2015

URBAN WATER MANAGEMENT PLAN

City of Inglewood

Public Works

Ocotober 4, 2016

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CITY OF INGLEWOOD

2015 URBAN WATER MANAGEMENT PLAN
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E.1. Basis for Preparing 2015 UWMP

The City, and any water agency serving over 3,000 acre-feet of water annually or providing service to more than 3,000 customers, is required to prepare an UWMP in years ending in 5 and 0, and submit it to the Department of Water Resources (DWR). The UWMP Act requires applicable water agencies to develop an UWMP to provide a framework for long term water planning and to inform the public of the supplier's plans to ensure adequate water supplies for existing and future demands.

The UWMP is required to assess the reliability of the agency's water supplies over a 20-year planning horizon, and report its progress on 20 percent reduction in per-capita urban water consumption by the year 2020 as required in the Water Conservation Bill of 2009 (SBx7-7). DWR reviews the agency's UWMP to make sure they have completed the requirements identified in the Water Code Sections 10608-10656, then submits a report to the Legislature summarizing the status of the plans.

E.2. City Water Supply

The City obtains its potable water supply from two sources: imported surface water purchased from the Metropolitan Water District of Southern California (Metropolitan) through West Basin Municipal Water District (WBMWD), and local groundwater produced from the West Coast Groundwater Basin (WCGB) via City wells. The imported water is treated by Metropolitan, and the groundwater is treated at the City's Sanford M. Anderson Water Treatment Plant for the removal of iron and manganese. Treatment includes disinfection. The groundwater and imported water supplies are blended prior to entering the City's water distribution system.

In 2015, the City purchased approximately 80% of its potable water supply from WBMWD and produced approximately 20% of its potable water supply from the local groundwater basin via City owned and operated wells. However, the City is constructing a new well and rehabilitating existing wells to increase groundwater production, and it is estimated that approximately 44% of the City's potable water supply will come from City groundwater in 2020.

The City purchases recycled water from WBMWD. The City currently has 18 service connections to the WBMWD recycled water system. City purchases of recycled water have averaged 721 AFY since 2005, which is approximately 6% of its total water supply. City recycled water use is projected to increase to approximately 1,060 AFY by 2020.

E.3 City Water Service Area Demographics and Planned Growth

The City's water service area (WSA) comprises 79.4% of the City of Inglewood in terms of land area with Golden State Water Company (GSWC) and Cal-American Water Company (CAWC) serving water to the remaining land area of the City. The population of the City's WSA ranged from 73.1% to 77.6% of the City's total population between 2000 and 2015. Projected City populations as estimated by the City's Planning Department, which are consistent with Southern California Association of Governments

(SCAG) population projections, were multiplied by a factor of 0.75 to estimate projected populations for the City's WSA, which are shown in Table E-1. The water service area population is projected to increase from 84,790 in 2015 to 96,384 in 2040, which is a 13.7% increase.

Table E-1: City's WSA Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040	% Increase[a]
	84,790	89,890	93,650	94,561	95,472	96,384	13.7

(a) Relative to 2015

The population increase of 5,100 people between 2015 and 2020 is primarily attributable to the Hollywood Park redevelopment project, termed "City of Champions Revitalization Project". The buildout population of 7,500 people is estimated to occur by 2025.

E.4 Historical, Current and Projected City Water Use

Through the implementation of City water conservation ordinances and measures, total water use for the City's WSA area has decreased 10.9% since 2010 and 24.1% since 2005. City WSA per-capita water use, which is total water use divided by the service area population, has decreased by similar amounts. Likewise, City water supply, which comes from imported water purchases and groundwater production, has also decreased from 2005 to 2015.

In April 2015, Governor Jerry Brown issued Executive Order B-29-15 requiring the State Water Resources Control Board to implement measures to cut the State's overall water usage by 25% due to the continuing drought. Cities and water agencies were assigned various reduction goals, and the City of Inglewood's reduction goal was set at 12% and was reduced to 11% in February 2016 after the City received a climate consideration. City water use has decreased a cumulative 15.7% for the first twelve recording months (June 2015 through May 2016) relative to year 2013 water usage in response to the City's conservation goal set by the State, which has been extended to October 2016 or as long as the drought continues.

Projected City water use through the year 2040 is shown in Table E-2. City per-capita water use is projected to increase slightly to 100.6 gallons per capita per day (gpcd) in 2020 (from 92.9 gpcd in 2015) assuming some bounce-back once the drought ends, but then gradually decrease back to 92.5 gpcd by 2040. Total water use is projected to increase from 8,826 acre-feet per year (AFY) in 2015 to 9,991 AFY in 2040 (13.2%). The potable water demand for Hollywood Park (City of Champions Revitalization Project) is estimated at 789 AFY at build-out in 2025.

Table E-2: Projected City WSA Demands						
	2015	2020	2025	2030	2035	2040
Population	84,790	89,890	93,650	94,561	95,472	96,384
Per-Capita Water Use (gpcd)	92.9	100.6	98.3	96.4	94.4	92.5
Water Use (afy)	8,826	10,131	10,317	10,209	10,100	9,991

E.5 Senate Bill x7-7 (SBx7-7)

Senate Bill x7-7 (SBx7-7) was enacted in November 2009 (Water Conservation Act of 2009), requiring all water suppliers to increase water use efficiency. The legislation set an overall goal of reducing per-capita urban water use by 20% by December 31, 2020 and to make incremental progress towards this goal by reducing per capita water use by at least 10% by December 31, 2015. In preparing the 2010 UWMP, each urban retail water supplier was required to develop baseline daily per-capita water use, minimum baseline daily per-capita water use, and target daily per-capita water use for 2015 and 2020 that were to be 10% and 20% less, respectively.

In preparing the 2015 UWMP, most water agencies including the City were required to recalculate their baseline population using 2010 Census data and then recalculate their target daily per-capita water use for 2015 and 2020. The 2015 and 2020 water use targets were calculated to be 116.6 and 112.0 gpcd, respectively. In 2015, the City's per-capita water use was 92.9 gpcd, which was significantly lower than its 2015 target of 116.6 gpcd and is also lower than its 2020 target of 112.0 gpcd.

E.8 City Water Supply Reliability

Dating back to 2008, imported water purchases have averaged 69% of the City's water supply and groundwater has averaged 24.5%. Recycled water supply has averaged 6.5%. Due to wells being out of service, groundwater supply decreased from 34% of total water supply in 2009 to 17% in 2013 and was 18% in 2015, with imported water supply increasing proportionally. This is significant because City groundwater production is much more economical than imported water purchases.

The City currently produces groundwater from the WCGB via four active groundwater wells, Well Nos. 1, 2, 4 and 6, that were constructed in 1974, 1974, 1990, and 2003, respectively. Well No. 1 was rehabilitated in late 2014 and placed back in service in 2015. Well No. 2 is currently out of service and is scheduled for rehabilitation in late 2016. Well Nos. 4 and 6 are scheduled for rehabilitation in 2017.

A new City well, Well No. 7, will be designed and constructed and is planned for operation beginning in 2017 with an estimated supply of 1,950 AFY. With well rehabilitation and the construction of new Well No. 7, City groundwater production capacity is projected to increase to 5,300 AFY by the year 2017, which is an increase of approximately 200% relative to groundwater production in 2015 (1,763 AFY). It is estimated that the City will rehabilitate and replace wells as required to maintain average annual well supply at

approximately 4,450 AFY, equivalent to their current groundwater rights, through the planning period.

Two of the most significant constraints on water supply for the City and for Southern California have been the drought that started in 2012 and has persisted into 2016, and Sacramento-San Joaquin River Delta ecosystem issues that affect imported water supply from the State Water Project (SWP), which provides water to 29 urban and agricultural agencies throughout California. More than two-thirds of California's residents obtain some of their drinking water from the Bay-Delta system.

The Bay-Delta's declining ecosystem, caused by a number of factors that include agricultural runoff, predation of native fish species, urban and agricultural discharge, changing ecosystem food supplies, and overall system operation, has led to reduction in imported water supply deliveries. SWP delivery restrictions due to regulatory requirements resulted in the loss of about 1.5 million acre feet (MAF) of supplies to Metropolitan from 2008 through 2014, reducing the likelihood that regional storage can be refilled in the near-term.

In April 2015, the Brown Administration announced California WaterFix, as well as a separate ecosystem restoration effort called California EcoRestore. Together, the California WaterFix and California EcoRestore will make significant contributions toward achieving the coequal goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Delta ecosystem established in the Sacramento-San Joaquin Delta Reform Act of 2009.

In their 2015 UWMP dated June 2016, Metropolitan estimated supply capability and projected demands through the year 2040 for an average (normal) year based on an average of hydrologies for the years 1922-2012; for a single dry-year based on a repeat of the hydrology in the year 1977; and for multiple dry years based on a repeat of the hydrology of 1990-1992. For each of these scenarios there is a projected surplus of supply in every forecast year through 2040. Projected supply surpluses, based on the capability of current supplies, range from 0.1 percent to 87 percent of projected demands. With the inclusion of supplies under development, potential surpluses range from 5 percent to 110 percent of projected demands.

As Metropolitan has determined it can meet all full-service demands of its member agencies through 2040 with surplus supplies, and because of the City's goal to regularly upgrade and rehabilitate its well supply system to maintain groundwater supply equivalent to its groundwater rights of 4,500 AFY, it is projected the City can meet all normal year, single dry year, and multiple dry year demands through the year 2040.

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ACRONYMS and ABBREVIATIONS

AB	Assembly Bill
AF	Acre Feet
AFY	Acre Feet per Year
AMI	Area Median Income
AVEK	Antelope Valley-East Kern Water Agency
AWWA	American Water Works Association
BMP	Best Management Practices
BDCP	Bay Delta Conservation Plan
CAWCD	Central Arizona Water Conservation District
CAWC	Cal-American Water Company
CCF	Hundred Cubic Feet of Water
CEQA	California Environmental Quality Act
CFS	Cubic Feet Per Second
CII	Commercial, Industrial and Institutional
CIMIS	California Irrigation Management Information System
COC	Constituents of Concern
CRA	Colorado River Aqueduct
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CVWD	Coachella Valley Water District
CWC	California Water Code
DDW	Division of Drinking Water
DMM	Demand Management Measure
DOF	Department of Finance
DWR	Department of Water Resources
DWCV	Desert Water Agency/Coachella Valley Water District
ECLWRF	Edward C. Little Water Recycling Facility
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EOP	Emergency Operation Plan
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ET	Evapotranspiration
ETc	Actual Evapotranspiration
Eto	Evapotranspiration From a Standardized Grass Surface
Etr	Evapotranspiration From a Standardized Alfalfa Surface
Fe	Iron
FY	Fiscal Year
GIS	Geographic Information Systems
GPCD	Gallons Per Capita Per Day
GPD	Gallons Per Day
GPF	Gallons Per Flush
GPM	Gallons Per Minute

GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GSWC	Golden State Water Company
HET	High Efficiency Toilet
HCD	Department of Housing and Commercial Development
HPSP	Hollywood Park Specific Plan
ICS	Intentionally Created Surplus
IID	Imperial Irrigation District
IAWP	Interim Agricultural Water Program
IRP	Integrated Resources Plan
ITP	Independent Technical Panel
JWCP	Joint Water Pollution Control Board
Kc	Crop Coefficient
L2L	Laundry to Landscape
LAA	Los Angeles Aqueduct
LACSD	Sanitation Districts of Los Angeles County
LADWP	Los Angeles Department of Water and Power
LAX	Los Angeles International Airport
LIEP	Landscape Irrigation Efficiency Program
M&I	Municipal and Industrial
MAF	Million Acre Feet
MCL	Maximum Contaminant Level
Metropolitan	Metropolitan Water District of Southern California
MGD	Million Gallons per Day
Mg/L	Milligrams Per Liter
Mn	Manganese
MOU	Memorandum of Understanding
MWELO	Model Water Efficient Landscape
ND	Not Detectible
NDMA	N-Nitrosodimethylamine
NL	Notification Level
NMCL	No Maximum Contaminant Level
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OWDDF	Ocean Water Desalination Demonstration Facility
PCI/L	Picocuries per Liter
PMCL	Primary Maximum Contaminant Level
PPCP	Pharmaceuticals and Personal Care Products
PVID	Palo Verde Irrigation District
PW	Potable Water
QMCP	Quagga Mussel Control Program
QSA	Quantification Settlement Agreement
RHNA	Regional Housing Needs Assessment
RDM	Robust Decision Making
RA	Replenishment Assessment

RO	Reverse Osmosis
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RUWMP	Regional Urban Water Management Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBESC	South Bay Environmental Services Center
SBCCOG	South Bay Cities Council of Governments
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SDCWA	San Diego County Water Authority
SF	Square Feet
SGMA	Sustainable Groundwater Management Act
SMCL	Secondary Maximum Contaminant Level
SNWA	Southern Nevada Water Authority
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	Thousand Acre Feet
TDS	Total Dissolved Solids
ULF	Ultra-Low Flow
USBR	U.S. Bureau of Reclamation
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
WBMWD	West Basin Municipal Water District
WCGB	West Coast Groundwater Basin
WRCC	Western Regional Climate Center
WRD	Water Replenishment District of Southern California
WQCP	Water Quality Control Program
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WSDM	Water Surplus and Drought Management
WSA	Water Service Area
WSO	Water Systems Optimization
WUCA	Water Utility Climate Alliance
WW	Wastewater

1 INTRODUCTION AND OVERVIEW

1.1 BACKGROUND AND PURPOSE

The City of Inglewood has prepared the 2015 update of its Urban Water Management Plan to fulfill the requirements outlined in the California Urban Water Management Planning Act (1983), as amended, and the Water Conservation Bill of 2009.

1.2 URBAN WATER MANAGEMENT PLANNING AND THE CALIFORNIA WATER CODE

This report has been prepared in compliance with Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act), which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984. This Act requires that "every urban water supplier shall prepare and adopt an urban water management plan" (Water Code § 10620(a)). An "urban water supplier" is defined as a supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually (Water Code § 10617).

These plans must be filed with the California Department of Water Resources (DWR) every five years ending in 0 and 5 and submitted by December 31 of that year. However, the 2015 plans are due to be submitted to DWR by July 1, 2016. The Act's requirements include:

- Detailed evaluation of the supplies necessary to meet demands over at least a 20-year period, in five-year increments, for a single dry water year, in multi-year droughts, and during average year conditions;
- Documentation of the stages of actions an urban water supplier would undertake to address up to a 50% reduction in its water supplies;
- Description of the actions to be undertaken in the event of a catastrophic interruption in water supplies; and
- Evaluation of reasonable and practical efficient water uses, recycling, and conservation activities.

1.2.1 Changes in the Act Since 2010

Since 2010, several amendments have been made to the Act. The following is a summary of the significant changes in the Act that have occurred from 2010 to the present:

- Changes the deadline for water suppliers to submit their 2015 UWMPs to DWR by July 1, 2016 (Water Code § 10621(d)).
- Adds "distribution system water loss" to the list of past, present, and projected future water uses that the UWMP is to quantify to the extent that records are available and over the same 5-year increments described in Water Code § 10631(a).

(Water Code § 10631(e)(1)(J)). For the 2015 UWMP, the distribution system water loss must be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss must be quantified for each of the 5 years preceding the plan update. (Water Code § 10631(e)(3)(A)). The distribution system water loss quantification must be reported in accordance with a worksheet approved or developed by DWR through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association (AWWA) (Water Code § 10631(e)(3)(B)).

- If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area (Water Code § 10631(e)(4)(A)). To the extent that an urban water supplier reports the information described in § 10631(e)(4)(A), an urban water supplier shall do both of the following: (1) provide citations of the various codes, standards, ordinances, or transportation and land use plans used in making the projections; and (2) indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall note that fact (Water Code § 10631(e)(4)(B)).
- Requires plans by retail water suppliers to include a narrative description that addresses the nature and extent of each water demand management measure (DMM) implemented over the past 5 years. The narrative must describe the water DMMs that the supplier plans to implement to achieve its water use targets pursuant to Water Code § 10608.20 (Water Code § 10631(f)(1)(A)). The narrative must also include descriptions of the following water DMMs: water waste prevention ordinances, metering, conservation pricing, public education and outreach, programs to assess and manage distribution system real loss, water conservation program coordination and staffing support; and other DMMs that have a significant impact on water use as measured in gallons per capita per day (gpcd), including innovative measures, if implemented (Water Code § 10631(f)(1)(B).
- Requires plans by wholesale water suppliers to include a narrative description of metering, public education and outreach, water conservation program coordination and staffing support, and other DMMs that have a significant impact on water use as measured in gpcd, including innovative measures, if implemented, as well as a narrative description of their distribution system asset management and wholesale supplier assistance programs (Water Code § 10631(f)(2)).
- Adds the voluntary reporting in the UWMP of any of the following information: an estimate of the amount of energy used: (1) to extract or divert water supplies; (2) to convey water supplies to water treatment plants or distribution systems; (3) to treat water supplies; (4) to distribute water supplies through the distribution system; (5) for treated water supplies in comparison to the amount used for non-treated water supplies; and (6) to place water into or to withdraw water from storage; and (7) any other energy-related information the urban water supplier deems appropriate

(Water Code § 10631.2(a)). DWR included in its UWMP guidance a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems (Water Code § 10631.2(b))

- Requires urban water suppliers to submit plans or amendments to plans electronically and to include any standardized forms, tables, or displays specified by DWR (Water Code § 10644(a)(2)).

1.2.2 Senate Bill 7 of the Seventh Extraordinary Session of 2009, Water Conservation in the Delta Legislative Package

In addition to changes to the Act, the state Legislature passed Senate Bill 7 as part of the Seventh Extraordinary Session, referred to as SBx7-7, on November 10, 2009, which became effective February 3, 2010. This law was the water conservation component to the historic Delta legislative package, and seeks to achieve a 20% statewide reduction in urban per capita water use in California by December 31, 2020. This implements the Governor's similar 2008 water use reduction goals. The law requires each urban retail water supplier to develop urban water use targets to help meet the 20% goal by 2020, and an interim urban water reduction target by 2015.

The bill states that the legislative intent is to require all water suppliers to increase the efficiency of use of water resources and to establish a framework to meet the state targets for urban water conservation called for by the Governor. The bill establishes methods for urban retail water suppliers to determine targets to help achieve increased water use efficiency by the year 2020. The law is intended to promote urban water conservation standards consistent with the California Urban Water Conservation Council's (CUWCC) adopted best management practices.

An urban retail water supplier may update its 2020 urban water use target in its 2015 UWMP (Water Code § 10608.20(g)).

2 PLAN PREPARATION

2.1 BASIS FOR PREPARING A PLAN

Per CWC 10617, "urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems. The City of Inglewood is a public water supplier that meets the definition of an urban water supplier with 15,952 municipal water service connections and a total 9,554 acre-feet (AF) of water supplied to customers in their water service area in 2015. See Table 2-1.

Table 2-1: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Water Supplied 2015 (AF)
1	City of Inglewood	15,952	9,554

2.2 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

The City of Inglewood has developed an individual UWMP that reports solely on its service area; addresses all requirements of the California Water Code (CWC); and notifies and coordinates with appropriate regional agencies and constituents. See Table 2-2.

Table 2-2: Plan Identification

☑	Individual UWMP
☐	Regional UWMP (RUWMP)

2.3 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE

The City of Inglewood is a water retailer (as opposed to a water wholesaler). The City's 2015 UWMP has been prepared using calendar years (as opposed to fiscal years) and has been prepared using acre-feet (AF) as the units of water volume measure. See Table 2-3.

2.4 COORDINATION AND OUTREACH

Per CWC 10631(j), an urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available.

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

Table 2-3: Agency Identification	
Type of Agency	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
Units of Measure Used in UWMP	
Unit	AF

The City of Inglewood has provided West Basin Municipal Water District (WBMWD), the City's water wholesaler, with projected water use in accordance with CWC 10631 and has relied upon water supply information provided by WBMWD, as well as from the Metropolitan Water District of Southern California (Metropolitan) in preparing its 2015 UWMP.

Table 2-4: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
West Basin Municipal Water District

The intent of the 2015 UWMP is to focus on specific issues unique to the City's water service area. While some regional UWMP issues are introduced in this UWMP, more detailed regional information is presented in WBMWD's and Metropolitan's 2015 UWMPs.

Table 2-4A lists the entities that the City or Psomas coordinated with in the development of the City's 2015 UWMP. Information from the Final WBMWD and Metropolitan 2015 UWMPs, and the *"Guidebook to Assist Urban Water Suppliers to Prepare a 2015 Urban Water Management Plan"* prepared by DWR was utilized in preparing the City's 2015

UWMP. The City's water supply planning considers the programs of local and regional water agencies. This UWMP details the specifics as they relate to the City and its service area and will refer to Metropolitan, WBMWD, the Water Replenishment District of Southern California (WRD) and other agencies throughout.

