Software v5.0

If you have questions or comments regarding the software please contact us via email at: [wlc@awwa.org](mailto:wlc@awwa.org)



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

?	Click to access definition
+	Click to add a comment

Water Audit Report for: **City of Cerritos**  
 Reporting Year: **2015**      **7/2014 - 6/2015**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

**All volumes to be entered as: ACRE-FEET PER YEAR**

To select the correct data grading for each input, determine the highest grade where

**WATER SUPPLIED**

----- Enter grading in column 'E' and 'J' -----			
Volume from own sources:	+ ?	8	7,809.000 acre-ft/yr
Water imported:	+ ?	8	651.000 acre-ft/yr
Water exported:	+ ?	8	827.000 acre-ft/yr

**Master Meter and Supply Error Adjustments**

Pcnt:	+ ?	8	0.000 acre-ft/yr
Value:	+ ?	8	0.000 acre-ft/yr
Pcnt:	+ ?	8	0.000 acre-ft/yr
Value:	+ ?	10	0.000 acre-ft/yr

Enter negative % or value for under-registration  
 Enter positive % or value for over-registration

**WATER SUPPLIED: 7,633.000** acre-ft/yr

**AUTHORIZED CONSUMPTION**

Billed metered:	+ ?	6	7,442.000 acre-ft/yr
Billed unmetered:	+ ?	n/a	0.000 acre-ft/yr
Unbilled metered:	+ ?	n/a	0.000 acre-ft/yr
Unbilled unmetered:	+ ?	?	95.413 acre-ft/yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

**AUTHORIZED CONSUMPTION: 7,537.413** acre-ft/yr

Click here: ?  
for help using option buttons below

Pcnt:	+ ?	?	1.25% 0.000 acre-ft/yr
-------	-----	---	------------------------

Use buttons to select percentage of water supplied OR value

Pcnt:	+ ?	?	0.25% 0.000 acre-ft/yr
-------	-----	---	------------------------

Pcnt:	+ ?	?	0.50% 0.000 acre-ft/yr
Pcnt:	+ ?	?	0.25% 0.000 acre-ft/yr

**WATER LOSSES (Water Supplied - Authorized Consumption)**

**95.587** acre-ft/yr

**Apparent Losses**

Unauthorized consumption: + ? 19.083 acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+ ?	5	37.397 acre-ft/yr
Systematic data handling errors:	+ ?	?	18.605 acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses: 75.084** acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**

Real Losses = Water Losses - Apparent Losses: ? 20.503 acre-ft/yr

**WATER LOSSES: 95.587** acre-ft/yr

**NON-REVENUE WATER**

**NON-REVENUE WATER: 191.000** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains:	+ ?	8	184.0 miles
Number of active AND inactive service connections:	+ ?	7	17,033
Service connection density:	?	?	93 conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: + ? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: + ? 7 82.5 psi

**COST DATA**

Total annual cost of operating water system:	+ ?	10	\$8,984,490	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	10	\$1.88	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	8	\$465.78	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

**\*\*\* YOUR SCORE IS: 75 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Billed metered
- 3: Customer metering inaccuracies



## AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association.

Water Audit Report for: City of Cerritos  
 Reporting Year: 2015 | 7/2014 - 6/2015

\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 75 out of 100 \*\*\*

### System Attributes:

	Apparent Losses:	75.084	acre-ft/yr
+	Real Losses:	20.503	acre-ft/yr
=	<b>Water Losses:</b>	<b>95.587</b>	acre-ft/yr

? Unavoidable Annual Real Losses (UARL): 328.10 acre-ft/yr

Annual cost of Apparent Losses: \$61,489

Annual cost of Real Losses: \$9,550 Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

### Performance Indicators:

Financial: { Non-revenue water as percent by volume of Water Supplied: 2.5%  
 Non-revenue water as percent by cost of operating system: 1.3% Real Losses valued at Variable Production Cost

Operational Efficiency: { Apparent Losses per service connection per day: 3.94 gallons/connection/day  
 Real Losses per service connection per day: 1.07 gallons/connection/day  
 Real Losses per length of main per day\*: N/A  
 Real Losses per service connection per day per psi pressure: 0.01 gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 20.50 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 0.06

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



# AWWA Free Water Audit Software: User Comments

WAS v5.0

American Water Works Association.

Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
Audit Item	Comment
<a href="#">Volume from own sources:</a>	
<a href="#">Vol. from own sources: Master meter error adjustment:</a>	
<a href="#">Water imported:</a>	
<a href="#">Water imported: master meter error adjustment:</a>	
<a href="#">Water exported:</a>	
<a href="#">Water exported: master meter error adjustment:</a>	
<a href="#">Billed metered:</a>	
<a href="#">Billed unmetered:</a>	
<a href="#">Unbilled metered:</a>	

Audit Item	Comment
<a href="#">Unbilled unmetered:</a>	
<a href="#">Unauthorized consumption:</a>	
<a href="#">Customer metering inaccuracies:</a>	Used 0.5% for default value to meet worksheet compliance
<a href="#">Systematic data handling errors:</a>	
<a href="#">Length of mains:</a>	
<a href="#">Number of active AND inactive service connections:</a>	As of December 31, 2015. Assumed inactive are included but not specified. 15,333 + 1700 FH = 17,033
<a href="#">Average length of customer service line:</a>	
<a href="#">Average operating pressure:</a>	
<a href="#">Total annual cost of operating water system:</a>	
<a href="#">Customer retail unit cost (applied to Apparent Losses):</a>	
<a href="#">Variable production cost (applied to Real Losses):</a>	



# AWWA Free Water Audit Software: Water Balance

WAS v5.0

American Water Works Association.

Water Audit Report for:	City of Cerritos	
Reporting Year:	2015	7/2014 - 6/2015
Data Validity Score:	75	

		Water Exported <i>827.000</i>	Billed Water Exported			Revenue Water <i>827.000</i>
<b>Own Sources</b> (Adjusted for known errors)  <i>7,809.000</i>	<b>System Input</b>  <i>8,460.000</i>	<b>Water Supplied</b>  <i>7,633.000</i>	<b>Authorized Consumption</b>  <i>7,537.413</i>	<b>Billed Authorized Consumption</b>  <i>7,442.000</i>	<b>Billed Metered Consumption (water exported is removed)</b>  <i>7,442.000</i>	<b>Revenue Water</b>  <i>7,442.000</i>
					<b>Billed Unmetered Consumption</b>  <i>0.000</i>	
				<b>Unbilled Authorized Consumption</b>  <i>95.413</i>	<b>Unbilled Metered Consumption</b>  <i>0.000</i>	<b>Non-Revenue Water (NRW)</b>  <i>191.000</i>
				<b>Unbilled Unmetered Consumption</b>  <i>95.413</i>		
			<b>Apparent Losses</b>  <i>75.084</i>	<b>Unauthorized Consumption</b>  <i>19.083</i>		
				<b>Customer Metering Inaccuracies</b>  <i>37.397</i>		
				<b>Systematic Data Handling Errors</b>  <i>18.605</i>		
<b>Water Imported</b>  <i>651.000</i>			<b>Water Losses</b>  <i>95.587</i>	<b>Real Losses</b>  <i>20.503</i>	<b>Leakage on Transmission and/or Distribution Mains</b> <i>Not broken down</i>	
					<b>Leakage and Overflows at Utility's Storage Tanks</b> <i>Not broken down</i>	
					<b>Leakage on Service Connections</b> <i>Not broken down</i>	



# AWWA Free Water Audit Software: Dashboard

WAS v5.0

American Water Works Association.