Table 2-4A: City of Inglewood Coordination and Public Involvement

	Participated in UWMP preparation	Used Agency Data as an Information Resource	Sent Draft UWMP and/or Available to on City Website	Commented on Draft UWMP	Sent Notice of Public Hearing	Attended Public Hearing
City Water Division	x	x	x	x	x	x
City Planning Department	x	x	x	x	x	x
City Finance Department	x	x	x	x	x	x
City Clerk	x	x	x		x	x
DWR		x	x			
WBMWD		x	x			
Metropolitan		x	X			
WRD		x	X			
LACSD		x	X			
LA County			x		x	
GSWC			x			
CAWC			x			
General Public			x		x	x

The City relies on Metropolitan through WBMWD and WRD for its long-term water supply. Accordingly, the City's water supply planning is partially based on the policies, rules, and regulations of these three water agencies. Development of the City's UWMP was coordinated with WBMWD, which serves as the City's wholesaler of potable water received from Metropolitan, and recycled water it produces at its own treatment plant; WRD, which is responsible for managing, regulating, replenishing, and protecting the quality of the groundwater supplies within the region, and the Sanitation Districts of Los Angeles County (LACSD), which manages wastewater generated within the City of Inglewood.

The 2015 UWMP is intended to serve as a general, flexible, and open-ended document that is updated every five years (or more often if necessary) to reflect changes in the City's water supply trends, and conservation and water use efficiency policies. The 2015 UWMP

will be used by City staff to guide the water use and management efforts through the year 2020, when the 2015 UWMP will require an update.

3 SYSTEM DESCRIPTION

3.1 GENERAL DESCRIPTION

The City of Inglewood is located in southwest Los Angeles County approximately ten miles southwest of downtown Los Angeles and two miles east of Los Angeles International Airport (LAX) as shown on Figure 3-1. The City is bordered to the south by Hawthorne and to the east, north and west by portions of unincorporated Los Angeles County and the City of Los Angeles. The City encompasses approximately 9.14 square miles and is predominantly residential land use. Elevations in the City vary from approximately 65 to 200 feet above sea level.

The City of Inglewood has a five-member City Council comprised of the Mayor and four Council Members with members elected by registered voters to staggered four-year terms. The City Manager is appointed by the Mayor and City Council. Other City managerial positions are filled by the City Manager. The Public Works Director is responsible for the operation and management of the City's water system.

Inglewood was incorporated as a City on February 8, 1908, but the first water system was established in 1888 by the Centinela-Inglewood Land Company. Inglewood voted to acquire the water system from the Centinela-Inglewood Land Company in 1920, thereby creating a municipal water utility.

3.1.1 City Water System Description

3.1.1.1 Domestic (Potable) Water System

Early on and for many years after the City became a municipal water utility, the City's only source of water supply was local groundwater produced by City owned and operated wells. A water treatment plant and a water quality laboratory were added to the system in 1975.

The City of Inglewood became a member of the newly formed WBMWD in 1947. As a member of Metropolitan, WBMWD purchases wholesale potable water from Metropolitan that is imported from the Colorado River and the State Water Project (SWP), for sale to local retail water agencies including the City of Inglewood. The imported water is provided, in part, to supplement existing regional groundwater supplies in all areas of WBMWD and to provide a barrier, through injection wells, to seawater intrusion into the West Coast Groundwater Basin (WCGB).

In 2015, the City purchased approximately 80% of its potable water supply from WBMWD and produced approximately 20% of its potable water supply from the local groundwater basin via City owned and operated wells. However, as discussed in Chapter 6, the City is constructing a new well and rehabilitating existing wells to increase groundwater production.

Figure 3-1. City of Inglewood Location Map

2015 Urban Water Management Plan

The City's water system consists of the following major facilities and transmission/distribution piping:

- **Four Active Groundwater Wells:** Well Nos. 1, 2, 4 and 6
- **Raw Well Water Transmission Main:** Transmission main (12 inches to 18 inches to 27 inches in diameter) that transmits groundwater from the wells to the Sanford M. Anderson Water Treatment Plant
- **Sanford M. Anderson Water Treatment Plant:** Treats groundwater for the removal of iron and manganese with a treatment capacity of 8.64 mgd (6,000 gpm) and a clearwell capacity (to store treated water) of 500,000 gallons
- **Treatment Plant Effluent Pump Station:** One set of five vertical turbine pumps pump treated water into the Zone 3 or Zone 2 distribution systems or to the Morningside Reservoir Facility and a second set of five vertical turbine pumps pump treated water into the Zone 3 or Zone 2 distribution systems or to the North Inglewood Reservoir Facility
- **Treated Water Transmission Mains:** One 24-inch transmission main transmits treated water from the effluent pump station dedicated to the Morningside Reservoir Facility and a second 24-inch transmission main transmits treated water from the effluent pump station dedicated to the North Inglewood Reservoir Facility
- **North Inglewood Reservoir Facility:** 4.6 MG covered, underground, concrete water storage reservoir and associated pump station (with four pumps) to pump water from the reservoir into the Zone 1, Zone 2 and Zone 3 distribution systems
- **Morningside Reservoir Facility:** 16.0 MG above-ground, concrete, water storage reservoir and associated pump station (with 10 pumps) to pump water from the reservoir into the Zone 1, Zone 2 and Zone 3 distribution systems. The Morningside Reservoir Facility is currently out of service due to reservoir structural issues
- **Imported Water Connections:** Metropolitan imported water is delivered to the City via service connections WB-17 and WB-38, each with a rated capacity of 4,400 gpm
- **Emergency Water Connections:** The City has six emergency water connections with Golden State Water Company (GSWC) and two emergency water connections with the Los Angeles Department of Water and Power (LADWP)
- **Transmission and Distribution Piping:** There are 156 miles of piping in the water system ranging in diameter from 2 to 42 inches

3.1.1.2 Recycled (Non-Potable) Water System

The City purchases recycled water from WBMWD. The WBMWD recycling plant located in El Segundo, the Edward C. Little Water Recycling Facility (ECLWRF), provides tertiary treatment to secondary-treated wastewater received from the City of Los Angeles' Hyperion Wastewater Treatment Plant to produce recycled water that meets California Title 22 treatment requirements. WBMWD produces five different qualities of recycled

water including: 1) Disinfected Tertiary Water, 2) Nitrified Water, 3) Softened Reverse Osmosis Water, 4) Pure Reverse Osmosis Water, and 5) Ultra-Pure Reverse Osmosis Water.

The City currently has 18 service connections to the WBMWD recycled water system including Inglewood Park Cemetery (the City's largest recycled water user), Centinela (Vincent) Park and other City parks, Hollywood Park, Inglewood Unified School District facilities, and Caltrans right-of-way. City purchases of recycled water have averaged 694 AFY since 2008, constituting approximately 6.5% of its total water supply.

3.2 SERVICE AREA BOUNDARY MAPS

The City itself is comprised of three water service areas. As shown on Figure 3-2, the City of Inglewood serves water to the largest area of the City; Golden State Water Company (GSWC) serves water to a portion of the City in the south; and Cal-America Water Company (CAWC) serves water to a small area in the northwest part of the City. The City's water service area (WSA) comprises 79.4% of the City's 5,825 acres of land (4,625 acres). GSWC's water service area consists of 1,113 acres (19.1%) and only 27 acres (less than 1%) is in the CAWC water service area. The City's WSA is the subject of this UWMP.

3.3 SERVICE AREA CLIMATE

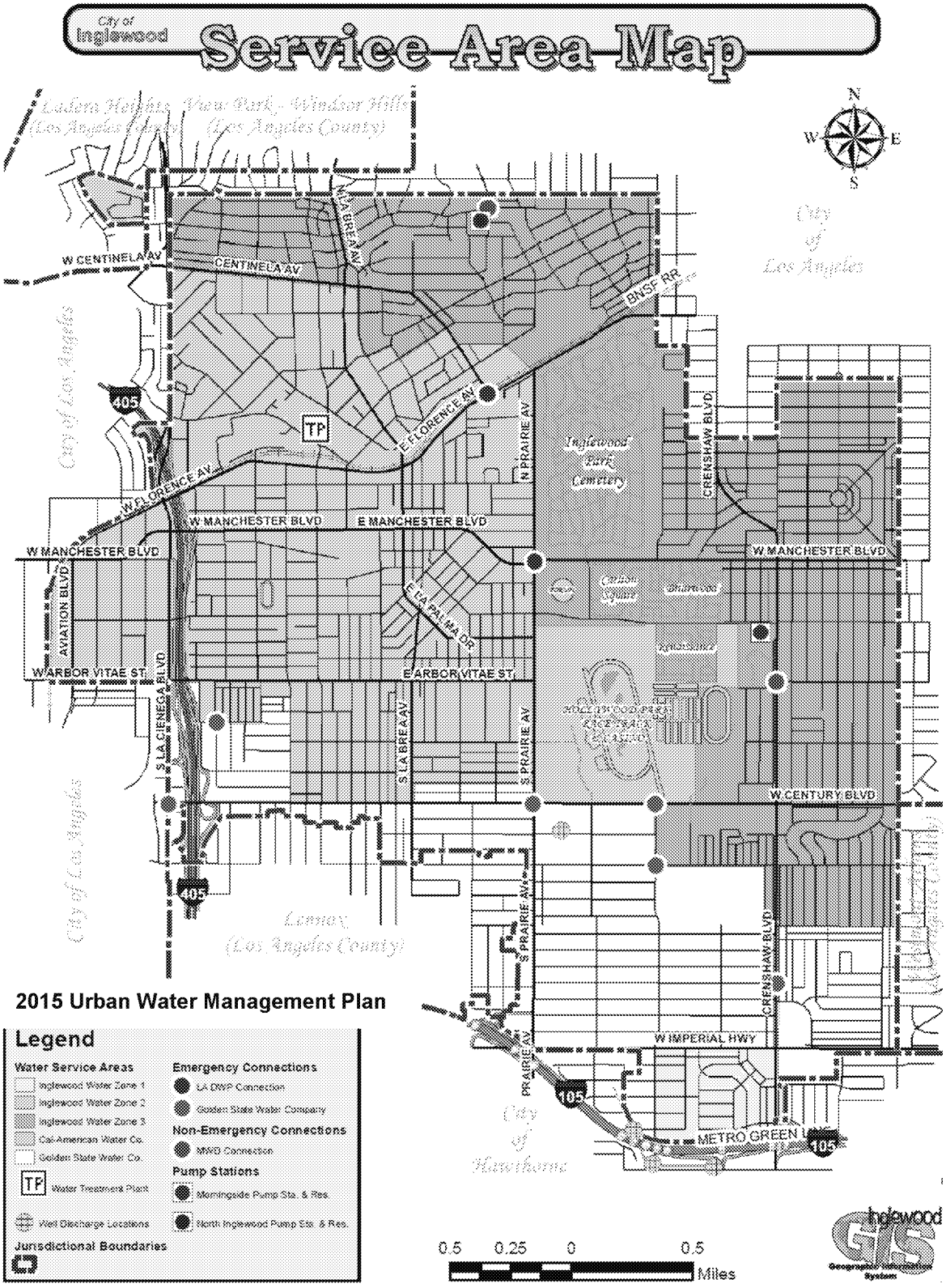
The City has a Mediterranean climate with moderate, dry summers and cool winters that receive the majority of rainfall. The climate for the City is consistent with coastal Southern California. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

As shown in Table 3-1A, the average maximum temperature of 76.3°F occurs in August, and the average minimum temperature of 47.5 °F occurs in January. The average annual maximum temperature for the City is 70.1°F and the average annual minimum temperature is 55.3 °F. Approximately 93% of the City's average annual rainfall of 12.02 inches occurs between November and March (5 month period).

Evapotranspiration (ET) is the loss of water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indication of how much water crops, lawn, garden, and trees need for healthy growth and productivity.

For ET to take place, the following conditions have to be met. First, water has to be present at the surface. Second, there must be some form of energy to convert the liquid water into a water vapor. Third, there must be a mechanism to transport the water vapor away from the evaporating surface.

Figure 3-2. City of Inglewood Water Service Areas



Precipitation and irrigation are the two primary sources of water that plants use. Plant leaves and soil surfaces temporarily retain some part of the water applied to the field. This part is readily available for evaporation. The remaining part infiltrates into the soil. Plants extract the infiltrated water through their roots and transport it up to their leaves for photosynthesis, a process by which plants produce glucose (sugar).

Table 3-1A: Historical City Climate Characteristics

Month	Standard Average ETo[a] (inches)	Average Rainfall[b] (inches)	Daily Max Temperature[b] (degrees F)	Daily Min Temperature[c] (degrees F)
January	2.33	2.65	65.2	47.5
February	2.52	2.67	65.3	48.9
March	3.70	1.85	65.3	50.5
April	4.70	0.77	67.4	53.0
May	5.14	0.17	69.1	56.4
June	5.24	0.05	71.9	59.7
July	5.62	0.02	75.1	62.9
August	5.57	0.07	76.3	63.8
September	4.31	0.16	76.0	62.6
October	3.40	0.39	73.6	58.5
November	2.48	1.40	70.2	52.3
December	2.15	1.82	65.9	47.9
Annual	47.16	12.02	70.1	55.3

a) Standard Average ETo from California Irrigation Management Information System (CIMIS) Station 99, Santa Monica, CA. Station 99 is CIMIS station closest to the City of Inglewood; Average for 12/11/1992 through 1/27/2016.

b) Data obtained from Western Regional Climate Center (WRCC), Desert Research Institute, Reno, Nevada (http://www.wrcc.dri.edu/cgi-bin/cliRECtM.pl?ca9152); WRCC program administered by the National Oceanic and Atmospheric Administration (NOAA); data extracted from monitoring Station 045114 at Los Angeles International Airport, Average 01/01/1936 through 1/20/2015.

Many factors affect ET including:

- Weather parameters such as solar radiation, air temperature, relative humidity and wind speed;
- Soil factors such as soil texture, structure, density and chemistry; and
- Plant factors such as plant type, root depth, foliar density, height and stage of growth.

Although ET can be measured using such devices as lysimeters, estimating ET using analytical and empirical equations is a common practice because measurement methods are expensive and time consuming. Most ET equations were developed by correlating measured ET to measured weather parameters that directly or indirectly affect ET. Since there are so many factors affecting ET, it is extremely difficult to formulate an equation

that can produce estimates of ET under different sets of conditions. Therefore, the idea of a reference crop evapotranspiration was developed by researchers. Reference ET is the ET rate of a reference crop expressed in inches or millimeters.

Reference crops are either grass or alfalfa surfaces whose biophysical characteristics have been studied extensively. ET from a standardized grass surface is commonly denoted as ETo whereas ET from a standardized alfalfa surface is denoted as ETr. The American Society of Civil Engineers (ASCE) recommends the use of ETos and ETrs, respectively, where "s" stands for standardized surface conditions. The logic behind the evapotranspiration idea is to set up weather stations on standardized reference surfaces for which most of the biophysical properties used in ET equations are known. ET from such surfaces can then be estimated using these known parameters and measured weather parameters. Then a crop factor, commonly known as the "crop coefficient" or "Kc" is used to calculate the actual evapotranspiration (ETc) for a specific crop in the same microclimate as the weather station site.

The California Irrigation Management Information System (CIMIS), Department of Water Resources, Office of Water Efficiency is using well-watered actively growing closely clipped grass that is completely shading the soil as a reference crop at most of its over 130 weather stations. Therefore, reference evapotranspiration is mostly referred to as ETo on the CIMIS website, although there are a few notable exceptions with ETr. There are many theoretical and empirical equations around the world to estimate ETo. The choice of any one method depends on the accuracy of the equation under a given condition and the availability of the required data. For reference surfaces with known biophysical properties, the main factors affecting ETo include solar radiation, relative humidity/vapor pressure, air temperature and wind speed. Therefore ETo can be estimated quite accurately using a model (a series of mathematical equations).

The monthly average ETo data shown in Table 3-1A has been extracted from the CIMIS Santa Monica station (#99), which is the closest station to Inglewood (located near Franklin Street approximately 2,000 feet northwest of Wilshire Boulevard in Santa Monica). This station was activated on December 11, 1992. As shown in Table 3-1A, the average annual evapotranspiration (ETo) is 47.16 inches.

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

3.4.1 Service Area Population

As shown in Figure 3-2, the City's WSA comprises 79.4% of the City of Inglewood in terms of land area with GSWC and CAWC serving water to the remaining land area of the City. The City's WSA, which is the subject of this UWMP, has a population that is less than the City's population. For the preparation of the 2015 UWMP, the DWR Population Tool was utilized to estimate the City's water service area population from 1990 through 2010 and for 2015 based on inputting single-family and multi-family residential water service connections for the years 2010 and 2015, along with the water service area boundary in electronic format. Population Tool worksheets are included in Appendix C.

Historical and current City population as reported by the Census (2000 and 2010) and the DOF (2005 and 2015) is shown in Table 3-1B compared with historical and current population for the City's water service area (WSA) as determined by the DWR Population tool. As shown, the population of the water service area ranged from 73.1% to 77.6% of the City population.

Table 3-1B: Population – Historical and Current

Area	2000	2005	2010	2015
City[a]	112,580	112,417	109,673	115,966
City's WSA [b]	87,090	86,095	85,100	84,790
WSA/City %	77.4	76.6	77.6	73.1

(a) Reported census and/or DOF data
(b) DWR Population Tool

Projected City populations as estimated by the City's Planning Department, which are consistent with Southern California Association of Governments (SCAG) population projections in their 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS), were multiplied by a factor of 0.75 to estimate projected populations for the City's WSA, which are shown in Table 3-1. The water service area population is projected to increase from 84,790 in 2015 to 96,384 in 2040, which is a 13.7% increase.

Table 3-1: City's WSA Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040	% Increase[a]
	84,790	89,890	93,650	94,561	95,472	96,384	13.7

(b) Relative to 2015

The population increase of 5,100 people between 2015 and 2020 is primarily attributable to the Hollywood Park redevelopment project, termed "City of Champions Revitalization Project", which is discussed in Section 3.4.3. The buildout population for this development of 7,500 people is estimated to occur by 2025.

3.4.2 Water-Use-Related Demographics

Of the 15,952 City WSA water service connections in 2015, 13,669 were residential connections (85.6 %). Of the 13,669 residential connections, 12,191 were single family (89.2%) and 1,478 were multi-family (10.8%). City WSA land use is shown in Table 3-2. The predominant land use is residential at 44.7% of total WSA land use. Single-family residential land use makes up 18.1% of total WSA land use and commercial land use is 19.8%. At 237.7 acres, the Hollywood Park Specific Plan makes up 5.1% of the total WSA land use.

Table 3-2: City WSA Land Use			
Zoning Code	Land Use Category per City Zoning	City Service Area	% of Total
	Residential		
R-1	Single-Family Residential	848.5	18.1%
R-1.5	Limited Two-Family Residential	4.0	0.1%
R-1Z	One-Family Residential	5.5	0.1%
R-2	Limited Multi-Family Residential	214.6	4.6%
R-2A	Limited Multi-Family Residential	235.9	5.0%
R-3	Multiple-Family Residential	651.5	13.9%
R-4	Multiple-Family Residential	54.6	1.2%
R-M	Residential Medical	77.8	1.7%
Subtotal	Residential	2,092.5	44.7%
	Specific Plan		
HPSP	Hollywood Park Specific Plan	237.7	5.1%
	Commercial		
C-1	Limited Commercial	59.4	1.3%
C-2	General Commercial	578.9	12.4%
C-2A	Airport Commercial	12.1	0.3%
C-3	Heavy Commercial	77.3	1.6%
C-R	Commercial Recreation	176.0	3.8%
C-S	Commercial Service	24.5	0.5%
Subtotal	Commercial	928.2	19.8%
	Public		
C-C	Civic Center	47.9	1.0%
	Manufacturing		
M-1	Light Manufacturing	242.4	5.2%
M-1L	Limited Manufacturing	20.3	0.4%
M-2	Heavy Manufacturing	0.0	0.0%
Subtotal	Manufacturing	262.7	5.6%
	Open Space		
O-S	Open Space	94.1	2.0%
	Other		
S-2	Special Cemetery	294.1	6.3%
P-1	Parking	64.7	1.4%
T-C	Transportation Corridor	18.8	0.4%
	405 Freeway	37.0	0.8%
	Local Streets &Alleys	607.0	13.0%
Subtotal	Other	1,021.5	21.8%
	Total	4,684.5	100.0%

In 2015, the number of people per dwelling unit inside the City was 3.03, according to DOF E-5 City/County Population and Housing Estimates, January 1, 2015. Of the 38,643 housing units inside the City limits in 2015, 15,863 (41.1%) were 5-unit or more residences; 14,754 (38.2%) were single-detached houses; 5,503 (14.2%) were 2- to 4-unit residences; 2,314 (0.6%) were single-attached homes; and 209 were mobile homes. The vacancy rate in 2015 was 2.2%.

The water service area is built out, but there are infill and re-development projects on-going and planned for the future. The major redevelopment project in the City and in the City's WSA is the Hollywood Park redevelopment project.

3.4.3 Hollywood Park Redevelopment

Hollywood Park, located at 1050 South Prairie Avenue, was developed as a 238-acre site in 1938 with two main structures: a racetrack/grandstand and the Pavilion/Casino gaming facility. A specific plan and an environmental impact report (EIR) were prepared in 2009 to redevelop the site that included the demolition of the racetrack/grandstand; the rehabilitation of the 120,000 square-foot Pavilion/Casino; and construction of a new mixed-use development containing approximately 2,995 dwelling units, 620,000 square feet (sf) of retail space, 75,000 sf of office/commercial space, a 300-room hotel, 10,000 sf of community serving uses, and a 25-acre park system with passive and active recreational opportunities. On June 3, 2009, the Inglewood City Council certified the Final Environmental Impact Report and on July 8, 2009, approved the Hollywood Park Specific Plan (HPSP) and other entitlements associated with the project.

Construction on the Hollywood Park redevelopment, termed "Hollywood Park Tomorrow", began in 2012. On February 24, 2015, the City Council approved changes to the previously approved specific plan to include an 80,000-seat NFL stadium and a 6,000-seat music venue. The remaining mixed-use redevelopment plan was also modified slightly and now includes 890,000 sf of regional and entertainment retail; 780,000 sf office space; a 300-room hotel; 2,123 apartments, 111 detached single-family homes and 266 townhomes; and major infrastructure improvements, including 25 acres of improved public parks. The Hollywood Park redevelopment is now termed "City of Champions Revitalization Project."

The site is still under construction and only the Pavilion/Casino gaming facility is in operation at this time. Most of the existing water use is for construction. It is estimated that Hollywood Park will be approximately 70% developed by 2020 and 100% developed by 2025.

4 SYSTEM WATER USE

4.1 RECYCLED VERSUS POTABLE AND RAW WATER DEMAND

The City obtains its potable water supply from two sources: imported surface water purchased from Metropolitan through WBMWD, and local groundwater produced from the West Coast Groundwater Basin (WCGB) via City-owned and operated wells. The imported water is treated by Metropolitan, and the groundwater is treated at the City's Sanford M. Anderson Water Treatment Plant for the removal of iron and manganese. Treatment includes disinfection. The groundwater and imported water supplies are blended prior to entering the City's water distribution system.

In 2015, the City purchased approximately 80% of its potable water supply from WBMWD and produced approximately 20% of its potable water supply from the local groundwater basin via City owned and operated wells. However, as discussed in Chapter 6, the City is constructing a new well and rehabilitating existing wells to increase groundwater production.

The City purchases recycled water from WBMWD. The City currently has 18 service connections to the WBMWD recycled water system. City purchases of recycled water have averaged 721 AFY since 2005, which is approximately 6% of its total water supply.

4.2 WATER USES BY SECTOR

Historical water service connections by customer sector are shown in Table 4-1A. The total number of water service connections increased only by 2.0% between 2010 and 2015. Residential (single-family plus multi-family) connections account for approximately 86% of total water service connections.

Table 4-1A: Historical City Water Service Connections

Customer Sector	2010	2015
Single Family	12,383	12,191
Multi Family	1,468	1,478
Commercial	1,320	1,791
Industrial	73	65
Municipal	133	130
Fire	261	297
	15,638	15,952

Historical metered and billed water use by customer sector is shown in Table 4-1B. Total water use including unaccounted-for (lost or non-revenue) water decreased from 11,634 AFY in 2005 to 9,906 AFY in 2010 (14.9% decrease); and to 8,827 AFY in 2015 (24.1%

decrease relative to 2005). Per-capita water use also decreased and is discussed in Section 4.4. System water loss has decreased from 7.9% in 2005 to 6.3% in 2015 and is discussed in Section 4.3. Note that water loss in Table 4-1B includes treatment plant losses and unbilled & unmetered authorized consumption, i.e. hydrant flushing and other water system maintenance, etc. Residential water use has accounted for approximately 70% of total system water use.

Table 4-1B: Historical Potable Water Use and Water Loss (AFY)

	2005 Water Use/ Supply	2010 Water Use/ Supply	% Change (2005-2010)	2015 Water Use/ Supply	% Change (2010-2015)	% Change (2005-2015)
Residential PW Use	7,902	7,101	-10.1%	6,002	-15.5%	-24.0%
Population	86,095	85,100	-1.2%	84,790	-0.4%	-1.5%
Residential Per-Capita (gpcd)	81.9	74.5	-9.1%	63.2	-15.2%	-22.9%
Commercial PW Use	2,589	2,533	-2.2%	2,144	-15.4%	-17.2%
Industrial PW Use	69	45	-34.8%	48	6.7%	-30.4%
Municipal PW Use	152	270	77.6%	79	-70.7%	-48.0%
Fire PW Use	5	6	20.0%	2	-66.7%	-60.0%
Unaccounted-for PW Use	917	(49)	-105.3%	552	-	-39.8%
Total Potable Water Use	11,634	9,906	-14.9%	8,827	-10.9%	-24.1%
Total Per-Capita (gpcd)	120.6	103.9	-13.9%	92.9	-10.6%	-23.0%
Potable Water Supply	11,634	9,906	-14.9%	8,827	-10.9%	-24.1%
Potable Water Loss[(a)]	917	(49)		552		
Potable Water Loss %	7.9%	-0.5%		6.3%		

(a) Includes treatment plant losses and unbilled & unmetered authorized consumption. In 2015, water loss equals 3.8% when discounting treatment plant losses and unbilled & unmetered authorized consumption

4.2.1 Hollywood Park Water Demands

The proposed "New Project Alternative" for the Hollywood Park redevelopment (City of Champions Revitalization Project) is a mixed-use development that includes a stadium, performance venue, various commercial land uses, and both high and low-density residential land uses. Other than for single-family residential, irrigation water demands will be met with recycled water and not domestic water.

The development will include 890,000 square feet (sf) of regional and entertainment retail; 780,000 sf office space; a 300-room hotel; 2,123 apartments, 111 detached single-family

homes; and 266 townhomes; and major infrastructure improvements, including 25 acres of improved public parks. A seating capacity of 80,000 is planned for the stadium. It is anticipated that the stadium will host approximately 10 NFL games annually and will be used for another eight large events and 20 medium events at seatings of 50,000 and 10,000, respectively. Estimated buildout annual potable water demand for Hollywood Park by land use category is shown in Table 4-1C.

Single-family residences will be irrigated with potable water, but all other development irrigation will be met with recycled water.

The site is still under construction and only the existing Pavilion/Casino gaming facility is in operation at this time. Most of the existing water use is for construction. It is estimated that Hollywood Park will be 70% developed by 2020 and 100% developed by 2025. Potable and recycled water demands are included in all City water service area demand projections.

Table 4-1C: Projected Hollywood Park Potable Water Demands

Hollywood Park Land Use	Annual PW Demand (gpd)	Annual PW Demand (AFY)
Stadium	4,400	5
Performance Venue	7,800	9
Residential	401,665	450
Non-Residential	289,710	325
Total	703,575	789

City water system demands for potable (drinking) water for 2015 are shown in Table 4-1. The City purchases treated imported water from Metropolitan through WBMWD and produces groundwater from the local WCGB, which is then treated at the City's water treatment plant. City water use by customer sector plus system water losses represent 100% of the water demands for the City's water system.

Projected City water demands for the planning period (2020-2040) by water use sector and water loss are shown in Table 4-2. The methodology for developing these projected demands is presented in Section 4-4. Projected water demands for the City consisting of potable water demands and recycled water demands are shown in Table 4-3. Recycled water demands are discussed in Section 6.5.

4.3 DISTRIBUTION SYSTEM WATER LOSSES

In accordance with CWC 10631, distribution system water loss is to be quantified for the most recent 12-month period available for the 2015 urban water management plan update and is to be reported in accordance with a worksheet approved or developed by DWR

through a public process. The water loss worksheet is to be based on the water system balance methodology developed by the American Water Works Association (AWWA).

Table 4-1: Demands for Potable Water – Actual

Use Type	2015 Actual		
	Additional Description	Level of Treatment When Delivered	Volume (AFY)
Other	Total Residential	Drinking Water	6,002
Commercial	-	Drinking Water	2,144
Industrial	-	Drinking Water	48
Institutional/Governmental	Municipal	Drinking Water	79
Other	Fire water	Drinking Water	2
Other[(a)]		Drinking Water	109
Other[(b)]	-	Drinking Water	104
Losses[(c)]	-	Drinking Water	339
Total			8,827

(a) Authorized but unmetered and unbilled water use for flushing hydrants and other water system maintenance estimated at 1.25% of billed water use
(b) Treatment plant losses
(c) Losses not including authorized but unmetered water use and treatment plant losses

Table 4-2: Demands for Potable Water - Projected

Use Type	Projected Water Use				
	2020	2025	2030	2035	2040
Other - Total Residential	6,888	7,015	6,942	6,868	6,793
Commercial	2,461	2,506	2,480	2,453	2,427
Industrial	55	56	56	55	54
Institutional/Governmental	91	92	91	90	89
Other[(a)]	2	2	2	2	2
Losses[(b)]	634	645	638	632	625
Total	10,131	10,317	10,209	10,100	9,991

(a) Fire hydrant water
(b) Includes authorized but unmetered water use and treatment plant losses

The AWWA Water Audit Software Version 5.0 was used to quantify distribution water loss for the City for calendar year 2015. As shown in Table 4-4, a water loss volume of 339.0 AFY was calculated, which is 3.9% of the water supplied into the distribution system

assuming 1.25% of authorized consumption (109.0 AFY) was unbilled and unmetered water use, i.e. water typically used for flushing water mains and other water system maintenance, etc. AWWA Water Audit worksheets are included in Appendix D.

Table 4-3: Total Water Demands

	2015	2020	2025	2030	2035	2040
Potable Water Demand	8,827	10,131	10,317	10,209	10,100	9,991
Recycled Water Demand	727	1,060	1,060	1,060	1,060	1,060
Total Water Demand	9,554	11,191	11,377	11,269	11,160	11,051

Table 4-4: 12 Month Water Loss Audit Reporting

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (AF)
(01/2015)	339.0

A project was conducted as part of a greater effort, sponsored by Southern California Edison (SCE), to better understand the relationship between water loss control and direct and embedded energy savings. Five local governments in the SCE service territory, including the City of Inglewood, were selected as part of this pilot program. As part of the study, Water Systems Optimization (WSO) worked with the City to accurately quantify water loss volumes by conducting a thorough water audit. In parallel, WSO performed leak detection at Inglewood. A water balance was established for the City for the audit period July 1, 2012 – June 30, 2013 (FY 2013). Some of the key findings and recommendations for the City of Inglewood are discussed in Section 9.2.5.

The City has an ongoing water pipeline replacement program. Between FY 2010 and FY 2014, the City replaced 35,600 linear feet of pipe at a capital cost of $6.0 million.

4.4 ESTIMATING FUTURE WATER SAVINGS

In September 2014, two legislative bills amending sections of the Act were approved and chaptered: AB 2067 and SB1420. Key among the changes to existing statutes was the addition of CWC Section 10631(e)(4). This specific addition provides the option for urban water suppliers to reflect its and its customer's efficiency efforts as part of its future demand projection. The new statutes added the following to CWC Section 10631(e):

> *(4) (A): If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.*

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.
(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

4.4.1 Reduced City Water Use Since 2005

Through the implementation of City water conservation ordinances and measures discussed in Chapter 9, and as shown in Table 4-1B, total City per-capita water use has decreased 10.6% since 2010 and 23.0% since 2005; and residential per-capita water has decreased 15.2% since 2010 and 22.9% since 2005.

In April 2015, Governor Jerry Brown issued Executive Order B-29-15 requiring the State Water Resources Control Board to implement measures to cut the State's overall water usage by 25% due to the continuing drought. The executive order mandates a 25% reduction in supply to California's approximately 400 water control agencies and requires water agencies and cities to reduce water use 25% (on average) below 2013 levels by the end of February 2016, with usage reported to the State by water suppliers. Cities and water agencies were assigned various reduction goals, and the City of Inglewood's reduction goal was originally set at 12% and was reduced to 11% in February 2016 after the City received a climate consideration.

City water use has decreased a cumulative 15.7% for the first twelve recording months (June 2015 through May 2016) relative to year 2013 water usage in response to the City's conservation goal set by the State, which has been extended to October 2016 or as long as the drought continues.

On May 9, 2016 Governor Brown issued Executive Order B-37-16 that builds on temporary statewide emergency water restrictions to establish longer-term water conservation measures, including permanent monthly water use reporting, new permanent water use standards in California communities and bans on clearly wasteful practices. Through a public process and working with partners such as urban water suppliers, local governments and environmental groups, DWR and the SWRCB will develop new water use efficiency targets as part of a long-term conservation framework for urban water agencies. These targets go beyond the 20% reduction in per capita urban water use by 2020 that was embodied in SBx7-7, and will be customized to fit the unique conditions of each water supplier.

4.4.2 Reduced Future City Water Use due to Existing and Future Conservation Measures

As shown in Table 4-1B, through the implementation of City water conservation ordinances and measures discussed in Chapter 9, total per-capita City water use has significantly dropped from 120.6 gpcd in 2005 to 103.9 gpcd in 2010 to 92.9 gpcd in 2015 (a reduction of 23.0% since 2005). Residential per-capita City water use has also significantly dropped from 81.9 gpcd in 2005 to 74.5 gpcd in 2010 to 63.2 gpcd in 2015 (a reduction of 22.9% since 2005).

It is not known how long the current drought will last or when new droughts will start and end in the future. However, many of the water conservation measures already implemented and being implemented by City customers such as turf removal, conversion to drought resistance landscapes, conversion to more efficient irrigation systems and ET-based irrigation controllers, retrofits to high efficiency clothes washers and toilets, implementation of weather-based irrigation controllers, etc. will have permanent effects on water use (reduction) in the future.

It is anticipated that once the drought ends, water use may increase to some degree, and per-capita water use will increase some relative to 2015 water use. However, it is also anticipated that a great deal of water conservation will remain due to permanent measures that have already been implemented for exiting City residences and other development.

As shown in Table 4-5A, it is estimated in this UWMP that total City water system per-capita water use will increase from 92.9 gpcd in 2015 to 101.1 in 2020 (approximately a 8.8% increase) for existing residences and development after the end of the drought, which is similar to the water use in 2010, and with a water loss of 6.0% (similar to the 6.3% loss in 2015). However, it is estimated that water conservation retrofits will continue for existing houses and development as aged plumbing and irrigation appurtenances are replaced over time, and that per-capita water use will decrease to 92.5 gpcd in 2040 (a reduction of approximately 8.5% relative to 2020). Water loss (including treatment plant losses and authorized but unmetered water use) is estimated to remain at 6.0% for existing development through 2040.

However, more significant future per-capita water use will occur for the City due to new building codes and landscape ordinances for new residential developments compared with existing residential land use. California's newly adopted green building code will have a direct impact on new home building and water conservation in the State. The new code aims to cut indoor water consumption by at least 20%, primarily through more efficient indoor water fixtures. For a three-bedroom house, the savings is estimated to be about 10,000 gallons of water per year, on average.

The California Green Building program also includes outdoor water conservation by reducing the area devoted to high-irrigation lawns and plants, emphasizing natural drought-tolerant plantings, and installing irrigation controls that respond to local weather conditions. This is consistent with the new Model Water Efficient Landscape Ordinance (MWELO), which was adopted by the State on July 15, 2015 and was adopted by the City

on December 1, 2015, by default.

Table 4-5A: Historical & Projected City Per-Capita Water Use					
	2005	2010	2015	2020	2040
Existing Households					
Residential Per-Capita (gpcd)	81.9	74.5	63.2	69.0	63.0
CII Per-Capita[a] (gpcd)	29.2	29.9	23.9	26.0	24.0
Water Loss Per-Capita [b](gpcd)	9.5	-0.5	5.8	6.1	5.5
Total Per-Capita (gpcd)	120.6	103.9	92.9	101.1	92.5
New Households					
Residential Per-Capita (gpcd)	-	-	-	65.0	65.0
CII Per-Capita (gpcd)	-	-	-	22.0	22.0
Water Loss Per-Capita (gpcd)	-	-	-	5.1	5.6
Total Per-Capita (gpcd)	-	-	-	92.1	92.6

(a) Commercial, industrial, institutional, municipal and fire per-capita water use
(b) Water loss was 6.3% in 2015; and is estimated to be 6.0% and ranging from 5.5% (2020) to 6.0% (2040) in the future for existing & new development, respectively.

As shown in Table 4-5A, total per-capita water use for new housing and development is estimated to range from 92.1 gpcd in 2020 to 92.6 gpcd in 2040. A residential per-capita water use of 65.0 gpcd is estimated for the planning period. Future commercial, industrial, and institutional (CII) per-capita water use is estimated at 22.0 gpcd and water loss for new developments is estimated to range from 5.5% in 2020 to 6.0% in 2040, with the slight increase accounting for aging of new facilities.

Based on per-capita water use developed for existing and new housing and other development in Table 4-5A, projected City water demands were developed and are shown in Table 4-5B. As shown, total water use is estimated to increase from 8,826 AFY in 2015 to 9,991 AFY in 2040 (an increase of approximately 13.2%, which is primarily attributable to new development.

Total per-capita water use is estimated to decrease from 92.9 gpcd in 2015 to 92.5 gpcd in 2040. It should be noted that the 2020 through 2040 projections are based on normal, non-

drought years. These per-capita water use projections are less than the 2015 and 2020 SBx7-7 targets of 116.6 and 112.0 gpcd, respectively, developed for the City in this UWMP as detailed in Chapter 5.

Table 4-5B: Projected City Water Demands

	2015	2020	2025	2030	2035	2040
Existing Households						
Population	84,790	84,750	84,938	85,125	85,313	85,500
Total Per-Capita Water Use (gpcd)	92.9	101.1	99.0	96.8	94.7	92.5
Water Use (AFY)	8,826	9,600	9,417	9,233	9,047	8,861
New Households						
Population	0	5,140	8,712	9,436	10,159	10,884
Total Per-Capita Water Use (gpcd)	0	92.1	92.2	92.4	92.5	92.6
Water Use (AFY)	0	530	900	976	1,053	1,129
Total Per-Capita Water Use (gpcd)	92.9	100.6	98.3	96.4	94.4	92.5
Total Water Use (AFY)	8,826	10,131	10,317	10,209	10,100	9,991

4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

For planning and funding purposes, the State Department of Housing and Community Development (HCD) categorizes households into five income groups based on the County Area Median Income (AMI):

- Extremely Low Income — up to 30% of AMI
- Very Low Income - 31 to 50% of AMI
- Low Income - 51 to 80% of AMI
- Moderate Income - 81 to 120% of AMI
- Above Moderate Income — greater than 120% of AMI

Combined, extremely low, very low, and low income households are often referred to as lower income household.

State Housing Element law requires that a local jurisdiction accommodate a share of the region's projected housing needs for the planning period. This share, called the Regional Housing Needs Allocation (RHNA), is important because State law mandates that a jurisdiction provide sufficient land to accommodate a variety of housing opportunities for all economic segments of the community. Compliance with this requirement is measured by the jurisdiction's ability in providing adequate land with adequate density and appropriate development standards to accommodate the RHNA. The Southern California

Association of Governments (SCAG), as the regional planning agency, is responsible for allocating the RHNA to individual jurisdictions within the region.

SCAG assigned a RHNA of 1,013 units to the City of Inglewood for the 2014-2021 RHNA period, in the following income distribution:

Extremely Low/Very Low Income:	250 units
Low Income:	150 units
Moderate Income:	167 units
Above Moderate Income:	446 units

The lower income households total 400 units for the City of Inglewood. Assuming all 400 lower income housing units are built by 2025, and based on the current people per dwelling unit factor for the City of approximately 3.0 and a per-capita residential water usage of 65.0 gpcd (see Table 4-5A), the water demand increase for these 400 lower income housing units is estimated at 87 AFY, which is included in the estimated demand increase between 2015 and 2025 of 1,491 AFY.

Confirmation that future water savings and demands for lower income households are included in demand projections is provided in Table 4-5.