The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

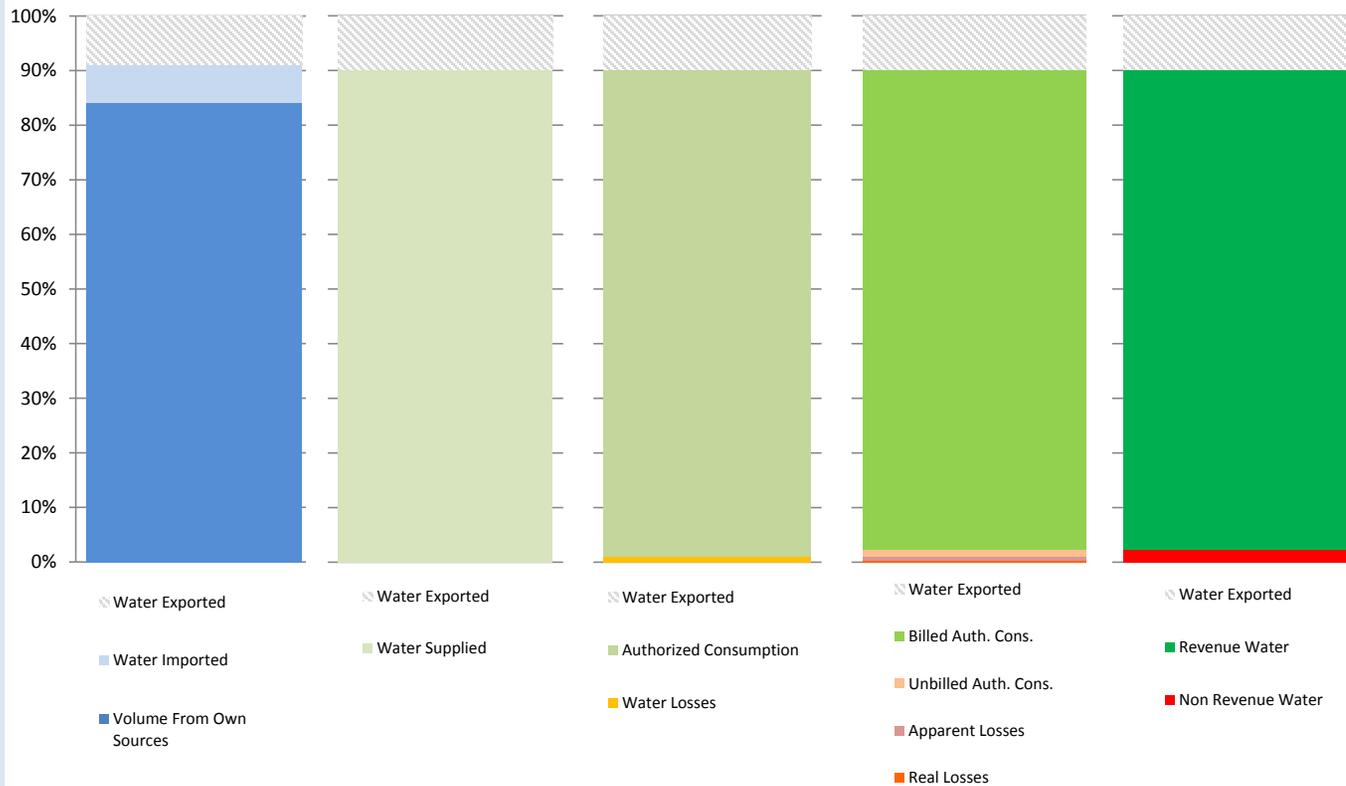
Water Audit Report for: **City of Cerritos**

Reporting Year: **2015**      **7/2014 - 6/2015**

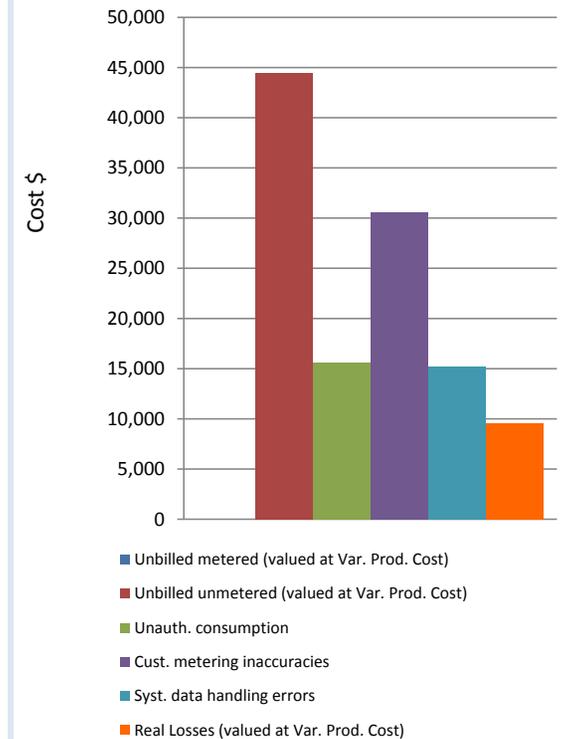
Data Validity Score: **75**

Show me the VOLUME of Non-Revenue Water

Show me the COST of Non-Revenue Water



Total Cost of NRW = \$115,480



# APPENDIX H

SBx7-7 Verification Forms



**SB X7-7 Table 0: Units of Measure Used in UWMP\***

*(select one from the drop down list)*

Acre Feet

*\*The unit of measure must be consistent with Table 2-3*

NOTES:

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	12,916	Acre Feet
	2008 total volume of delivered recycled water	2,164	Acre Feet
	2008 recycled water as a percent of total deliveries	16.75%	Percent
	Number of years in baseline period <sup>1</sup>	14	Years
	Year beginning baseline period range	1997	
	Year ending baseline period range <sup>2</sup>	2010	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range <sup>3</sup>	2008	
<sup>1</sup> If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.			
<sup>2</sup> The ending year must be between December 31, 2004 and December 31, 2010.			
<sup>3</sup> The ending year must be between December 31, 2007 and December 31, 2010.			
NOTES:			

**SB X7-7 Table 2: Method for Population Estimates**

<b>Method Used to Determine Population</b> (may check more than one)	
<input type="checkbox"/>	<b>1. Department of Finance (DOF)</b> DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	<b>2. Persons-per-Connection Method</b>
<input checked="" type="checkbox"/>	<b>3. DWR Population Tool</b>
<input type="checkbox"/>	<b>4. Other</b> DWR recommends pre-review
NOTES:	

**SB X7-7 Table 3: Service Area Population**

Year		Population
10 to 15 Year Baseline Population		
Year 1	1997	50,501
Year 2	1998	50,374
Year 3	1999	50,391
Year 4	2000	51,114
Year 5	2001	51,737
Year 6	2002	52,710
Year 7	2003	53,726
Year 8	2004	54,102
Year 9	2005	54,286
Year 10	2006	54,229
<i>Year 11</i>	<i>2007</i>	54,112
<i>Year 12</i>	<i>2008</i>	54,167
<i>Year 13</i>	<i>2009</i>	54,256
<i>Year 14</i>	<i>2010</i>	54,546
<i>Year 15</i>		
5 Year Baseline Population		
Year 1	2004	54,102
Year 2	2005	54,286
Year 3	2006	54,229
Year 4	2007	54,112
Year 5	2008	54,167
2015 Compliance Year Population		
<b>2015</b>		49,091
NOTES:		

**SB X7-7 Table 4: Annual Gross Water Use \***

	Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>Fm SB X7-7 Table(s) 4-A</i>	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>Fm SB X7-7 Table 4-B</i>	Water Delivered for Agricultural Use	Process Water <i>Fm SB X7-7 Table(s) 4-D</i>	
<b>10 to 15 Year Baseline - Gross Water Use</b>								
Year 1	1997	12372	2,091		0		0	10,281
Year 2	1998	11401	1,976		0		0	9,425
Year 3	1999	11607	1,918		0		0	9,689
Year 4	2000	12770	2,470		0		0	10,300
Year 5	2001	12314	2,357		0		0	9,957
Year 6	2002	12756	2,614		0		0	10,142
Year 7	2003	12486	2,761		0		0	9,725
Year 8	2004	13247	3,140		0		0	10,107
Year 9	2005	11927	2,799		0		0	9,128
Year 10	2006	12653	3,492		0		0	9,161
Year 11	2007	13317	3,526		0		0	9,791
Year 12	2008	13442	2,690		0		0	10,752
Year 13	2009	10361	1,717		0		0	8,644
Year 14	2010	9597	1,257		0		0	8,340
Year 15	0	0			0		0	0
<b>10 - 15 year baseline average gross water use</b>								<b>9,029</b>
<b>5 Year Baseline - Gross Water Use</b>								
Year 1	2004	13,247	3,140		0		0	10,107
Year 2	2005	11,927	2,799		0		0	9,128
Year 3	2006	12,653	3,492		0		0	9,161
Year 4	2007	13,317	3,526		0		0	9,791
Year 5	2008	13,442	2,690		0		0	10,752
<b>5 year baseline average gross water use</b>								<b>9,788</b>
<b>2015 Compliance Year - Gross Water Use</b>								
<b>2015</b>		8,460	827		0		0	7,633
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								
NOTES:								

**SB X7-7 Table 4-A: Volume Entering the Distribution System(s)**

Complete one table for each source.