Table 4-5: 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.	Chapter 9 2015 UWMP
Are Lower Income Residential Demands Included In Projections?	Yes

4.6 CLIMATE CHANGE

As presented in Metropolitan's 2015 UWMP: Climate change adds its own uncertainties to the challenges of planning. Metropolitan's water supply planning has been fortunate in having almost one-hundred years of hydrological data regarding weather and water supply. This history of rainfall data has provided a sound foundation for forecasting both the frequency and the severity of future drought conditions, as well as the frequency and abundance of above-normal rainfall.

But, weather patterns can be expected to shift dramatically and unpredictably in a climate driven by increased concentrations of carbon dioxide in the atmosphere. These changes in weather significantly affect water supply planning, irrespective of the debate associated with the sources and cause of increasing concentrations of greenhouse gasses. As a major steward of the region's water supply resources, Metropolitan is committed to performing its due diligence with respect to climate change.

While uncertainties remain regarding the exact timing, magnitude, and regional impacts of these temperature and precipitation changes, researchers have identified several areas of concern for California water planners. These include:

- Reduction in Sierra Nevada snowpack;
- Increased intensity and frequency of extreme weather events; and
- Rising sea levels resulting in
    - Impacts to coastal groundwater basins due to seawater intrusion
    - Increased risk of damage from storms, high-tide events, and the erosion of levees; and
    - Potential pumping cutbacks on the SWP and Central Valley Project (CVP)

Other important issues of concern due to global climate change include:

- Effects on local supplies such as groundwater;
- Changes in urban and agricultural demand levels and patterns;
- Impacts to human health from water-borne pathogens and water quality degradation;
- Declines in ecosystem health and function; and
- Alterations to power generation and pumping regimes.

4.6.1 Metropolitan's Activities Related to Climate Change Concerns

Under the 2015 Integrated Resource Plan (IRP) Update, Metropolitan recognizes additional risks and uncertainties from a variety of sources:

- Water quality
- Climate change
- Regulatory and operational changes
- Project construction and implementation issues
- Infrastructure reliability and maintenance
- Demographic and growth uncertainty

Any of these risks and uncertainties, should they occur individually or collectively, may result in a negative impact to water supply reliability. While it is impossible to know how much risk and uncertainty to guard against, the region's reliability will be more secure with a long-term plan that recognizes risk and provides resource development to offset that risk. Some risk and uncertainty will be addressed by following the findings of the 2015 IRP Update. But there are other risks that may take longer to manifest, like climate change or shifts in demographic growth patterns that increase or move the demands for water.

Metropolitan has established an intensive, comprehensive technical process to identify key vulnerabilities. This Robust Decision Making (RDM) approach was used with the 2010 IRP Update resource plan. The RDM approach can show how vulnerable the region's reliability is to longer-term risks and can also establish "signposts" that can be monitored to see when critical changes may be happening. Signposts include monitoring the direction of ever-changing impacts from improved Global Climate Models, and housing and

population growth patterns. The RDM approach will be revisited with the new resource reliability targets identified in the 2015 IRP Update.

Initial 2015 IRP analysis indicated an additional 200,000 AF of water conservation and local supplies may be needed to address these risks. This additional supply goal will be considered when examining implementation polices and approaches as the IRP process continues.

Metropolitan is an active and founding member of the Water Utility Climate Alliance (WUCA). WUCA consists of ten nationwide water providers collaborating on climate change adaptation and greenhouse gas mitigation issues. As a part of this effort, WUCA pursues a variety of activities on multiple fronts.

Member agencies of WUCA annually share individual agency actions to mitigate greenhouse gas emissions to facilitate further implementation of these programs. WUCA also monitors development of climate change-related research, technology, programs, and federal legislation.

In addition to supporting federal and regional efforts, WUCA released a white paper in January 2010 entitled "Options for Improving Climate Modeling to Assist Water Utility Planning for Climate Change." The purpose of this paper was to assess Global Circulation Models, identify key aspects for water utility planning, and make seven initial recommendations for how climate modeling and downscaling techniques can be improved so that these tools and techniques can be more useful for the water sector. Another recent WUCA publication related to water planning is: "Embracing Uncertainty: A Case Study Examination of How Climate Change is Shifting Water Utility Planning" (2015). A fundamental goal of this recent white paper is to provide water professionals with practical and relevant examples, with insights from their peers, on how and why to modify planning and decision-making processes to better prepare for a changing climate.

In addition to these efforts, the member agencies of WUCA annually share individual agency actions to mitigate greenhouse gas emissions to facilitate further implementation of these programs. At a September 2009 summit at the Aspen Global Change Institute, WUCA members met with global climate modelers, along with federal agencies, academic scientists, and climate researchers to establish collaborative directions to progress climate science and modeling efforts. WUCA continues to pursue these opportunities and partnerships with water providers, climate scientists, federal agencies, research centers, academia and key stakeholders.

Metropolitan also continues to pursue knowledge sharing and research support activities outside of WUCA. Metropolitan regularly provides input and direction on California legislation related to climate change issues. Metropolitan is active in collaborating with other state and federal agencies, as well as non-governmental organizations, on climate change related planning issues. The following list provides a sampling of entities that Metropolitan has recently worked with on a collaborative basis:

- USBR
- U.S. Army Corps of Engineers
- AWWA Research Foundation
- National Center for Atmospheric Research
- California Energy Commission
- California Department of Water Resources

Metropolitan continues to incorporate current climate change science into its planning efforts. A major component of the current IRP update effort is to explicitly reflect uncertainty in Metropolitan's future water management environment. This involves evaluating a wider range of water management strategies, and seeking robust and adaptive plans that respond to uncertain conditions as they evolve over time, and that ultimately will perform adequately under a wide range of future conditions. The potential impacts and risks associated with climate change, as well as other major uncertainties and vulnerabilities, will be incorporated into the update and accounted. Overall, Metropolitan's planning activities strive to support the Board adopted policy principles on climate change by:

- Supporting reasonable, economically viable, and technologically feasible management strategies for reducing impacts on water supply,
- Supporting flexible "no regret" solutions that provide water supply and quality benefits while increasing the ability to manage future climate change impacts, and
- Evaluating staff recommendations regarding climate change and water resources under the California Environmental Quality Act (CEQA) to avoid adverse effects on the environment.

Metropolitan has made great efforts to implement greenhouse gas mitigation programs and policies for its facilities and operations. To date, these programs and policies have focused on:

- Exploring water supply/energy relationships and opportunities to increase efficiencies;
- Participating in the Climate Registry, a nonprofit greenhouse gas emissions registry for North America that provides organizations with the tools and resources to help them calculate, verify, report, and manage their greenhouse gas emissions in a publicly transparent and credible way;
- Acquiring "green" fleet vehicles, and supporting an employee Rideshare program;
- Developing solar power at both the Skinner Water Treatment Plant (completed) and the Weymouth Water Treatment Plant (in progress); and
- Identifying and pursuing development of "green" renewable water and energy programs that support the efficient and sustainable use of water.

Metropolitan also continues to be a leader in efforts to increase regional water use efficiency. Metropolitan has worked to increase the availability of incentives for local conservation and recycling projects, as well as supporting conservation Best Management Practices for industry and commercial businesses.

5 SB X7-7 BASELINES AND TARGETS

Senate Bill x7-7 (SBx7-7) was enacted in November 2009 (Water Conservation Act of 2009), requiring all water suppliers to increase water use efficiency. The legislation set an overall goal of reducing per-capita urban water use by 20% by December 31, 2020 and to make incremental progress towards this goal by reducing per capita water use by at least 10% by December 31, 2015.

In preparing the 2010 UWMP, each urban retail water supplier was required to develop baseline daily per-capita water use, minimum baseline daily per-capita water use, and target daily per-capita water use for 2015 and 2020 that were to be 10% and 20% less, respectively, than the baseline daily per-capita water use based on utilizing one of four methods provided; with the target reduction for 2020 greater than the legislation's minimum water use reduction requirement. The four methods are:

- Method 1: 80% of the water supplier's baseline per capita water use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscape area water use; and commercial, industrial, and institutional uses
- Method 3: 95% of the applicable state hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan
- Method 4: A BMP Option based on standards that are consistent with the California Urban Water Conservation Council's (CUWCC) best management practices (BMPs).

As part of the process, all four methods were evaluated to find the lowest 2020 SB x7-7 target for the City, which must be lower than the minimum 2020 SB x7-7 target allowed by DWR. Method 3 was found to have the lowest 2020 SB x7-7 target for the City (141.6.5 gpcd); however, this was greater than the minimum 2020 SB x7-7 target allowed for the City by DWR, and the minimum 2020 SB x7-7 target of 112.0 gpcd was substituted. Further detailed information on the evaluation leading to the derivation of this target is presented in Section 5.6.

Baseline daily per-capita water use is defined as a continuous 10 or 15 year base period (baseline) for water use ending no earlier than December 31, 2004 and no later than December 31, 2010.

If the average baseline daily per-capita water use is greater than 100 gpcd for a defined 5-year baseline period, the legislation's minimum water use reduction requirement must also be met as set in Section 10608.22 of Senate Bill No. 7 SBx7-7. Per SBx7-7, the minimum water use reduction baseline period must end no earlier than December 31, 2007 and no later than December 31, 2010 and the minimum reduction shall be no less than 5% of this 5-year base daily per capita water use.

For the 2015 UWMP, water agencies must demonstrate compliance with their established water use target for 2015, which will also demonstrate whether the agency is on currently on track to achieve its 2020 target.

5.1 UPDATING CALCULATIONS FROM 2010 UWMP

In the 2010 UWMP, water agencies calculated a 2020 Urban Water Use Target through the use of a selected target method. In 2015 UWMPs, water agencies may update their 2020 Target and may make this calculation using a different target method than was used in 2010.

DWR determined that significant discrepancies exist between State Department of Finance (DOF) projected populations for 2010 (based on 2000 U.S. Census data) and actual populations for 2010 based on 2010 U.S. Census data. The average difference between projected and actual was approximately 3%, but the difference for some cities was as high as 9%.

Therefore, if an agency did not use 2010 Census data for their baseline population calculations in the 2010 UWMP (the full census data set was not available until 2012) DWR has determined that these agencies must recalculate their baseline population for the 2015 UWMPs using 2000 and 2010 Census data. This may affect the baseline and target values calculated in the 2010 UWMP, which must be modified accordingly in the 2015 UWMP. The City's 2010 UWMP did not use 2010 census data for its baseline population calculations and it is therefore recalculated in the 2015 UWMP in developing new SBx7-7 targets.

5.2 BASELINE PERIODS

City recycled water demand in 2008 was 683 AFY, which was 5.8% of the City's total 2008 retail water demand of 11,717 AFY. As this is less than 10%, a 10-year baseline period is used as opposed to a 15-year baseline period. The baseline period must end no earlier than December 31, 2004 and no later than December 31, 2010. The most advantageous sequence of years for calculating per-capita water use is the sequence that generates the highest per-capita water use, making subsequent water conservation easier to achieve. Accordingly, the 10-year period 1996 through 2005 was selected as the average per-capita water use baseline for the 2015 UWMP, which is the same baseline period used in the 2010 UWMP, as shown in Table 5-1A.

Per SBx7-7, the minimum 5-year water use reduction baseline period must end no earlier than December 31, 2007 and no later than December 31, 2010. A 5-year minimum water use reduction baseline period between 2003 through 2007 was selected to calculate the most advantageous 5-year minimum water use reduction target as shown in Table 5-1B. The minimum 5-year water use reduction baseline period is used to calculate the legislation's minimum water use reduction requirement.

Table 5-1A: Baseline Daily Per-Capita Water Use				
Sequence Year	Calendar Year	Water Service Area Population	Daily System Gross Water Use (AFY)	Annual Daily Per Capita Water Use (gpcd)
1	1996	85,653	12,178	126.9
2	1997	86,012	12,942	134.3
3	1998	86,372	11,266	116.4
4	1999	86,731	11,603	119.4
5	2000	87,090	11,647	119.4
6	2001	86,891	11,626	119.4
7	2002	86,692	11,519	118.6
8	2003	86,493	11,610	119.8
9	2004	86,294	11,397	117.9
10	2005	86,095	11,488	119.1
Baseline Daily Per Capita Water Use:				121.1

Table 5-1B: Minimum Baseline Daily Per-Capita Water Use				
Sequence Year	Calendar Year	Water Service Area Population	Daily System Gross Water Use (AFY)	Annual Daily Per Capita Water Use (GPCD)
1	2004	86,294	11,397	117.9
2	2005	86,095	11,488	119.1
3	2006	85,896	11,686	121.5
4	2007	85,697	11,234	117.0
5	2008	85,498	10,927	114.1
Minimum Baseline Daily Per Capita Water Use:				117.9

5.3 SERVICE AREA POPULATION

The City's WSA comprises 79.4% of the City of Inglewood in terms of land area with GSWC and CAWC serving water to the remaining land area of the City. The City's WSA, which is the subject of this UWMP, has a population that is less than the City's population. For the preparation of the 2015 UWMP, the DWR Population Tool was utilized to estimate the City's water service area population from 1990 through 2010 and for 2015 based on inputting single-family and multi-family residential water service connections for the years 2010 and 2015, along with the water service area boundary in electronic (KML) format. The Population Tool utilizes US Census data and electronic maps of the agency's service

area. Using the number of agency residential service connections, the tool will calculate the population for the non-census years. Population Tool worksheets are included in Appendix C.

5.4 GROSS WATER USE

For the baseline and minimum baseline periods, 56% and 63%, respectively, of City potable water use was supplied with Metropolitan imported water and the remaining potable water demands were supplied by treated City groundwater production. Gross water use is treated imported water and treated groundwater from the City's treatment plant entering the distribution system.

The City also purchases recycled water from WBMWD with recycled water accounting for approximately 6% of the City's total water supply, which is not included as SBx7-7-defined gross water. The City has no indirect recycled water use; no water placed in long-term storage; no water delivered to another urban supplier; no water delivered for agricultural use; and no significant process water use. Gross water use for the baseline and minimum baseline periods are shown in Table 5-1A and 5-1B, respectively.

5.5 BASELINE DAILY PER CAPITA WATER USE

As shown in Table 5-1A, the baseline per-capita water use is calculated to be 121.1 gpcd. In the 2010 UWMP, the baseline per-capita water use was calculated to be 115.4 gpcd. As shown in Table 5-1B, the minimum baseline per-capita water use is calculated to be 117.9 gpcd. In the 2010 UWMP, the baseline per-capita water use was calculated to be 108.1 gpcd.

5.6 2015 AND 2020 TARGETS

As shown in Table 5-1B, the minimum baseline water use averages 117.9 gpcd. The minimum per capita water use target for 2020 must therefore be 112.0 gpcd (95% of 117.9). The calculations of the 2020 water use reduction target for the four methods are as follows:

- Method 1: Using a baseline per-capita average of 121.1 gpcd (shown in Table 5-1A) the City of Inglewood 2020 target would be 96.9 gpcd (80% of 121.1). Since the target water use for Method 1 is less than the one found using the legislation's minimum requirement criteria (112.0), no further adjustments to this water use target would be required, if this method is selected.
- Method 2: The City does not currently maintain records of lot size, irrigated landscaped area for each parcel, reference evapotranspiration for each parcel, etc. to split its residential, commercial, industrial, or institutional uses into inside and outside (landscape irrigation) uses. The use of Method 2 to calculate conservation targets is therefore not feasible.
- Method 3: The City of Inglewood falls within the South Coast Hydrologic Region (Hydrologic Region 4). According to the State's 20x2020 Water Conservation Plan, the 2020 Target for Hydrologic Region 4 is 149 gpcd. Using Method 3, the City's

2020 water use target would be 141.6 gpcd (95% of 149). Since the target water use generated by Method 3 is greater than the one found using the minimum requirement, the minimum requirement would be used, if this method is selected.

- Method 4: DWR's Target Method 4 Calculator was utilized to calculate 2020 target water use for the City under this method based on standards consistent with CUWCC BMPs. The City currently meters all water services, so there is no projected metering savings. A default indoor residential water savings of 15 gpcd was assumed. CII savings was calculated to be 3.0 gpcd; landscape irrigation and water loss savings was calculated to be 4.6 gpcd; and total savings was calculated to be 22.6 gpcd. Using Method 4, the City's 2020 water use target would be 98.5 gpcd. Since the target water use generated by Method 4 is less than the one found using the minimum requirement, no further adjustments to this water use target would be required, if this method is selected.

The discussion and calculations above are summarized in Table 5-1C.

Table 5-1C: 2020 Targets by Method

Method	2020
1	96.9
2	Not Applicable
3	112.0
4	98.5

As shown in Table 5-1, Method 3 results in the most favorable 2020 water use target level for the City: 112.0 gpcd. The 2015 interim target would then be 116.6 gpcd (mid-point between baseline of 121.1 and 2020 target of 112.0). In the City's 2010 UWMP, the City's 2020 target water use was calculated to be 102.7 gpcd using Method 3 and the 2015 interim target was calculated to be 109.1 gpcd. These baselines and targets are summarized in Table 5-1.

Table 5-1: Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline gpcd[(a)]	2015 Interim Target[(a)]	Confirmed 2020 Target[(a)]
10-15 year	1996	2005	121.1	116.6	112.0
5 Year	2004	2008	117.9		

(a) All values are in gallons per capita per day (gpcd)

5.7 2015 COMPLIANCE DAILY PER CAPITA WATER USE (GPCD)

In 2015, the City's per-capita water use was 92.9 gpcd, which was significantly lower than its 2015 target of 116.6 gpcd as demonstrated in Table 5-2. There were no adjustments to

the 2015 target for extraordinary events, economic adjustment, or weather normalization. The City's 2015 per-capita water use of 92.9 gpcd is also lower than its 2020 target of 112.0 gpcd.

5.8 REGIONAL ALLIANCE

The City is not participating in a regional alliance and is submitting their 2015 UWMP individually.

Table 5-2: 2015 Compliance

Actual 2015 gpcd	2015 Interim Target gpcd	**Optional Adjustments to 2015 gpcd** Enter "0" for adjustments not used *From Methodology 8*					2015 gpcd	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events	Economic Adjustment	Weather Normal-ization	TOTAL Adjustments	Adjusted 2015 gpcd		
92.9	116.6	0	0	0	0	92.9	92.9	Yes

(a) All values are in gallons per capita per day (gpcd)

6 SYSTEM SUPPLIES

The City obtains its water supply from three sources: treated imported surface water purchased from Metropolitan through WBMWD; local groundwater produced from the WCGB via City-owned and operated wells; and recycled water purchased from WBMWD. The groundwater is treated for high iron and manganese at the City's water treatment plant. The imported water and groundwater is chlorinated and enters the City's distribution system as potable water. The City currently has 18 service connections to the WBMWD recycled water system, utilizing the Title 22 recycled water for irrigation.

Historical water supply for the City dating back to 2008 is shown in Table 6-1A. As shown, imported water purchases have averaged 69% of the City's water supply and groundwater has averaged 24.5%. Due to wells being out of service, groundwater supply decreased from 34% of total water supply in 2009 to 17% in 2013 and was 18% in 2015, with imported water supply increasing proportionally. However, as discussed later in this chapter, the City is constructing a new well and rehabilitating existing wells to increase groundwater production, which will decrease imported water purchases.

Recycled water purchases have been a fairly consistent percentage of the City's total water supply, averaging 6.5% since 2008.

Table 6-1A: Historical City Water Supply (AFY)

Water Supply	2008	2009	2010	2011	2012	2013	2014	2015	Avg.
Imported Water	7,582	6,816	6,515	7,670	7,560	8,425	7,867	7,063	7,437
% Total	65%	61%	62%	72%	68%	77%	74%	74%	69%
Groundwater	3,452	3,786	3,389	2,383	2,760	1,844	1,879	1,764	2,657
% Total	29%	34%	32%	22%	25%	17%	18%	18%	24.5%
Recycled Water	683	647	586	578	818	662	849	726	694
% Total	6%	6%	6%	5%	7%	6%	8%	8%	6.5%
Total	11,717	11,249	10,490	10,631	11,138	10,931	10,595	9,554	10,788

6.1 PURCHASED IMPORTED WATER

The City purchases imported water from Metropolitan through its Metropolitan member agency, WBMWD. Metropolitan acquires and imports water into Southern California through two major water supply systems:

- The Colorado River Aqueduct, constructed and operated by Metropolitan, which transports water from the Colorado River, and
- The State Water Project (SWP), owned and operated by the Department of Water Resources (DWR), which transports water from the Sacramento-San Joaquin Delta through the California Aqueduct.

Faced with a declining water table and over-reliance on water from the West Coast Groundwater Basin in the 1940's, water authorities established WBMWD in 1947, which became a member agency of Metropolitan in 1948. WBMWD purchases imported water from Metropolitan and wholesales the imported water to cities and private companies in southwest Los Angeles County. In addition to imported domestic water, WBMWD delivers recycled water to the same service area.

WBMWD's service area includes 17 cities and several unincorporated portions of southwest Los Angeles County. WBMWD serves the cities and communities of Carson, Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills, Rolling Hills Estates, Inglewood, South Ladera Heights, a portion of Lennox, Lomita, Manhattan Beach, Redondo Beach, Culver City, El Segundo, Malibu, West Hollywood, Gardena, Hawthorne, and Lawndale. WBMWD also serves portions of unincorporated areas of Los Angeles County such as Athens, Howard, Ross-Sexton, North Ladera Heights, Del Aire, Topanga, View Park, Windsor Hills, and portions of Lennox and El Camino Village. WBMWD's service area is shown in Figure 6-1.

Los Angeles, Orange, and Ventura counties make up Metropolitan's Central Pool service area, which is served by three Metropolitan water treatment plants: the Jensen Plant in Granada Hills, the Weymouth Plant in La Verne, and the Diemer Plant in Yorba Linda. Each of these plants serves its local area as well as a portion of a common area (Common Pool). The City of Inglewood is located within the Common Pool service area.

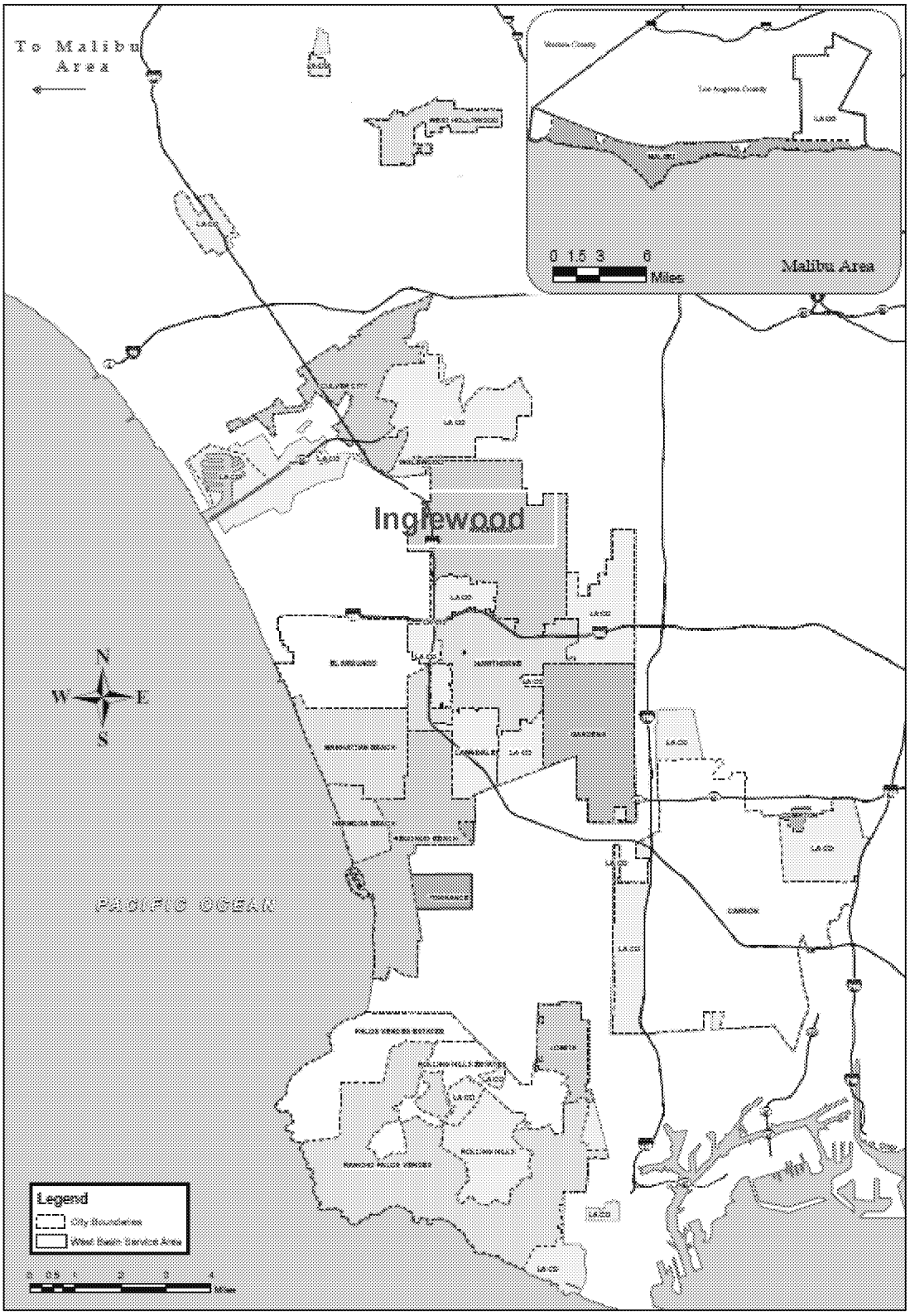
The City's water system receives imported water via Metropolitan service connections WB-17 and WB-38. The characteristics of the City's two Metropolitan connections are shown in Table 6-1B. WB-17 is connected to Metropolitan's Middle Cross Feeder and receives treated domestic water from the Weymouth Filtration Plant. WB-17 delivers imported water to the Morningside Facility via a 24-inch diameter pipeline, where it is mixed with the City's treated groundwater before entering the system. The capacity of WB-17 is 9.8 cubic feet per second (cfs) (4,400 gpm).

Table 6-1B: City Imported Water Connection Characteristics

Metropolitan Connection	Capacity (cfs)	Capacity (gpm)	Metropolitan Feeder	Metropolitan Treatment Plant
WB-17	9.8	4,400	Middle Cross	Weymouth
WB-38	9.8	4,400	Sepulveda	Jenson
Total	19.6	8,800	-	-

WB-38 is connected to Metropolitan's Sepulveda Feeder and receives treated domestic water from the Jensen Filtration Plant. WB-38 delivers imported water to the North Inglewood Facility via a 20-inch diameter pipeline, where it is mixed with the City's treated groundwater before entering the system. The capacity of WB-17 is 9.8 cubic feet per second (cfs) (4,400 gpm).

Figure 6-1
West Basin Municipal Water District Service Area



The City has redundant imported water supply because each Metropolitan connection receives supply from different treatment plants via different transmission mains and from different feeder connections. In the event one treatment/transmission train is taken out of service due to an emergency condition such as earthquake damage to the treatment plant or a transmission main, or for maintenance, the second independent treatment/transmission train could still remain in service.

6.1.1 Metropolitan Import Deliveries under Water Supply Allocation

In April 2015, citing continued drought conditions and reduced allocations from the State Water Project and Colorado River, the Metropolitan Board of Directors approved implementing their Water Supply Allocation Plan (WSAP) at a Regional Shortage Level 3 starting July 1, 2015, to cut imported water deliveries to its member agencies by 15%. Under a Level 3 WSAP, Metropolitan could impose a surcharge, ranging from $1,480 to $2,960/AF of additional water for any member agency that failed to meet the 15% reduction. The allocation plan limits water usage for its 26 member agencies based on their dependency on Metropolitan supplies, while considering local supply conditions and past water-saving actions.

In response, WBMWD developed a drought allocation plan model for its member agencies and the City of Inglewood was limited to imported water purchases totaling 7,381 AF for FY 2015/16 at the Tier 1 imported water rate. Imported water above 7,381 AF would have to be purchased by the City at a surcharge of $2,960/AF.

On May 10, 2016, the Metropolitan Board of Directors reduced the WSAP to a Level 2, which is a 10% reduction in imported water deliveries, effective immediately, due to lower demands achieved through the region's water saving efforts and improved supply conditions, particularly in Northern California; and declared there would be no WSAP set forth for FY 2017.

6.1.2 Imported Water Quality

The City purchases imported water from WBMWD, which comes from the SWP and Colorado River via Metropolitan pipelines and aqueducts. Metropolitan is proactive in its water quality efforts, protecting its water quality interests through active participation in the regulatory arena and using treatment processes that provide the highest water quality from both sources. Metropolitan has one of the most advanced laboratories in the country where water quality staff can examine the efficacy of existing treatment by performing tests and reviewing results as well as researching new treatment technologies. 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 total dissolved solids (TDS) and lower levels of organic

matter, conversely the SWP contains a lower TDS, but 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 provides appropriate treatment processes to decrease the formation of disinfection byproducts.

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 (PPCPs). 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.

6.1.2.1 Source Water Protection

Source water protection is the first step in a multi-barrier approach to provide safe and reliable drinking water. In accordance with California's Surface Water Treatment Rule, Title 22 of the California Code of Regulations, DDW requires large utilities delivering surface water to complete a Watershed Sanitary Survey every five years to identify possible sources of drinking water contamination, evaluate source and treated water quality, and recommend watershed management activities that will protect and improve source water quality. The most recent sanitary surveys for Metropolitan's water sources were completed in 2010 and 2011. The next Sanitary Surveys for the watersheds of the Colorado River and the SWP will report on water quality issues and monitoring data through 2015. Metropolitan has an active source water protection program and continues to advocate numerous SWP and Colorado River water quality protection issues.

6.1.2.2 DWR SWP Water Quality Programs

Metropolitan supports DWR's policies and programs aimed at maintaining or improving the quality of SWP water delivered to Metropolitan, especially the ability to govern the quality of non-project water conveyed by the California Aqueduct. In addition, Metropolitan has supported the expansion of DWR's Municipal Water Quality Investigations Program beyond its Bay-Delta core water quality monitoring and studies to include enhanced water quality monitoring and forecasting of the Delta and SWP. These programs are designed to provide early warning of water quality changes that will affect treatment plant operations both in the short-term (hours to weeks) as well as seasonally. The forecasting model is currently suitable for use in a planning mode. It is expected that

with experience and model refinement, it will be suitable to use as a tool in operational decision making.

6.1.2.3 Water Quality Exchanges

Metropolitan has implemented selective withdrawals from the Arvin-Edison storage program and exchanges with the Kern Water Bank to improve water quality. Although these programs were initially designed to provide dry-year supply reliability, they can also be used to store SWP water at periods of higher water quality for withdrawal at times of lower water quality, thus diluting SWP water deliveries.

Although, elevated arsenic levels have been a particular concern with groundwater banking programs. However, there are short-term water quality benefits that can be realized such as groundwater pumped into the California Aqueduct with lower total organic carbon (TOC) levels, lower bromide levels, and lower TDS.

6.1.2.4 Water Supply Security

Changes in national and international security have led to increased concerns about protecting the nation's water supply. In coordination with its member agencies, Metropolitan added new security measures in 2001 and continues to upgrade and refine procedures. Metropolitan increased the number of water quality tests conducted each year to over 300,000 analytical tests on samples collected within its service area and source waters and developed contingency plans that coordinate with the Homeland Security Office's multicolored tiered risk alert system.

6.2 GROUNDWATER

City wells produce groundwater from the WCGB. Prior to 1961, up to 94,000 AFY was extracted from the underground aquifer, which led to a serious overdraft in the WCGB. This over-pumping, coupled with similar heavy groundwater extraction from the adjoining Central Basin led to sea water intrusion into the WCGB. To mitigate these concerns, groundwater in the West Coast and Central Basins was adjudicated by court order (Judgment) to protect the underground water supply within the two basins.

6.2.1 Basin Adjudication

In 1961, by order of the Los Angeles Superior Court, pumping in the WCGB was limited to 64,468.25 AFY[1]. While this Judgment resulted in significantly reduced pumping from the WCGB, the adjudicated pumping limits were set higher than the natural replenishment of groundwater, which continued to result in annual overdrafts. Inglewood's adjudicated share of that water right is 4,449.89 AFY[2].

[1] Per Water Replenishment District of Southern California website

[2] Inglewood's original adjudicated right was for 4,382 AFY; the City subsequently purchased an additional 67.89 AFY in water rights from Frank Abell, Boise Cascade Building Company, Georgia Pacific Corporation, Kaufman, Leo and Sheldon Baer, and George R. Murdock

Groundwater production in the Basin has been declining over the past ten years, from a high of 53,870 AFY in the water year 2000/01 to a low of 36,808 AFY in 2005/06 with 36,328 AFY being pumped in 2014/15.[3] The amount of water member agencies are allowed to pump is set annually by the Water Replenishment District of Southern California (WRD), but the values remain fairly constant. The Judgment also allows water users to carry over and extract any unused water rights, which originally was up to 10% of such unused water right and up to 10% beyond their allowable pumping rights within a given year.[4]

Beginning in the 2014-2015 Administrative Year for the WCGB Judgment (July 1- June 30) and each year thereafter, the WCGB carryover is 100% of allotted pumping rights. The amount of carryover is reduced by the quantity of water held in a pumper's storage account, but in no event is carryover less than 20% of the allotted pumping right (see Section 6.2.3 for a discussion on the new Court Judgement).

WRD tracks the amount of groundwater production (pumping) that occurs every year in the Central and West Coast groundwater basins to identify trends that may impact groundwater resources. As previously noted, the groundwater basins currently face overdraft every year because pumping exceeds natural groundwater replenishment. Sources of replenishment water to WRD include recycled water, imported water, and natural runoff captured in the regional spreading grounds.

6.2.2 West Coast Groundwater Basin Aquifer

The WCGB is approximately 160 square miles and occupies 37 percent of the southwestern part of the Coastal Plain of the Los Angeles groundwater basin and has a total storage capacity of 6,500,000 AF (based on the Silverado Aquifer, the primary water producing aquifer).

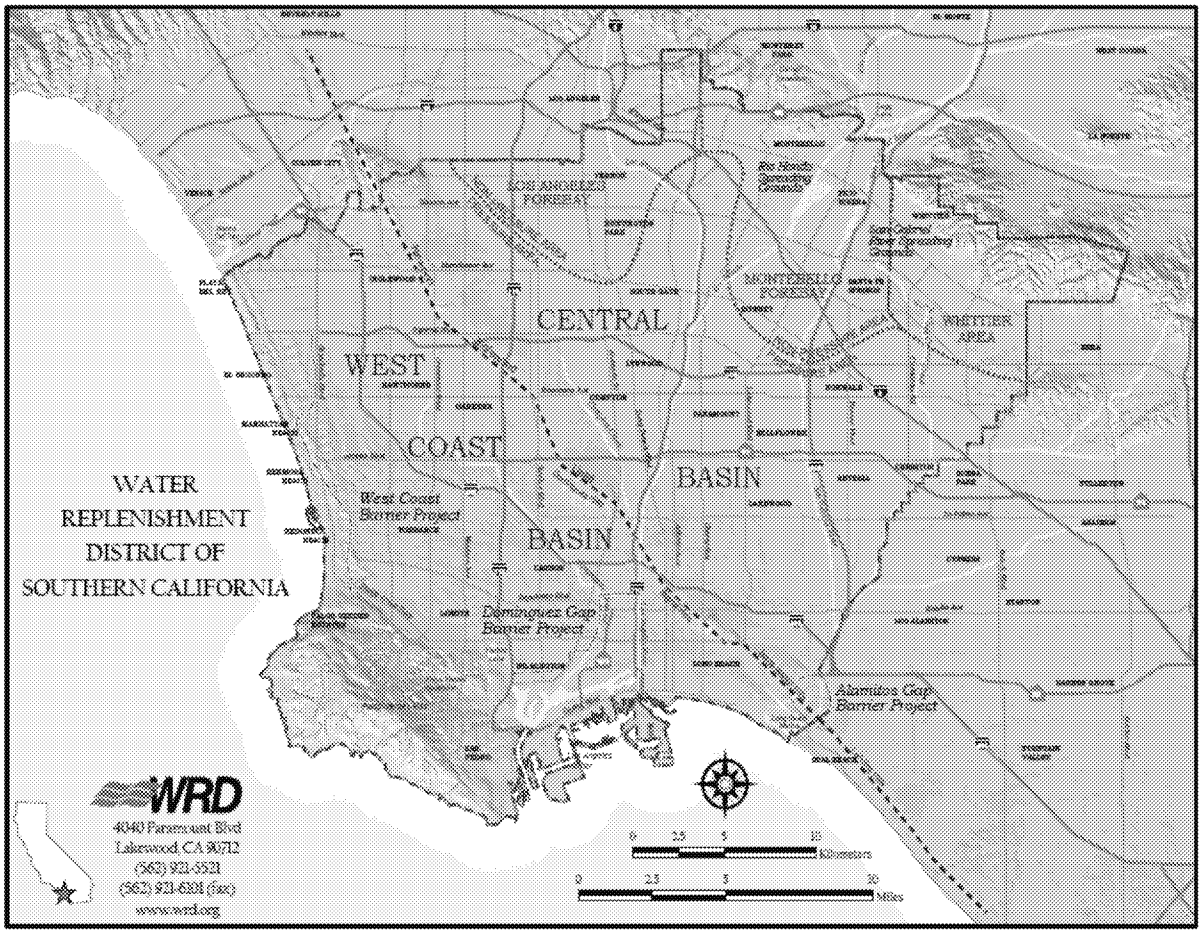
The location of the WCGB and Central Basin within the greater Los Angeles metropolitan region is shown on Figure 6-2. On the north, the WCGB is bounded by the Ballona Escarpment, an abandoned erosional channel from the Los Angeles River. On the East, the Basin is bounded by the Newport-Inglewood fault zone. The WCGB is bounded on the south and west by the Pacific Ocean and by consolidated rocks of the Palos Verdes Hills. The surface of the WCGB is crossed in the south by the Los Angeles River through the Dominguez Gap, and the San Gabriel River through the Alamitos Gap, both then flowing into the San Pedro Bay.[5]

Water bearing formations include Holocene, Pleistocene, and Pliocene age sediments. The semiperched aquifer of the Holocene age is unconfined. The groundwater in the underlying aquifers is confined throughout most of the WCGB; and the Gage and Gardena aquifers are unconfined where water levels have dropped below the Bellflower aquitard. These

[3] Information extracted from WRD's 2016 Engineering Survey and Report which can be found on their website at: http://www.wrd.org/engineering/reports/May9_2016_ESR_Final_Report.pdf
[4] July 21, 1961 Judgment, Section V
[5] DWR, California's Groundwater Bulletin 118, 2004

aquifers merge with adjacent aquifers, particularly near the Redondo Beach area. The Silverado aquifer, underlying most of the Basin, is the primary production aquifer and yields between 80 to 90 percent of the groundwater extracted from the WCGB.

Figure 6-2
West Coast Basin and Central Basin Location Map



6.2.3 Groundwater Production and Overdraft

In the early 1940s, extensive over pumping of the WCGB had led to critically low groundwater levels, resulting in seawater intrusion along the coast, serious overdraft, and the decline of water levels. Annual pumping prior to the adjudication of groundwater rights in the early 1960s reached levels as high as 94,100 AF. This situation precipitated an adjudication that limits the allowable extraction that could occur in any given year and assigned water rights to WCGB pumpers. The adjudication for the WCGB was set at total of 64,468.25 AFY (for all pumpers in the WCGB) with the City having an adjudicated right of 4,449.89 AFY. The total pumpage of the WCGB was set higher than the natural replenishment amounts, creating an annual deficit known as the "Annual Overdraft." In order to combat this Annual Overdraft, WRD purchases and recharges additional water to make up for the overdraft (WBMWD, 2016).

In December 2014, the Superior Court granted a motion by WRD, City of Inglewood, City of Long Beach, City of Manhattan Beach, City of Los Angeles, City of Torrance, California Water Service, Golden State Water Company and other parties to amend the WCGB Judgment to establish a legal framework for the storage and extraction of stored water in the WCGB.

The Judgment Amendment, which is included in Appendix E, will permit the storage of up to 120,000 acre-feet, which is the available, safe storage capacity of that basin. The legal framework permits a groundwater pumper with adjudicated rights to store water and subsequently extract that stored water without the extraction counting against its water rights and without having to pay the Replenishment Assessment (RA). The Judgment Amendment makes possible the storage of "surplus" imported water in the rare instances when it is available for use in the more frequent instances when it is not, further enhancing the region's water supply reliability (WBMWD, 2016).

The court's decision culminated a journey that started in 1999. After a failed facilitated process among the multiple water rights stakeholders and WRD and a two-year state-sponsored mediated effort that resulted in the filing of the petition in April 2009, several legal challenges travelled to the Appellate court for resolution. After several rounds of negotiation and modest changes to the petition, the parties that originally opposed the petition ended up supporting it. Pursuant to the Judgment Amendment, WRD assumed administrative Watermaster duties from the California Department of Water Resources on July 1, 2015 (WBMWD, 2016).

To allow full WCGB rights to be pumped while limiting seawater intrusion, WRD purchases non-interruptible imported and recycled water supplies from WBMWD for injection by the Los Angeles County Department of Public Works at the West Coast and Dominguez Gap Seawater Intrusion Barriers.