<b>Name of Source</b>		GW		
<b>This water source is:</b>				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
<b>10 to 15 Year Baseline - Water into Distribution System</b>				
Year 1	1997	8705		8,705
Year 2	1998	9374		9,374
Year 3	1999	7772		7,772
Year 4	2000	9515		9,515
Year 5	2001	9759		9,759
Year 6	2002	10504		10,504
Year 7	2003	9971		9,971
Year 8	2004	10349		10,349
Year 9	2005	10434		10,434
Year 10	2006	12028		12,028
Year 11	2007	11812		11,812
Year 12	2008	11415		11,415
Year 13	2009	10021		10,021
Year 14	2010	9307		9,307
Year 15	0			0
<b>5 Year Baseline - Water into Distribution System</b>				
Year 1	2004	10349		10,349
Year 2	2005	10434		10,434
Year 3	2006	12028		12,028
Year 4	2007	11812		11,812
Year 5	2008	11415		11,415
<b>2015 Compliance Year - Water into Distribution System</b>				
<b>2015</b>	7809.1			<b>7,809</b>
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

**SB X7-7 Table 4-A: Volume Entering the Distribution System(s)**

**Name of Source** CBMWD/MET

**This water source is:**  
 The supplier's own water source  
 A purchased or imported source

<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
<b>10 to 15 Year Baseline - Water into Distribution System</b>				
Year 1	1997	3667		3,667
Year 2	1998	2027		2,027
Year 3	1999	3835		3,835
Year 4	2000	3255		3,255
Year 5	2001	2555		2,555
Year 6	2002	2252		2,252
Year 7	2003	2515		2,515
Year 8	2004	2898		2,898
Year 9	2005	1493		1,493
Year 10	2006	625		625
Year 11	2007	1505		1,505

Year 12	2008	2027		2,027
Year 13	2009	340		340
Year 14	2010	290		290
Year 15	0			0
5 Year Baseline - Water into Distribution System				
Year 1	2004	2898		2,898
Year 2	2005	1493		1,493
Year 3	2006	625		625
Year 4	2007	1505		1,505
Year 5	2008	2027		2,027
2015 Compliance Year - Water into Distribution System				
	<b>2015</b>	651		651
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

<b>SB X7-7 Table 4-A: Volume Entering the Distribution</b>				
<b>Name of Source</b>		Source 3		
<b>This water source is:</b>				
<input type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>	<b>Volume Entering Distribution System</b>	<b>Meter Error Adjustment* Optional (+/-)</b>	<b>Corrected Volume Entering Distribution System</b>	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1997			0
Year 2	1998			0
Year 3	1999			0
Year 4	2000			0
Year 5	2001			0
Year 6	2002			0
Year 7	2003			0
Year 8	2004			0
Year 9	2005			0
Year 10	2006			0
Year 11	2007			0
Year 12	2008			0
Year 13	2009			0
Year 14	2010			0
Year 15	0			0
5 Year Baseline - Water into Distribution System				
Year 1	2004			0
Year 2	2005			0
Year 3	2006			0
Year 4	2007			0
Year 5	2008			0
2015 Compliance Year - Water into Distribution System				
	<b>2015</b>			0
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

<b>SB X7-7 Table 4-A: Volume Entering the Distribution</b>				
<b>Name of Source</b>		Source 4		
<b>This water source is:</b>				
<input type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			

**SB X7-7 Table 4-B: Indirect Recycled Water Use Deduction** (For use only by agencies that are deducting indirect recycled water)

Baseline Year <i>Fm SB X7-7 Table 3</i>	Surface Reservoir Augmentation					Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System
	Volume Discharged from Reservoir for Distribution System Delivery	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility*	Transmission/ Treatment Losses	Recycled Volume Entering Distribution System from Groundwater Recharge	
<b>10-15 Year Baseline - Indirect Recycled Water Use</b>									
Year 1	1997		0		0			0	0
Year 2	1998		0		0			0	0
Year 3	1999		0		0			0	0
Year 4	2000		0		0			0	0
Year 5	2001		0		0			0	0
Year 6	2002		0		0			0	0
Year 7	2003		0		0			0	0
Year 8	2004		0		0			0	0
Year 9	2005		0		0			0	0
Year 10	2006		0		0			0	0
Year 11	2007		0		0			0	0
Year 12	2008		0		0			0	0
Year 13	2009		0		0			0	0
Year 14	2010		0		0			0	0
Year 15	0		0		0			0	0
<b>5 Year Baseline - Indirect Recycled Water Use</b>									
Year 1	2004		0		0			0	0
Year 2	2005		0		0			0	0
Year 3	2006		0		0			0	0
Year 4	2007		0		0			0	0
Year 5	2008		0		0			0	0
<b>2015 Compliance - Indirect Recycled Water Use</b>									
	<b>2015</b>		0		0			0	0
*Suppliers will provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.									
NOTES:									

**SB X7-7 Table 4-C: Process Water Deduction Eligibility**

*(For use only by agencies that are deducting process water) Choose Only One*

<input type="checkbox"/>	<b>Criteria 1-</b> Industrial water use is equal to or greater than 12% of gross water use. Complete SB X7-7 Table 4-C.1
<input type="checkbox"/>	<b>Criteria 2 -</b> Industrial water use is equal to or greater than 15 GPCD. Complete SB X7-7 Table 4-C.2
<input type="checkbox"/>	<b>Criteria 3 -</b> Non-industrial use is equal to or less than 120 GPCD. Complete SB X7-7 Table 4-C.3
<input type="checkbox"/>	<b>Criteria 4 -</b> Disadvantaged Community. Complete SB x7-7 Table 4-C.4

NOTES:

## SB X7-7 Table 4-C.1: Process Water Deduction Eligibility

### Criteria 1

Industrial water use is equal to or greater than 12% of gross water use

Baseline Year <i>Fm SB X7-7 Table 3</i>	Gross Water Use Without Process Water Deduction	Industrial Water Use	Percent Industrial Water	Eligible for Exclusion Y/N
<b>10 to 15 Year Baseline - Process Water Deduction Eligibility</b>				
Year 1	1997	10,281	0%	NO
Year 2	1998	9,425	0%	NO
Year 3	1999	9,689	0%	NO
Year 4	2000	10,300	0%	NO
Year 5	2001	9,957	0%	NO
Year 6	2002	10,142	0%	NO
Year 7	2003	9,725	0%	NO
Year 8	2004	10,107	0%	NO
Year 9	2005	9,128	0%	NO
Year 10	2006	9,161	0%	NO
Year 11	2007	9,791	0%	NO
Year 12	2008	10,752	0%	NO
Year 13	2009	8,644	0%	NO
Year 14	2010	8,340	0%	NO
Year 15	0	0		NO
<b>5 Year Baseline - Process Water Deduction Eligibility</b>				
Year 1	2004	10,107	0%	NO
Year 2	2005	9,128	0%	NO
Year 3	2006	9,161	0%	NO
Year 4	2007	9,791	0%	NO
Year 5	2008	10,752	0%	NO
<b>2015 Compliance Year - Process Water Deduction Eligibility</b>				
<b>2015</b>		7,633	0%	NO
NOTES:				