WRD is the entity responsible for maintaining and replenishing the WCGB. WRD is a special district created by the State and governed by a five-member elected body to replenish and protect the WCGB with imported water and recycled water (WRD, Engineering Survey and Report, May 2015). Groundwater pumped from the WCGB has been declining over the past 5 years due to strong water conservation efforts as shown in Table 6-1C, which also shows groundwater replenishment and average recharge.

Table 6-1C: WCGB Groundwater Production, Replenishment and Recharge (AFY)[a]

Basin Activity	2011	2012	2013	2014	2015
Groundwater Pumped	34,646	33,701	31,381	31,288	28,700
Groundwater Replenishment (Imported & Recycled)	20,853	15,070	17,942	21,658	19,757
Average Natural Mountain-Front Recharge[b]	14,500	14,500	14,500	14,500	14,500

(a) Derived from WBMWD (2016).
(b) From Reichard et al., (2003) for average 5-year conditions (1996-2000).

WRD's 2016 Engineering Survey and Report notes groundwater levels within the WCGB in 2015 rose in some areas, fell in others, but over the entire WCGB, the average water level change was a rise of 3.4 feet (WRD, 2016). Although water levels rose in some areas of the WCGB, water levels fell up to 10 feet in some areas of the Central Basin, resulting in an overall loss in groundwater storage between the two basins. WRD estimates the annual change in storage for 2014/2015 water year for both basins was -12,700 AF. The Accumulated Overdraft at the end of FY 2014/2015 was 832,300 AF, or 220,300 AF below the Optimum Quantity[6].

In an effort to eliminate long-term overdraft conditions, WRD closely monitors the groundwater basins for fluctuations in groundwater levels. WRD utilizes a groundwater model developed by the United States Geological Survey (USGS) to study and better understand the Basin's reaction to pumping and recharge. WRD works closely with the Los Angeles County Department of Public Works, Metropolitan, and Sanitation Districts of Los Angeles County on current and future replenishment supplies.

6.2.4 Recharge

Another method for controlling overdraft is through recharge management programs. Natural groundwater replenishment through percolation of precipitation and irrigation waters is insufficient to sustain the groundwater pumping that takes place in the WCGB. WRD must therefore depend on artificial recharge programs to replace the annual overdraft. The amount of water available for recharge will vary from year to year. In 2014/2015, WRD recharged 120,124 AF to both basins. The various methods of recharging the Basin using imported and recycled water are described below:

- Injection – WRD recharges the WCGB by injecting water into it to prevent seawater intrusion. A barrier is formed by injection of recycled water or treated imported water from Metropolitan in wells along the West Coast Barrier Project (between Redondo Beach and El Segundo) and the Dominguez Gap Barrier Project (east of Palos Verdes Peninsula).
- In-lieu Replenishment Water – The In-lieu program allows the natural recharge of the WCGB by offsetting groundwater production with the use of imported water. The reduction in pumping naturally recharges the WCGB.
- Transfer from Central Groundwater Basin – Although not well quantified, groundwater from the Central Groundwater Basin flows into the WCGB 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 WCGB.

6.2.5 City Groundwater Production

The City owns and operates wells that extract groundwater from the WCGB. The City's adjudicated share of water rights is 4,449.89 AFY. The City also has carry-over rights as

[6] All references in this paragraph are extracted from WRD's 2016 Engineering Survey and Report.

described in Section 6.2.1. The City currently produces groundwater from the WCGB via four active groundwater wells, Well Nos. 1, 2, 4 and 6, that were constructed in 1974, 1974, 1990, and 2003, respectively. Historical production by these wells dating back to 2008 is shown in Table 6-1D.

Table 6-1D: Historical City Well Production (AFY)

Well	2008	2009	2010	2011	2012	2013	2014	2015	Avg.
Well No. 1	183	673	515	299	121	0	0	197	249
% Total	5%	18%	15%	12%	4%	0%	0%	11%	9%
Well No. 2	306	423	770	702	524	302	178	86	411
% Total	9%	11%	23%	30%	19%	16%	9%	5%	16%
Well No. 4	908	880	663	320	281	253	208	150	458
% Total	26%	23%	20%	13%	10%	14%	11%	9%	17%
Well No. 6	2,055	1,810	1,441	1,062	1,835	1,288	1,493	1,330	1,539
% Total	60%	48%	42%	45%	67%	70%	80%	75%	58%
Total	3,452	3,786	3,389	2,383	2,761	1,843	1,879	1,763	2,657

The pumping capacity and specific capacity of each well has declined over the years primarily due to age, and in some cases, due to physical defects. Well No. 1 was rehabilitated in late 2014 and placed back in service in 2015. Well No. 2 is currently out of service and is scheduled for rehabilitation in late 2016. Well No. 4 is producing less than its design capacity and is scheduled for rehabilitation in 2017. Well No. 6 is currently in operation and is scheduled for rehabilitation in 2017. Groundwater pumped by the City from the WCGB from 2011 through 2015 is summarized in Table 6-1.

A new City well, Well No. 7, will be designed and constructed and is planned for operation beginning in 2017 with an estimated supply capacity of 1,500 gpm (1,950 AFY). With well rehabilitation and the construction of new Well No. 7, City groundwater production capacity is projected to increase to 5,300 AFY by the year 2017 as shown in Table 6-1E, which is an increase of approximately 200% relative to groundwater production in 2015 (1,763 AFY). It is estimated that the City will rehabilitate and replace wells as required to maintain average annual well supply at approximately 4,450 AFY, equivalent to their current groundwater rights, through the planning period.

Table 6-1: Groundwater Volume Pumped

Groundwater Type	Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	WCGB	2,383	2,761	1,843	1,879	1,764
Total		2,383	2,761	1,843	1,879	1,764

Raw groundwater from Wells 1, 2, 4, and 6 is conveyed to the City's 13-mgd Sanford M. Anderson Treatment Plant for manganese and iron removal. Iron and manganese are secondary contaminants, i.e. taste, odor, and/or aesthetics concerns, as opposed to a primary contaminant, i.e. health concerns.

Water loss occurs during the treatment process. In 2015, raw groundwater totaling 1,763 AFY was pumped to the treatment plant and treated effluent totaling 1,660 AFY was pumped from the plant to the distribution system for a water loss of approximately 6%.

Table 6-1E: Projected City Well Capacity for 2017

Well	2017 Well Capacity (gpm)	2017 Well Capacity (AFY)[a]
Well No. 1	550	700
Well No. 2	450	550
Well No. 4	450	550
Well No. 6	1,200	1,550
Well No. 7	1,500	1,950
Total	4,150	5,300
Groundwater Rights	-	4,450

a) Based on using each well 80% of the year

6.2.6 Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) consists of three legislative bills, Senate Bill SB 1168 (Pavley), Assembly Bill AB 1739 (Dickinson), and Senate Bill SB 1319 (Pavley) that provide a framework for long-term sustainable groundwater management across California. Under the legislation, local and regional authorities in medium and high priority groundwater basins will form Groundwater Sustainability Agencies (GSAs) that oversee the preparation and implementation of a local Groundwater Sustainability Plan (GSP). Groundwater in the WCGB and Central Groundwater Basin are adjudicated by court order to protect the underground water supply within the two basins. As such, these basins are already managed and are not required to submit a GSP but are required to submit groundwater monitoring data annually to the California Department of Water Resources.

6.2.7 Groundwater Quality

City wells have historically produced and currently produce groundwater that meets Federal and State water quality standards. The water quality constituents of concern (COC) for groundwater produced by City wells are iron (Fe), manganese (Mn), and total dissolved solids (TDS). In some groundwater samples from certain City wells, each COC has occasionally been detected at concentrations exceeding its respective California Division

of Drinking Water (DDW) applicable primary or secondary Maximum Contaminant Level (MCL). Historic water quality data for Well Nos. 1, 2, 4 and 6 is presented in Table 6-1F.

TDS concentrations in City well water have ranged from 277 milligrams per liter (mg/L) to 640 mg/L. The current State Water Resources Control Board (SWRCB) secondary (recommended) MCL for TDS are: 500 mg/L (lower); 1,000 mg/L (upper); and 1,500 mg/L (short-term). Hence, the detected concentrations range from below to above the lower recommended SWRCB secondary MCL, but below the upper and short-term secondary MCLs for TDS. Generally, TDS concentrations sampled from City wells were below the lower recommended MCL. The five reported elevated detections (between 500 and 640 mg/L) were primarily from samples collected from Well No 6 between 2006 and 2011.

Iron (Fe) was present at concentrations ranging from Not Detectable (ND) to as high as 13,000 µg/L. The secondary MCL for iron is 300 µg/L. The unusually high concentrations of Fe (i.e. 13,000 µg/L in Well No. 1, and 5,500 µg/L in Well No. 6) are very likely related to laboratory testing of a turbid water sample and not reflective of actual field water quality. Manganese (Mn) was listed in the SWRCB database at concentrations ranging from ND to 670 µg/L, with all four City wells reporting concentrations above the current SWRCB secondary MCL of 50 µg/L for Mn on one or more occasions.

Groundwater from City wells is treated for iron and manganese at the City's Sanford M. Anderson Water Treatment Plant to meet the secondary MCLs for these two inorganic constituents (Trace Elements). The process to remove the iron and manganese includes chemical addition of chlorine and potassium permanganate, detention in two 202,500 gallon contact tanks to achieve adequate oxidation, and gravity filtration using six dual media greensand filters. Then ammonia is added at the end of the treatment process to create chloramine for a disinfectant. The total chlorine (chloramine) residual varies between 2.5 and 3.5 mg/L.

6.3 SURFACE WATER

The City does not use, or plan to use, self-supplied surface water as part of its water supply at this time.

6.4 STORMWATER

The City does not use, or plan to use stormwater to meet local water supply demands at this time.

6.5 WASTEWATER AND RECYCLED WATER

LACSD manages the wastewater collection and treatment system within the City of Inglewood. Wastewater generated within the City is conveyed to the Joint Water Pollution Control Plant (JWPCP) in Carson, via LACSD interceptor sewers. The JWPCP has an advanced primary treatment with 60 percent secondary treatment.

Table 6-1F: Historical City Groundwater Quality[a]

NMCL = No Maximum Contaminant Level (MCL); SMCL = Secondary MCL; PMCL = Primary MCL

Constituent Analyzed	Units	MCL	Well No. 1	Well No. 2	Well No. 4	Well No. 6
General Physical Constituents						
Turbidity (SMCL)	NTU	5	0.1-30	ND-2.8	ND-7.2	ND-2
Specific Conductance (SMCL)	µmhos/cm	900; 1,600; 2,200[b]	500-920	540-675	550-760	615-1,100
pH (SMCL)	units	6.5 to 8.5	7.2-8.2	7.6-8.3	7.6-8.1	7.6-7.9
Color (SMCL)	CU	15	ND-200	ND-30	ND-20	ND-7.5
Odor (SMCL)	TON	3	ND-8	ND-40	ND-2	ND-2
General Mineral Constituents						
Total Dissolved Solids (SMCL)	mg/L	500; 1,000; 1,500[b]	277-540	320-390	281-460	380-640
Total Organic Carbon (NMCL)	mg/L	None	0.8-7.0	0.4-3.2	0.6-4.0	ND-3.5
Total Hardness (NMCL)	mg/L	None	120-170	152-207	167-210	200-330
Ammonia (NMCL)	mg/L	None	1.3-5.9	0.53-2.6	0.88-3.6	ND-2.2
Calcium (NMCL)	mg/L	None	27-45	42-56	44-61	54-92
Magnesium (NMCL)	mg/L	None	11.7-15	14-16.4	12.3-18	15-24.6
Sodium (NMCL)	mg/L	None	53.6-150	51-69	45.3-83	50-70
Potassium (NMCL)	mg/L	None	4.4-12	2.9-6.8	4.5-9.3	3.6-7.1
Bicarbonate (HCO_3) (NMCL)	mg/L	None	263-430	240-320	278-380	210-280
Sulfate (SMCL)	mg/L	250, 500, 600[b]	1.1-53	2.7-53	1-7.7	49-60
Chloride (SMCL)	mg/L	250, 500, 600[b]	28-43	30-120	31.2-67	64-170
Fluoride (SMCL)	mg/L	2	0.21-0.5	0.29-0.42	0.24-0.7	0.2-0.3
Nitrate as NO_3 (PMCL)	mg/L	45	ND-0.68	0.08[c] (1989)	ND	ND
Detected Inorganic Constituents (Trace Elements)						
Aluminum (SMCL)	µg/L	200	ND-480	ND-540	ND-111	8.8[c] (2004)
Arsenic (PMCL)	µg/L	10	ND-1.0	ND	ND	ND
Barium (PMCL)	µg/L	1,000	ND-110	ND-26	30-32	54-100
Boron (PMCL)	µg/L	1,000 (NL)	160-460	200-450	150-270	110[c] (2003)
Chromium (Total) (PMCL)	µg/L	50	ND-14	ND-6	ND-0.22	ND-0.28
Copper (PMCL)	µg/L	1,000	ND-9	2.1-21	ND-7.1	4.3-15
Iron (SMCL)	µg/L	300	ND-13,000	ND-1,565	ND-910	ND-5,500
Lead (PMCL)	µg/L	15	1[c] (1989)	0.76-5	3.3[c] (1989)	0.43-0.47
Manganese (SMCL)	µg/L	50	ND-670	24-540	ND-170	ND-220
Mercury (PMCL)	µg/L	2	ND-2	ND-0.9	ND	ND
Selenium (PMCL)	µg/L	50	2[c] (1989)	2[c] (2006)	ND	ND
Zinc (SMCL)	µg/L	5,000	ND-46	26[c] (1991)	ND	ND-14
Detected Volatile Organic Compounds						
Total Trihalomethanes (PMCL)	µg/L	80	ND	5.2[c] (2004)	ND	ND
Detected Radiological Constituents						
Gross Alpha (PMCL)	pCi/L	15	0.6-3.2	0.19-4.87	0.026-3.5	0.148-2.72
Radium-228 (PMCL)	pCi/L	2	.044[c] (2008)	0.223-0.298	0.012-0.47	.274[c] (2004)
Uranium (PMCL)	pCi/L	20	ND	0.3[c] (2002)	ND	ND

a) Periods of records for Well Nos. 1, 2, 4 & 6 are 1989-2014, 1989-2014, 1992-2015 & 2003-2015, respectively
b) The 3 numbers represent the recommended, upper and short-term State MCLs for the constituent.
c) The listed concentration is reported for one sample. The year in parenthesis is the date of the reported detection
ND = Not Detected; NL = State Department of Public Health Notification Level;

The dry-weather, average-design treatment capacity of the JWPCP is 400 mgd and the maximum-design-peak flow is 540 mgd.[7] Treated wastewater from the JWPCP is conveyed to an ocean outfall that has a discharge two miles offshore from White Point on the Palos Verdes Peninsula. The depth of the discharge is approximately 200 feet below sea level.[8]

Municipal wastewater is generated in Inglewood's water service area from residential, commercial, industrial, and public/institutional land uses. Wastewater generation in the City's WSA in 2015 is estimated at 6,179 AFY, as shown in Table 6-2, which is 70% of WSA potable water use in 2015.

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

Wastewater Collection			Recipient of Collected Wastewater		
Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AFY)	Wastewater Treatment Agency	Treatment Plant Name	Is WWTP Located Within UWMP Area?
LACSD	Estimated	6,179	LACSD	JWPCP	No
Total		6,179			

Because the wastewater treated at the JWPCP is discharged to the ocean, none of the wastewater generated within Inglewood is treated to recycled water standards.

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

WW Treatment Plant	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2015 Volumes (AFY)			
				WW Treated	Discharged Treated WW	Recycled Within Service Area	Recycled Outside of Service Area
JWPCP	Ocean outfall	Yes	Advanced Primary/60% Secondary	290,000	290,000	0	0
Total				290,000	290,000	0	0

In 2015, Metropolitan and LACSD announced a joint proposal to add Advanced Wastewater Treatment facilities to JWPCP that could result in the reuse of up to 168,000 AFY of wastewater in a similar manner to Orange County Water District's Groundwater Replenishment System.

[7] LARWQCB Order No. ORDER NO. R4-2006-0042, Waste Discharge Requirements for the JWPCP, adopted April 6, 2006 available at: http://63.199.216.6/larwqcb/docs/1758_R4-2006-0042_WDR_PKG.pdf

[8] LACSD website: http://www.lacsd.org/waswater/wrp/jwpcp1.htm

Under this program, water would be purified at the plant, then injected or spread into local groundwater basins, before being pumped out and used as drinking water. A 1-MGD demonstration plant is currently in the design phase. The new advanced water treatment plant will be located on LACSD's property at the Carson site, and the purified water will be distributed to groundwater basins in Los Angeles and Orange Counties through a 30-mile network of new distribution pipelines. The program's first operational phase could produce about 67,000 acre-feet of recycled water per year. Additional phases could bring total production up to 168,000 acre-feet per year.

Since 1995, the City of Inglewood has purchased recycled water from WBMWD, produced at the Edward C. Little Water Recycling Facility (ECLWRF) located in El Segundo, California. WBMWD obtains secondary treated wastewater effluent from the City of Los Angeles' Hyperion Wastewater Treatment Plant and provides additional tertiary treatment at ECLWRF to meet Title 22 recycled water requirements. WBMWD produces five different qualities of recycled water including: 1) Disinfected Tertiary Water, 2) Nitrified Water, 3) Softened Reverse Osmosis Water, 4) Pure Reverse Osmosis Water, and 5) Ultra-Pure Reverse Osmosis Water.

WBMWD purchases approximately 13% of Hyperion's secondary effluent for treatment at the ECLWRF, where most of the water is treated to meet California Code of Regulations Title 22 tertiary standards for uses as recycled water including groundwater replenishment, injection into the seawater intrusion barrier, industrial use, irrigation, and other reuse purposes. The plant, which has a current tertiary treatment capacity of 62,700 AFY, produced approximately 58,000 AFY tertiary Title 22 recycled water in 2015.

The City currently has 18 connections to WBMWD's recycled water system including service connections to Inglewood Park Cemetery, Hollywood Park Race Track, City parks, Inglewood Unified School District facilities, and Caltrans right-of-way. City recycled water use has averaged 694 AFY since 2008 (6.5% of total City water use) since 2008; and was 849 AFY in 2014 and 726 AFY in 2015.

Almost all recycled water use in the City is for landscaping irrigation with a very small amount of recycled water used City yard fire hydrant street sweeping. Current and projected recycled direct beneficial uses within the City's water service area are shown in Table 6-4 and a comparison of recycled water usage projected for 2015 in the City's 2010 UWMP compared with actual usage is shown in Table 6-5. The increase in recycled water demand in 2020 of 334 AFY relative to 2015 is primarily attributable to landscape irrigation planned at the new Hollywood Park development (200 AFY). Methods to expand future recycled water use is shown in Table 6-6.

Table 6-4: Current & Projected Recycled Direct Beneficial Uses within Service Area

Beneficial Use Type	Level of Treatment	2015	2020	2025	2030	2035	2040
Landscape irrigation	Tertiary	726	1,060	1,060	1,060	1,060	1,060
Total	-	726	1,060	1,060	1,060	1,060	1,060

Table 6-5: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual		
Use Type	2010 Projection for 2015	2015 Actual Use
Landscape irrigation	1,060	726
Total	1,060	726

Table 6-6: Methods to Expand Future Recycled Water Use			
Name of Action	Description	Planned Implementation Year	Increase in Recycled Water Use (AFY)
Customers/Mains	Add/retrofit customers & construct transmission mains to users	2018 - 2020	330
Total			330

6.6 DESALINATED WATER OPPORTUNITIES

Over an eight year period, WBMWD conducted ocean water desalination pilot testing at the El Segundo Power Generating Station and assessed the feasibility of converting ocean water into drinking water. Various water treatment technologies including high-rate pre-screening, microfiltration/ultrafiltration, reverse osmosis, etc. were piloted and extensive water quality monitoring of the raw ocean source water, discharge concentrate, and product water quality was performed. As a result of this testing, WBMWD concluded that ocean water desalination could be a viable alternative water supply and additional research was needed to further develop it as a future water supply resource.

WBMWD is currently conducting larger scale testing at their Ocean Water Desalination Demonstration Facility (OWDDF) at the SEA Lab in Redondo Beach. The OWDDF was completed in 2010 and has been operating continuously. The OWDDF is providing WBMWD with the opportunity to build on the operational protocols and challenges from piloting to establish environmentally-effective and sustainable intake technologies, determine an approach to energy usage and optimization/minimization, develop process optimization protocols, determine operational requirements, establish target water quality goals, and evaluate concentrate discharge management options.

The OWDDF includes an evaluation of passive screening and subsurface intake systems, energy consumption and optimization analysis and an intensive brine discharge study. The results of the two to three year demonstration project will be used as the foundation for development of a full-scale design, permitting, and operations approach.

6.7 EXCHANGES OR TRANSFERS

The City currently does not participate with other water agencies on water exchanges or transfers into or out of the City's water service area and none are planned for the future at this time.

6.8 FUTURE WATER PROJECTS

The City currently produces groundwater from the WCGB via four active groundwater wells: Well Nos. 1, 2, 4 and 6. The pumping capacity and specific capacity of each well has declined over the years primarily due to age, and in some cases, due to physical defects.

Well No. 2 is currently out of service and is scheduled for rehabilitation in late 2016. Well No. 4 is producing less than its design capacity and is scheduled for rehabilitation in 2017. Well No. 6 is currently in operation and is scheduled for rehabilitation in 2017. A new City well, Well No. 7, will be designed and constructed and is planned for operation beginning in 2017 with an estimated supply capacity of 1,500 gpm (1,950 AFY).

With well rehabilitation and the construction of new Well No. 7, City groundwater production capacity is projected to increase to 5,300 AFY by the year 2017, which is an increase of approximately 200% relative to groundwater production in 2015 (1,763 AFY).

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

The City obtains its potable water supply from imported surface water purchased from Metropolitan through WBMWD, and local groundwater produced from the West Coast Groundwater Basin WCGB via City-owned and operated wells.

Due to wells being out of service, groundwater supply decreased from 34% of total water supply in 2009 to 17% in 2013 and was 18% in 2015, with imported water supply increasing proportionally. However, the City is constructing a new well and rehabilitating existing wells to increase groundwater production, which will decrease imported water purchases.

The City currently has 18 service connections to the WBMWD recycled water system, utilizing the Title 22 recycled water for irrigation. Recycled water purchases have been a fairly consistent percentage of the City's total water supply, averaging 6% since 2008.

A summary of expected future water supply projects or programs for the City is shown in Table 6-7. The City's actual water supplies for 2015 and projected supplies for 2020 through 2040 are shown in Table 6-8 and Table 6-9, respectively.

6.10 CLIMATE CHANGE IMPACTS TO SUPPLY

Climate change impacts to Metropolitan water supplies and Metropolitan's activities related to climate change concerns are discussed in Section 4.6.

Table 6-7: Expected Future Water Supply Projects or Programs						
Name	Joint Project with other agencies?		Description	Year Planned	Planned Year- Type	Expected Supply (AFY)
Groundwater supply improvement projects	No	-	Rehabilitate Well Nos. 2, 4 & 6; construct new Well No. 7	2016 – 2017	All Year Types	2,650

Table 6-8: Water Supplies — Actual			
Water Supply		2015	
Description	Additional Detail on Water Supply	Actual Volume (AF)	Water Quality
Purchased or Imported Water	Treated Metropolitan water via WBMWD	7,063	Drinking Water
Groundwater	WCGB	1,764	Drinking Water
Recycled Water	WBMWD	726	Recycled Water
Total		9,554	

Table 6-9: Water Supplies — Projected						
Water Supply		Projected Water Supply				
		2020	2025	2030	2035	2040
	Additional Detail	Volume[a]	Volume[a]	Volume[a]	Volume[a]	Volume[a]
Purchased or Imported Water	Treated Metropolitan water via WBMWD	5,681	5,867	5,759	5,650	5,541
Groundwater	WCGB	4,450	4.450	4,450	4,450	4,450
Recycled Water	WBMWD	1,060	1,060	1,060	1,060	1,060
Total		11,191	11,377	11,269	11,160	11,051

(a) Supply expected to be reasonably available

7 WATER SUPPLY RELIABILITY ASSESSMENT

7.1 CONSTRAINTS ON WATER SOURCES AND RESPONSE PROGRAMS

Two of the most significant constraints on water supply for the City and for Southern California have been the drought that started in 2012 and has persisted into 2016, and Sacramento-San Joaquin River Delta ecosystem issues that affect imported water supply from the State Water Project. The water conditions that the region faced in 2015 were shaped by supply conditions and resource actions that occurred in the preceding years, including several extraordinary events, such as:

- Historic drought in California leading to record low contract supplies available from the State Water Project in 2014 (5% of contract supplies) and in 2015 (20% of contract supplies);
- An extended 16 year drought in the Colorado River watershed that has decreased storage levels in Lake Mead and Lake Powell to 38% and 51% of capacity respectively at the end of November 2015 and keeping storage below surplus levels despite an ease in drought conditions in 2014 and 2015;
- Groundwater basins and local reservoirs dropping to very low operating levels due to record dry hydrology in Southern California;
- Restrictions of SWP deliveries by federal court orders due to endangered Delta smelt and salmon which resulted in the combined loss of approximately 3 MAF of SWP supplies between 2008 and 2014. These losses have impacted Metropolitan's ability to meet demands and refill regional storage;
- In 2014, Lake Oroville storage dropped within 10 TAF of its lowest operating levels since the historic drought of 1977;
- Supply availability in the Los Angeles Aqueduct system continues to be affected by both the drought and environmental mitigation efforts related to Owens Lake and the Lower Owens River.

7.1.1 Imported Surface Water

The City purchases imported water from Metropolitan through its Metropolitan member agency, WBMWD. Imported water supply was approximately 74% of the City's total water supply (including recycled water) in 2015. It will remain a significant water supply source for the City in the future, but at a lower water supply percentage of 50% as it is expected the City will rehabilitate and replace wells as required to maintain average annual well supply at approximately 4,450 AFY, equivalent to their current groundwater rights, through the planning period.

Metropolitan acquires and imports water into Southern California through two major water supply systems:

- The Colorado River Aqueduct, constructed and operated by Metropolitan, which transports water from the Colorado River, and

- The State Water Project (SWP), owned and operated by the Department of Water Resources (DWR), which transports water from the Sacramento-San Joaquin Delta through the California Aqueduct.

As reported in their 2015 UWMP, Metropolitan faces a number of challenges in providing adequate, reliable and high quality supplemental water supplies for Southern California. One of those challenges is dry hydrologic conditions that can have a significant impact on Metropolitan's imported water supply sources.

The peak of the snowpack season traditionally occurs on April 1; however in 2015, the snowpack peaked in January at only 17% of the April 1 average measurement, resulting in the earliest and lowest snowpack peak in recorded history. The statewide snowpack was all but gone by April 1, 2015 and registered a record low of 5% of average for that day. This dry hydrology produced only 51% of average runoff for the water year and consequently kept state reservoirs below average storage levels. As a result, Metropolitan only received 20% of its contract water supplies from the State Water Project in 2015.

In 2015, the Upper Colorado River Basin snowpack peaked in March at 76% of normal. Runoff for that basin measured 94% of normal due to above normal rainfall in May, June and July, which averted a Colorado River shortage conditions for 2016. This allowed Metropolitan to implement new water management programs and bolster supplies in 2015. The Colorado River, however, is experiencing a historic16-year drought causing total storage levels in that system to steadily decline increasing the likelihood of shortage in future years beyond 2016. The restrictions on water use generated a record demand for water-saving rebates and refocused efforts to increase development of local water resources.

These dry hydrologic conditions and reduced imported water supplies, have led to significant withdrawals from Metropolitan's storage reserves, including Diamond Valley Lake (DVL) and its groundwater banking and conjunctive use programs to meet scheduled water deliveries. During the 2007-2009 drought, Metropolitan withdrew a combined 1.2 MAF from storage reserves to balance supplies and demands. In 2014 alone, Metropolitan withdrew 1.1 MAF from dry-year storage to balance supplies and demands because of the historic low final SWP allocation in that year.

In addition, challenges such as the detection of the quagga mussel in the Metropolitan's CRA supplies and increasingly stringent water quality regulations to control disinfection byproducts exacerbate the water supply condition and underscore the importance of flexible and adaptive regional planning strategies

7.1.1.1 Colorado River Water Supply Reliability Actions, Projects and Programs

The Colorado River Basin has been experiencing a prolonged drought where runoff above Lake Powell has been below average for twelve of the last sixteen years. Within those sixteen years, runoff in the Colorado River Basin above Lake Powell from 2000 through

2007 was the lowest eight-year runoff on record. While runoff returned to near normal conditions during 2008-2010, drought returned in 2012 with runoff in 2012 being among the four driest in history. During these drought conditions, Colorado River system storage has decreased to 50% of capacity.

In January 2007, Quagga mussels were discovered in Lake Mead and rapidly spread downstream to the Lower Colorado River. The presence and spawning of quagga mussels in the Lower Colorado River, and in reservoirs located in Southern California, poses an immediate threat to water and power systems serving more than 25 million people in the southwestern United States. Quagga mussels (Dreissena bugensis) are a related species to the better-known zebra mussels (Dreissena polymorpha) and indigenous to the Ukraine. They were introduced to the Great Lakes in the 1980s from fresh-water ballast of a transoceanic ship traveling from Eastern Europe.

Although the introduction of these two species into drinking water supplies does not typically result in violation of drinking water standards, invasive mussel infestations can adversely impact aquatic environments and infrastructure. If unmanaged, invasive mussel infestations have been known to severely impact the aquatic ecology of lakes and rivers; clog intakes and raw water conveyance systems; reduce the recreational and aesthetic value of lakes and beaches; alter or destroy fish habitats; and render lakes more susceptible to deleterious algae blooms.

Metropolitan's planning strategy recognized explicitly that program development would play an important part in reaching the target level of deliveries from the CRA. The implementation approach explored a number of water conservation programs with water agencies that receive water from the Colorado River or are located in close proximity to the CRA. Negotiating the QSA was a necessary first step for all of these programs. On October 10, 2003, after lengthy negotiations, representatives from Metropolitan, Imperial Irrigation District (IID), and Coachella Valley Water District (CVWD) executed the QSA and other related agreements. Parties involved also included San Diego County Water Authority (SDCWA), the California Department of Water Resources (DWR), the California Department of Fish and Wildlife, the U.S. Department of the Interior, and the San Luis Rey Settlement Parties. One of those related agreements was the Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement which specifies to which agencies water will be delivered under priorities 3a and 6a of the Seven Party Agreement during its term.

Metropolitan has identified a number of programs that could be used to achieve the regional long-term development targets for the CRA. Metropolitan has entered into or is exploring agreements with a number of agencies.

Imperial Irrigation District / Metropolitan Water District Conservation Program

Under agreements executed in 1988 and 1989, Metropolitan has funded water efficiency improvements within IID's service area in return for the right to divert the water conserved by those investments. Under this program, IID implemented a number of structural and non-structural measures, including the lining of existing earthen canals with concrete, constructing local reservoirs and spill-interceptor canals, installing non-leak gates, and

automating the distribution system. Other implemented programs include the delivery of water to farmers on a 12-hour rather than a 24-hour basis and improvements in on-farm water management through the installation of drip irrigation systems. Through this program, IID has conserved an additional 105 TAF per year on average upon completion of program implementation. Execution of the QSA and amendments to the 1988 and 1989 agreements resulted in changes in the availability of water under the program, extending the term to 2078 if the term of the QSA extends through 2077 and guaranteeing Metropolitan at least 85 TAF per year. The remainder of the conserved water is available to CVWD when needed.

Palo Verde Land Management, Crop Rotation, and Water Supply Program

In May 2004, Metropolitan's Board authorized a 35-year land management, crop rotation, and water supply program with PVID. Under the program, participating farmers in PVID are paid to reduce their water use by not irrigating a portion of their land. A maximum of 29% of the lands within the Palo Verde Valley can be hallowed in any given year. Under the terms of the QSA, water savings within the PVID service area are made available to Metropolitan. This program provides up to 133 TAF of water to be available to Metropolitan in certain years. In 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014 approximately 108.7, 105.0, 72.4, 94.3, 120.2, 116.3, 122.2, 73.7, 32.8, and 43.0 TAF of water, respectively, were saved and made available to Metropolitan. In March 2009, Metropolitan and PVID entered into a one-year supplemental fallowing program within PVID that provided for the fallowing of additional acreage, with savings of 24.1 TAF in 2009 and 32.3 TAF in 2010.

Southern Nevada Water Authority and Metropolitan Storage and Interstate Release Agreement

Southern Nevada Water Authority (SNWA) has undertaken extraordinary water conservation measures to maintain its consumptive use within Nevada's basic apportionment of 300 TAF. The success of the conservation program has resulted in unused basic apportionment for Nevada. As SNWA expressed interest in storing a portion of the water with Metropolitan, the agencies, along with the United States and the Colorado River Commission of Nevada, entered into a storage and interstate release agreement in October 2004. Under the agreement, additional Colorado River water supplies are made available to Metropolitan when there is space available in the CRA to receive the water. SNWA will have stored approximately 330,000 AF with Metropolitan through 2015. SNWA is not expected to call upon Metropolitan to return water until after 2019.

Lower Colorado Water Supply Project

In March 2007, Metropolitan, the City of Needles, and the USBR executed a Lower Colorado Water Supply Project contract. Under the contract, Metropolitan receives, on an annual basis, Lower Colorado Water Supply Project water unused by Needles and other entities adjacent to the river that do not have rights or have insufficient rights to use Colorado River water. The water supply for the project comes from groundwater wells located along the All-American Canal. A portion of the payments made by Metropolitan to Needles are placed in a trust fund for potentially acquiring a new water supply for the

Project should the groundwater pumped from the project's wells become too saline for use. In 2014, Metropolitan received 6.1 TAF from this project and is projected to receive 5.8 TAF in 2015.

Lake Mead Storage Program

In May 2006, Metropolitan and the USBR executed an agreement for a demonstration program that allowed Metropolitan to leave conserved water in Lake Mead that Metropolitan would otherwise have used in 2006 and 2007. USBR would normally make unused water available to other Colorado River water users, so the program included a provision that water left in Lake Mead must be conserved through extraordinary conservation measures and not simply be water that was not needed by Metropolitan in the year it was stored. This extraordinary conservation was accomplished through savings realized under the Palo Verde Land Management, Crop Rotation and Water Supply Program. Through the two-year demonstration program, Metropolitan created 44.8 TAF of "Intentionally Created Surplus" (ICS) water.

In December 2007, Metropolitan entered into agreements to set both the rules under which ICS water is developed, stored in, and delivered from Lake Mead. The amount of water stored in Lake Mead, created through extraordinary conservation, that is available for delivery in a subsequent year is reduced by a one-time deduction of 5% resulting in additional system water in storage in the lake, and an annual evaporation loss of 3%, beginning in the year following the year the water is stored. Metropolitan created ICS water in 2009, 2010, 2011, and 2012 and withdrew ICS water in 2008, 2013, and 2014. As of January 1, 2015, Metropolitan had a total of 61.8 TAF of Extraordinary Conservation ICS water in Lake Mead.

The December 2007 federal guidelines concerning the operation of the Colorado River system reservoirs provided the ability for agencies to create "System Efficiency ICS" through the development and funding of system efficiency projects that save water that would otherwise be lost from the Colorado River. To that end, in 2008 the Central Arizona Water Conservation District (CAWCD), SNWA, and Metropolitan contributed funds for the construction of the Drop 2 (Brock) Reservoir by the USBR. The purpose of the Drop 2 (Brock) Reservoir is to increase the capacity to regulate deliveries of Colorado River water at Imperial Dam reducing the amount of excess flow downstream of the dam by approximately 70 TAF annually. In return for its $25 million net contribution toward construction, operation, and maintenance, 100 TAF of water that was stored in Lake Mead was assigned to Metropolitan as System Efficiency ICS. Through 2014, Metropolitan has diverted 35 TAF of this amount, with 65 TAF remaining in storage.

In 2009, Metropolitan entered into an agreement with the United States, SNWA, the Colorado River Commission of Nevada, and CAWCD to have USBR conduct a one-year pilot operation of the Yuma Desalting Plant at one-third capacity. The pilot project operated between May 2010 and March 2011 and provided data for future decision making regarding long-term operation of the Plant and developing a near-term water supply. Metropolitan's contribution toward plant operating costs secured 24.4 TAF of System Efficiency ICS which was stored in Lake Mead as of January 1, 2015.

Quagga Mussel Control Program

The presence and spawning of quagga mussels in the lower Colorado River from Lake Mead through Lake Havasu poses a threat to Metropolitan and other Colorado River water users due to the potential to continuously seed water conveyance systems with mussel larvae. Chlorination is the most frequently used means to control mussel larvae entering water systems.

Metropolitan developed the Quagga Mussel Control Program (QMCP) in 2007 to address the long-term introduction of mussel larvae into the CRA from the lower Colorado River which is now heavily colonized from Lake Mead through Lake Havasu. The QMCP consists of surveillance activities and control measures. Surveillance activities are conducted annually alongside regularly scheduled 2 to 3 weeks long CRA shutdowns. Control activities consist of continuous chlorination at the outlet of Copper Basin Reservoir (five miles into the aqueduct), a mobile chlorinator for control of mussels on a quarterly basis at outlet towers and physical removal of mussels from the trash racks at Whitsett Intake Pumping Plant in Lake Havasu.

Since 2007, the CRA has had scheduled 2 to 3 week-long shutdowns each year for maintenance and repairs which provide the opportunity for direct inspections for mussels and the additions benefit of desiccating quagga mussels. Recent shutdown inspections have demonstrated that the combined use of chlorine and regularly scheduled shutdowns effectively control mussel infestation in the CRA since only few and small mussels have been found during these inspections.

In addition, Metropolitan has appropriated $9.55 million to upgrade chlorination facilities in the aqueduct and at two additional locations in its system, the outlets of Lakes Mathews and Skinner. It is likely that additional upgrade costs will be incurred for these facilities. Chemical control (chlorination) at Copper Basin Reservoir, Lake Mathews, and the Lake Skinner Outlet costs approximately $3.0 million to $3.2 million per year depending on the amount of Colorado River water conveyed through the aqueduct.

Achievements to Date

Metropolitan has developed a number of supply and conservation programs to increase the amount of supply available from the CRA. However, other users along the River have rights that will allow their water use to increase as their water demands increases. The Colorado River faces long-term challenges of water demands exceeding available supply with additional uncertainties due to climate change. Because Metropolitan holds the lowest priority rights in California during a normal Lake Mead storage condition, future supply available could decrease.

7.1.1.2 State Water Project Supply Reliability Actions, Projects and Programs

Much of the SWP water supply passes through the Sacramento-San Joaquin Bay-Delta (Bay-Delta). The SWP consists of a series of pump stations, reservoirs, aqueducts, tunnels, and power plants operated by DWR. This statewide water supply infrastructure provides

water to 29 urban and agricultural agencies throughout California. More than two-thirds of California's residents obtain some of their drinking water from the Bay-Delta system.

The Bay-Delta's declining ecosystem, caused by a number of factors that include agricultural runoff, predation of native fish species, urban and agricultural discharge, changing ecosystem food supplies, and overall system operation, has led to reduction in water supply deliveries. SWP delivery restrictions due to regulatory requirements resulted in the loss of about 1.5 MAF of supplies to Metropolitan from 2008 through 2014, reducing the likelihood that regional storage can be refilled in the near-term. Operational constraints will likely continue until a long-term solution to the problems in the Bay-Delta is identified and implemented.

In April 2015, the Brown Administration announced California WaterFix, as well as a separate ecosystem restoration effort called California EcoRestore. Together, the California WaterFix and California EcoRestore will make significant contributions toward achieving the coequal goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Delta ecosystem established in the Sacramento-San Joaquin Delta Reform Act of 2009. In addition to enhancing the Delta Ecosystem there are a number major actions, projects, and programs Metropolitan has undertaken to improve SWP reliability.

The Bay Delta Conservation Plan

The Bay Delta Conservation Plan (BDCP) was prepared through a collaboration of state, federal, and local water agencies, state and federal fish agencies, environmental organizations, and other interested parties. At the outset of the BDCP process, a planning agreement was developed and executed among the participating parties and a Steering Committee was formed. The BDCP identified a set of conservation measures including water conveyance improvements and restoration actions to contribute to the recovery of endangered and sensitive species and their habitats in California's Sacramento-San Joaquin Delta. The BDCP was formulated to contribute to the state's co-equal goals of water supply reliability and ecosystem restoration.

Lead agencies for the EIR/EIS were the California Department of Water Resources, the USBR, the United States Fish and Wildlife Service, and National Oceanic and Atmospheric Administration's National Marine Fisheries Service, in cooperation with the California Department of Fish and Game, the United States Environmental Protection Agency and the United States Army Corps of Engineers. Metropolitan served on the steering committee. DWR and USBR are the lead agencies for the California WaterFix.