## SB X7-7 Table 4-C.2: Process Water Deduction Eligibility

### Criteria 2

Industrial water use is equal to or greater than 15 GPCD

Baseline Year <i>Fm SB X7-7 Table 3</i>	Industrial Water Use	Population	Industrial GPCD	Eligible for Exclusion Y/N	
<b>10 to 15 Year Baseline - Process Water Deduction Eligibility</b>					
Year 1	1997		50,501	0	NO
Year 2	1998		50,374	0	NO
Year 3	1999		50,391	0	NO
Year 4	2000		51,114	0	NO
Year 5	2001		51,737	0	NO
Year 6	2002		52,710	0	NO
Year 7	2003		53,726	0	NO
Year 8	2004		54,102	0	NO
Year 9	2005		54,286	0	NO
Year 10	2006		54,229	0	NO
<i>Year 11</i>	2007		54,112	0	NO
<i>Year 12</i>	2008		54,167	0	NO
<i>Year 13</i>	2009		54,256	0	NO
<i>Year 14</i>	2010		54,546	0	NO
<i>Year 15</i>	0		0		NO
<b>5 Year Baseline - Process Water Deduction Eligibility</b>					
Year 1	2004		54,102	0	NO
Year 2	2005		54,286	0	NO
Year 3	2006		54,229	0	NO
Year 4	2007		54,112	0	NO
Year 5	2008		54,167	0	NO
<b>2015 Compliance Year - Process Water Deduction Eligibility</b>					
<b>2015</b>		49,091	0		NO
NOTES:					

**SB X7-7 Table 4-C.3: Process Water Deduction Eligibility**

**Criteria 3**

Non-industrial use is equal to or less than 120 GPCD

Baseline Year <i>Fm SB X7-7 Table 3</i>	Gross Water Use Without Process Water Deduction <i>Fm SB X7-7 Table 4</i>	Industrial Water Use	Non-industrial Water Use	Population <i>Fm SB X7-7 Table 3</i>	Non-Industrial GPCD	Eligible for Exclusion Y/N	
<b>10 to 15 Year Baseline - Process Water Deduction Eligibility</b>							
Year 1	1997	10,281		10,281	50,501	182	NO
Year 2	1998	9,425		9,425	50,374	167	NO
Year 3	1999	9,689		9,689	50,391	172	NO
Year 4	2000	10,300		10,300	51,114	180	NO
Year 5	2001	9,957		9,957	51,737	172	NO
Year 6	2002	10,142		10,142	52,710	172	NO
Year 7	2003	9,725		9,725	53,726	162	NO
Year 8	2004	10,107		10,107	54,102	167	NO
Year 9	2005	9,128		9,128	54,286	150	NO
Year 10	2006	9,161		9,161	54,229	151	NO
Year 11	2007	9,791		9,791	54,112	162	NO
Year 12	2008	10,752		10,752	54,167	177	NO
Year 13	2009	8,644		8,644	54,256	142	NO
Year 14	2010	8,340		8,340	54,546	136	NO
Year 15	0	0		0	0		NO
<b>5 Year Baseline - Process Water Deduction Eligibility</b>							
Year 1	2004	10,107		10,107	54,102	167	NO
Year 2	2005	9,128		9,128	54,286	150	NO
Year 3	2006	9,161		9,161	54,229	151	NO
Year 4	2007	9,791		9,791	54,112	162	NO
Year 5	2008	10,752		10,752	54,167	177	NO
<b>2015 Compliance Year - Process Water Deduction Eligibility</b>							
<b>2015</b>		7,633		7,633	49,091	139	NO
NOTES:							

**SB X7-7 Table 4-C.4: Process Water Deduction Eligibility**

**Criteria 4**

Disadvantaged Community

Use IRWM DAC Mapping tool [http://www.water.ca.gov/irwm/grants/resources\\_dac.cfm](http://www.water.ca.gov/irwm/grants/resources_dac.cfm)

California Median Household Income	Service Area Median Household Income	Percentage of Statewide Average	Eligible for Exclusion? Y/N
<b>2015 Compliance Year - Process Water Deduction Eligibility</b>			
2010	\$53,046		0% YES

*A "Disadvantaged Community" is a community with a median household income less than 80 percent of the statewide average.*

NOTES:

**SB X7-7 Table 4-D: Process Water Deduction - Volume**

*Complete a*

*separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer		<i>Industrial Customer 1</i>				
Baseline Year <i>Fm SB X7-7 Table 3</i>	Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer	
<b>10 to 15 Year Baseline - Process Water Deduction</b>						
Year 1	1997				0	
Year 2	1998				0	
Year 3	1999				0	
Year 4	2000				0	
Year 5	2001				0	
Year 6	2002				0	
Year 7	2003				0	
Year 8	2004				0	
Year 9	2005				0	
Year 10	2006				0	
<i>Year 11</i>	2007				0	
<i>Year 12</i>	2008				0	
<i>Year 13</i>	2009				0	
<i>Year 14</i>	2010				0	
<i>Year 15</i>	0				0	
<b>5 Year Baseline - Process Water Deduction</b>						
Year 1	2004				0	
Year 2	2005				0	
Year 3	2006				0	
Year 4	2007				0	
Year 5	2008				0	
<b>2015 Compliance Year - Process Water Deduction</b>						
<b>2015</b>					0	
NOTES:						

**SB X7-7 Table 4-D: Process Water Deduction - Volume**

*Complete a*

*separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer		<i>Industrial Customer 2</i>				
Baseline Year <i>Fm SB X7-7 Table 3</i>	Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer	

**SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)**

<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Annual Gross Water Use</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use (GPCD)</b>
<b>10 to 15 Year Baseline GPCD</b>				
Year 1	1997	50,501	10,281	182
Year 2	1998	50,374	9,425	167
Year 3	1999	50,391	9,689	172
Year 4	2000	51,114	10,300	180
Year 5	2001	51,737	9,957	172
Year 6	2002	52,710	10,142	172
Year 7	2003	53,726	9,725	162
Year 8	2004	54,102	10,107	167
Year 9	2005	54,286	9,128	150
Year 10	2006	54,229	9,161	151
<i>Year 11</i>	2007	54,112	9,791	162
<i>Year 12</i>	2008	54,167	10,752	177
<i>Year 13</i>	2009	54,256	8,644	142
<i>Year 14</i>	2010	54,546	8,340	136
<i>Year 15</i>	0	0	0	
<b>10-15 Year Average Baseline GPCD</b>				<b>164</b>
<b>5 Year Baseline GPCD</b>				
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Gross Water Use</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use</b>
Year 1	2004	54,102	10,107	167
Year 2	2005	54,286	9,128	150
Year 3	2006	54,229	9,161	151
Year 4	2007	54,112	9,791	162
Year 5	2008	54,167	10,752	177
<b>5 Year Average Baseline GPCD</b>				<b>161</b>
<b>2015 Compliance Year GPCD</b>				
<b>2015</b>		49,091	7,633	139
NOTES:				

**SB X7-7 Table 6: Gallons per Capita per Day**  
*Summary From Table SB X7-7 Table 5*

10-15 Year Baseline GPCD	164
5 Year Baseline GPCD	161
2015 Compliance Year GPCD	139
NOTES:	

**SB X7-7 Table 7: 2020 Target Method***Select Only One*

Target Method		Supporting Documentation
<input type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input checked="" type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator
NOTES:		

**SB X7-7 Table 7-A: Target Method 1**

20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
164	131

NOTES:

**SB X7-7 Table 7-E: Target Method 3**

Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
<input type="checkbox"/>		North Coast	137	130
<input type="checkbox"/>		North Lahontan	173	164
<input type="checkbox"/>		Sacramento River	176	167
<input type="checkbox"/>		San Francisco Bay	131	124
<input type="checkbox"/>		San Joaquin River	174	165
<input type="checkbox"/>		Central Coast	123	117
<input type="checkbox"/>		Tulare Lake	188	179
<input type="checkbox"/>		South Lahontan	170	162
<input checked="" type="checkbox"/>	100%	South Coast	149	142
<input type="checkbox"/>		Colorado River	211	200
<p align="center"><b>Target</b> <i>(If more than one region is selected, this value is calculated.)</i></p>				<p align="center"><b>142</b></p>
<p>NOTES:</p>				

**SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target**

5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target*	Calculated 2020 Target <i>Fm Appropriate Target Table</i>	Confirmed 2020 Target
161	153	142	142

\* Maximum 2020 Target is 95% of the 5 Year Baseline GPCD

NOTES:

**SB X7-7 Table 8: 2015 Interim Target GPCD**

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
142	164	153

NOTES:

**SB X7-7 Table 9: 2015 Compliance**

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD		
139	153	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	0	138.8041681	138.8041681	YES

NOTES:

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A decorative graphic consisting of three thin orange lines: one horizontal line extending across the width of the page, and two parallel diagonal lines extending from the bottom left towards the top right.