In order to select the most appropriate elements of the final conservation plan, the BDCP considered a range of options for accomplishing these goals using information developed as part of an environmental review process. Potential habitat restoration and water supply conveyance options included in the BDCP were assessed through an Environmental Impact Report (EIR)/Environmental Impact Statement (EIS). The BDCP planning process and the supporting EIR/EIS process is being funded by state and federal water contractors. The First Administrative Draft BDCP was released in March 2012, a Second Administrative

Draft BDCP and EIR/EIS was released in March 2012 and the Public Draft BDCP and EIR/EIS was released December 2013. Each of the above draft documents were released to the public. The official public comment draft was released in December 2013.

A new permitting approach and associated new alternatives to the BDCP were announced in April 2015. The California WaterFix and California EcoRestore would be implemented under a different Endangered Species Act permitting process. This would fulfill the requirement of the 2009 Delta Reform Act to contribute toward meeting the coequal goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Delta ecosystem. DWR and USBR serve as lead agencies for the California WaterFix. The new water conveyance facilities included in Alternative 4 (the BDCP) would be constructed and operated under the California WaterFix. Proposes changes to the design of the water conveyance facilities reduce the overall environmental/construction impacts to the environment, minimize disruptions to local communities, and increase long term operational and cost benefits.

Some of the engineering improvements configuration improvements would include moving the tunnel alignment away from local communities and environmentally sensitive areas. The elimination of pumping plants, reduction of permanent power lines and power use, and the reconfiguration of intake and pumping facilities sediment basins and reconfiguration/relocation of the construction staging sites in the North Delta will lessen construction and longer term operational impacts. If implemented, these would result in reduced environmental and construction impacts and increase improved long-term operational and cost benefits.

The main objective under the EcoRestore Program is to pursue at least 30,000 acres of Delta habitats over the next five years. These restoration programs would include projects and actions that are in compliance with pre-existing regulatory requirements designed to improve the overall health of the Delta. Other priority restoration projects would also be identified by the Delta Conservancy and other local governments. Funding would be provided through multiple sources including state bonds and other state-mandated funds, State Water Project/Central Valley Project contractors' funds as part of existing regulatory obligations and from various local and federal partners.

As part of the new alternatives and the State's proposed project, the regulatory approach to obtaining state and federal endangered species compliance is shifting from the BDCP Habitat Conservation Plan/Natural Community Conservation Plan strategy to an approach that contemplates a Biological Opinion pursuant to Federal ESA Section 7 and a State 2081 Permit. This approach as well as the proposed revision to the new water facilities and ecosystem restoration actions is evaluated in the partially Recirculated Draft EIR/EIS released in July 2015.

The State Water Resources Control Board (SWRCB) is continuing its phased review and update of the 2006 Water Quality Control Plan (WQCP) for the Bay-Delta. The first phase focuses on the southern Delta salinity objectives for the protection of agriculture, San Joaquin River flow objectives for the protection of fish and wildlife, and a program of implementation for achieving those objectives. The second phase considers the

comprehensive review of the other elements of the Bay-Delta WQCP, including but not limited to Sacramento River and Delta outflow objectives.

Metropolitan has been collaborating with water users and other stakeholders to develop sound science and technical analyses in support of the WQCP review process, including sharing results in technical forums and publishing findings in peer-reviewed scientific journals. Metropolitan has been meeting with Board members and staff to share findings as new science and analyses are developed and to encourage close coordination between BDCP and WQCP updates.

Monterey Amendment

The Monterey Amendment originated from disputes between the urban and agricultural SWP contractors over how contract supplies are to be allocated in times of shortage. In 1994, in settlement discussions in Monterey, the contractors and DWR reached an agreement to settle their disputes by amending certain provisions the long-term water supply contracts. These changes, known as the Monterey Amendment, altered the water allocation procedures such that both shortages and surpluses would be shared in the same manner for all contractors, eliminating the prior "agriculture first" shortage provision. In turn, the agricultural contractors agreed to permanently transfer 130 TAF to urban contractors and permanently retire 45 TAF of their contracted supply.

The amendment facilitated several important water supply management practices including ground water banking, voluntary water marketing, and more flexible and efficient use of SWP facilities such as borrowing from Castaic Lake and Lake Perris and using carryover storage in San Luis Reservoir to enhance dry-year supplies. It also provided for the transfer of DWR land to the Kern County Water Agency for development of the Kern Water Bank. The Monterey Amendment was challenged in court, and the original Environmental Impact Report (EIR) invalidated. Following a settlement, DWR completed a new EIR and concluded the CEQA review in May 2010.

However, the project has been challenged again in a new round of lawsuits. Central Delta Water Agency, South Delta Water Agency, California Water Impact Network, California Sportfishing Protection Alliance, and the Center For Biological Diversity filed a lawsuit against DWR in Sacramento County Superior Court challenging the validity of the EIR under CEQA and the validity of underlying agreements under a reverse validation action (the "Central Delta I" case). These same plaintiffs filed a reverse validation lawsuit against the Kern County Water Agency in Kern County Superior Court ("Central Delta II").

This lawsuit targets a transfer of land from Kern County Water Agency to the Kern Water Bank, which was completed as part of the original Monterey Agreement. The third lawsuit is an EIR challenge brought by Rosedale—Rio Bravo Water Storage District and Buena Vista Water Storage District against DWR in Kern County Superior Court ("Rosedale"). The Central Delta II and Rosedale cases were transferred to Sacramento Superior Court, and the three cases were consolidated for trial.

In January 2013, the Court ruled that the validation cause of action in Central Delta I was time-barred by the statute of limitations. On October 2, 2014, the court issued its final

rulings in Central Delta I and Rosedale, holding that DWR must complete a limited scope remedial CEQA review addressing the potential impacts of the Kern Water Bank. However, the court's ruling also allows operation of the State Water Project to continue under the terms of the Monterey Agreement while the remedial CEQA review is prepared and leaves in place the underlying project approvals while DWR prepares the remedial CEQA review. The Central Delta II case was stayed pending resolution of the Central Delta I case. The plaintiffs have appealed the decision.

SWP Terminal Storage

Metropolitan has contractual rights to 65 TAF of flexible storage at Lake Perris (East Branch terminal reservoir) and 154 TAF of flexible storage at Castaic Lake (West Branch terminal reservoir). This storage provides Metropolitan with additional options for managing SWP deliveries to maximize yield from the project. Over multiple dry years, it can provide Metropolitan with 73 TAF of additional supply. In a single dry year like 1977, it can provide up to 219 TAF of additional supply to Southern California.

Yuba Dry Year Water Purchase Program

In December 2007, Metropolitan entered into an agreement with DWR providing for Metropolitan's participation in the Yuba Dry Year Water Purchase Program between Yuba County Water Agency and DWR. This program provides for transfers of water from the Yuba County Water Agency during dry years through 2025.

Desert Water Agency/Coachella Valley WD SWP Table A Transfer

Under the transfer agreement, Metropolitan transferred 100 TAF of its SWP Table A contractual amount to Desert Water Agency/CVWD (DWCV). Under the terms of the agreement, DWCV pays all SWP charges for this water, including capital costs associated with capacity in the California Aqueduct to transport this water to Perris Reservoir, as well as the associated variable costs. The amount of water actually delivered in any given year depends on that year's SWP allocation. Water is delivered through the existing exchange agreements between Metropolitan and DWCV, under which Metropolitan delivers Colorado River supplies to DWVC equal to the SWP supplies delivered to Metropolitan. While Metropolitan transferred 100 TAF of its Table A amount, it retained other rights, including interruptible water service; its full carryover amounts in San Luis Reservoir; its full use of flexible storage in Castaic and Perris Reservoirs; and any rate management credits associated with the 100 TAF.

In addition, Metropolitan is able to recall the SWP transfer water in years in which Metropolitan determines it needs the water to meet its water management goals. The main benefit of the agreement is to reduce Metropolitan's SWP fixed costs in wetter years when there are more than sufficient supplies to meet Metropolitan's water management goals, while at the same time preserving its dry-year SWP supply. In a single critically dry-year like 1977, the call-back provision of the entitlement transfer can provide Metropolitan about 5 TAF of SWP supply. In multiple dry years like 1990-1992, it can provide Metropolitan about 26 TAF of SWP supply.

Desert Water Agency/Coachella Valley WD Advance Delivery Program

Under this program, Metropolitan delivers Colorado River water to the Desert Water Agency and CVWD in advance of the exchange for their SWP Contract Table A allocations. In addition to their Table A supplies, Desert Water Agency and CVWD, subject to Metropolitan's written consent, may take delivery of SWP supplies available under Article 21 and the Turn-back Pool Program. By delivering enough water in advance to cover Metropolitan's exchange obligations, Metropolitan is able to receive Desert Water Agency and CVWD's available SWP supplies in years in which Metropolitan's supplies are insufficient without having to deliver an equivalent amount of Colorado River water. This program allows Metropolitan to maximize delivery of SWP and Colorado River water in such years.

Desert Water Agency/Coachella Valley WD Other SWP Deliveries

Since 2008, Metropolitan has provided Desert Water Agency and CVWD written consent to take delivery of non-SWP supplies separately acquired by each agency from the SWP facilities. These deliveries include water acquired from the Yuba Dry Year Water Purchase Program and the 2009 Drought Water Bank. Metropolitan has also consented to:

- 10 TAF of exchange deliveries to CVWD for non-SWP water acquired from the San Joaquin Valley from 2008 through 2010,
- 36 TAF of exchange deliveries to Desert Water Agency for non-SWP water acquired from the San Joaquin Valley from 2008 through 2015, and
- 16.5 TAF of exchange deliveries to CVWD from groundwater storage of Kern River flood flows or SWP water delivered from Kern County Water Agency provided by Rosedale Rio Bravo Water Storage District from 2012 through 2035.

7.1.1.3 Central Valley/State Water Project Storage and Transfer Programs

Metropolitan increases the reliability of supplies received from the California Aqueduct by developing flexible SWP storage and transfer programs. Over the years, Metropolitan has developed numerous voluntary SWP storage and transfer programs, to secure additional dry-year water supplies.

Metropolitan has a long history of managing the wide fluctuations of SWP supplies from year to year by forming partnerships with Central Valley agricultural districts along the California Aqueduct, as well as with other Southern California SWP Contractors. These partnerships allow Metropolitan to store its SWP supplies during wetter years for return in future drier years. Some programs also allow Metropolitan to purchase water in drier years for delivery via the California Aqueduct to Metropolitan's service area.

In addition, the SWP storage and transfer programs have served to demonstrate the value of partnering, and increasingly, Central Valley agricultural interests see partnering with Metropolitan as a sensible business practice beneficial to their local district and regional economy. Metropolitan is currently operating several SWP storage programs that serve to increase the reliability of supplies received from the California Aqueduct. Metropolitan is

also pursuing a new storage program with Antelope Valley-East Kern Water Agency, which is currently under development. In addition, Metropolitan pursues SWP water transfers on an as needed basis.

Semitropic Storage Program

Metropolitan has a groundwater storage program with Semitropic Water Storage District located in the southern part of the San Joaquin Valley. The maximum storage capacity of the program is 350 TAF. The specific amount of water Metropolitan can store in and subsequently expect to receive from the programs depends upon hydrologic conditions, any regulatory requirements restricting Metropolitan's ability to export water for storage, and the demands placed on the Semitropic Program by other program participants. In 2014, Metropolitan amended the program to increase the return yield by an additional 13.2 TAF per year.

The minimum annual yield available to Metropolitan from the program is currently 34.7 TAF, and the maximum annual yield is 236.2 TAF, depending on the available unused capacity and the State Water Project allocation. During wet years, Metropolitan has the discretion to use the program to store portions of its SWP water that are in excess of the amounts needed to meet Metropolitan's service area demand. In Semitropic, the water is delivered to local farmers who use the water in-lieu of pumping groundwater. During dry years, the district returns Metropolitan's previously stored water to Metropolitan by direct groundwater pump-in return or by exchange of SWP water.

Arvin-Edison Storage Program

Metropolitan amended the groundwater storage program with Arvin-Edison Water Storage District in 2008 to include the South Canal Improvement Project. The project increases the reliability of Arvin-Edison returning higher water quality to the California Aqueduct. In addition, Metropolitan and Arvin-Edison often enter into annual operational agreements to optimize program operations in any given year. The program storage capacity is 350 TAF. The specific amount of water Metropolitan can expect to store in and subsequently receive from the programs depends upon hydrologic conditions and any regulatory requirements restricting Metropolitan's ability to export water for storage. The storage program is estimated to deliver 75 TAF.

During wet years, Metropolitan has the discretion to use the program to store portions of its SWP supplies which are in excess of the amounts needed to meet Metropolitan's service area demand. The water can be either directly recharged into the groundwater basin or delivered to district farmers who use the water in-lieu of pumping groundwater. During dry years, the district returns Metropolitan's previously stored water to Metropolitan by direct groundwater pump-in return or by exchange of surface water supplies. In 2015, Metropolitan funded the installation of three new wells at a cost of $3 million that will restore the return reliability by 2.5 TAF per year. The funding will ultimately be recovered through credits against future program costs.

San Bernardino Valley MWD Storage Program

The San Bernardino Valley MWD Storage program allows for the purchase of a portion of San Bernardino Valley MWD's SWP supply. The program includes a minimum purchase provision of 20 TAF and the option of purchasing additional supplies when available. This program can deliver between 20 TAF and 70 TAF in dry years, depending on hydrologic conditions. The expected delivery for a single dry year similar to 1977 is 20 TAF should supplies be available. The agreement with San Bernardino Valley MWD also allows Metropolitan to store up to 50 TAF of transfer water for use in dry years. The agreement can be renewed until December 31, 2035.

San Gabriel Valley Metropolitan Exchange Program

The San Gabriel Valley MWD program allows for the exchange of up to 5 TAF each year. For each acre-foot Metropolitan delivers to the City of Sierra Madre, a San Gabriel Valley MWD member agency, San Gabriel Valley MWD provides two acre-feet to Metropolitan in the Main San Gabriel Basin, up to 5 TAF. The program provides increased reliability to Metropolitan by allowing additional water to be delivered to Metropolitan's member agencies, Three Valleys MWD and Upper San Gabriel Valley MWD.

Antelope Valley-East Kern Water Agency Exchange and Storage Program

The Antelope Valley-East Kern Water Agency (AVEK) exchange and storage program provides Metropolitan with additional supplies and increased reliability. Under the exchange program, for every two acre-feet Metropolitan receives, Metropolitan returns one acre-foot to AVEK to improve its reliability. The exchange program is expected to deliver 30 TAF over ten years, with 10 TAF available in dry years. Under the program, Metropolitan will also be able to store up to 30 TAF in the AVEK's groundwater basin, with a dry year return capability of 10 TAF.

Kern-Delta Water District Storage Program

This groundwater storage program has 250 TAF of storage capacity. The program is capable of providing up to 50 TAF of dry-year supply. In 2015, Metropolitan funded the cross river pipeline that, when completed, will help improve Metropolitan's return reliability by reducing losses during exchanges. Water for storage can be either directly recharged into the groundwater basin or delivered to district farmers who use the water in-lieu of pumping groundwater. During dry years, the district returns Metropolitan's previously stored water to Metropolitan by direct groundwater pump-in return or by exchange of surface water supplies.

Mojave Storage Program

Metropolitan entered into a groundwater banking and exchange transfer agreement with Mojave Water Agency on October 29, 2003. This agreement was amended in 2011 to allow for the cumulative storage of up to 390 TAF. The agreement allows for Metropolitan to store water in on exchange account for later return. Through 2021, and when the State Water Project allocation is 60% or less, Metropolitan can annually withdraw the Mojave Water Agency's State Water Project contractual amounts in excess of a 10% reserve. When

the State Water Project allocation is over 60%, the reserved amount for Mojave's local needs increases to 20%. Under a 100% allocation, the State Water Contract provides Mojave Water Agency 82.8 TAF of water.

Central Valley Transfer Programs

Metropolitan secures Central Valley water transfer supplies via spot markets and option contracts to meet its service area demands when necessary. Hydrologic and market conditions, and regulatory measures governing Delta pumping plant operations, will determine the amount of water transfer activity occurring in any year. Recent transfer market activity, described below, provides examples of how Metropolitan has secured water transfer supplies as a resource to fill anticipated supply shortfalls needed to meet Metropolitan's service area demands.

In 2003, Metropolitan secured options to purchase approximately 145 TAF of water from willing sellers in the Sacramento Valley during the irrigation season. These options protected against potential shortages of up to 650 TAF within Metropolitan's service area that might have arisen from a decrease in Colorado River supply or as a result of drier-than-expected hydrologic conditions. Using these options, Metropolitan purchased approximately 125 TAF of water for delivery to the California Aqueduct.

In 2005, Metropolitan, in partnership with seven other State Water Contractors, secured options to purchase approximately 130 TAF of water from willing sellers in the Sacramento Valley, of which Metropolitan's share was 113 TAF. Metropolitan also had the right to assume the options of the other State Water Contractors if they chose not to purchase the transfer water. Due to improved hydrologic conditions, Metropolitan and the other State Water Contractors did not exercise these options.

In 2008, Metropolitan, in partnership with seven other State Water Contractors, secured approximately 40 TAF of water from willing sellers in the Sacramento Valley, of which Metropolitan's share was approximately 27 TAF.

In 2009, Metropolitan, in partnership with eight other buyers, participated in a statewide Drought Water Bank, which secured approximately 74 TAF, of which Metropolitan's share was approximately 37 TAF.

In 2010, Metropolitan, in partnership with three other State Water Contractors, secured approximately 100 TAF of water from willing sellers in the Sacramento Valley, of which Metropolitan's share was approximately 88 TAF. Metropolitan also purchased approximately 18 TAF of water from Central Valley Project Contractors located in the San Joaquin Valley. In addition, Metropolitan entered into an unbalanced exchange agreement that resulted in Metropolitan receiving approximately 37 TAF.

In 2015, Metropolitan, in partnership with eight other State Water Contractors, secured approximately 20 TAF of water from willing sellers in the Sacramento Valley, of which Metropolitan's share was approximately 14 TAF.

In addition, Metropolitan has secured water transfer supplies under the Yuba Accord, which is a long-term transfer agreement. To date, Metropolitan has purchased approximately 165 TAF.

Finally, Metropolitan has secured water transfer supplies under the Multi-Year Water Pool Demonstration Program. In 2013 and 2015, Metropolitan secured 30 TAF and 1.3 TAF, respectively.

Metropolitan's recent water transfer activities demonstrated Metropolitan's ability to develop and negotiate water transfer agreements either working directly with the agricultural districts who are selling the water or through a statewide Drought Water Bank. Because of the complexity of cross-Delta transfers and the need to optimize the use of both CVP and SWP facilities, DWR and USBR are critical players in the water transfer process, especially when shortage conditions increase the general level of demand for transfers and amplify ecosystem and water quality issues associated with through-Delta conveyance of water. Therefore, Metropolitan views state and federal cooperation to facilitate voluntary, market-based exchanges and sales of water as a critical component of its overall water transfer strategy.

Achievements to Date

Metropolitan has made rapid progress to date developing SWP storage and transfer programs. Most notably, Metropolitan has utilized approximately 457 TAF to supplement its SWP supplies during the recent 2012-2015 unprecedented drought. Of this total, approximately 325 TAF are from SWP storage program extractions in Semitropic, Arvin, Kern Delta, and Mojave; 57 TAF are from the San Bernardino and SGV/MWD programs; and 78 TAF of SWP transfer supplies were purchased from the SWC Buyers Group, Multi-Year Water Pool, and Yuba water purchase programs.

7.2 RELIABILITY BY TYPE OF YEAR

In their 2015 UWMP dated June 2016, Metropolitan estimated supply capability and projected demands for an average (normal) year based on an average of hydrologies for the years 1922-2012; for a single dry-year based on a repeat of the hydrology in the year 1977; and for multiple dry years based on a repeat of the hydrology of 1990-1992. These estimates were summarized in Tables 2-4, 2-5, and 2-6 of their 2015 UWMP, which are included in the Appendix F of this report for reference.

Table 2-4 summarizes the sources of supply for the single dry year (1977 hydrology), while Table 2-5 shows the region's ability to respond in future years under a repeat of the 1990-92 hydrology. Table 2-5 provides results for the average of the three dry-year series rather than a year-by-year detail because most of Metropolitan's dry-year supplies are designed to provide equal amounts of water over each year of a three-year period. These tables show that the region can provide reliable water supplies under both the single driest year and the multiple dry-year hydrologies. Table 2-6 reports the expected situation on the average over-all historic hydrologies from 1922 to 2012. A summary of the information provided in Metropolitan Tables 2-4, 2-5, and 2-6 is shown in Table 7-1A.

For each of these scenarios there is a projected surplus of supply in every forecast year. Projected supply surpluses, based on the capability of current supplies, range from 0.1% to 87% of projected demands. With the inclusion of supplies under development, potential surpluses range from 5% to 110% of projected demands. Metropolitan's supply capabilities were developed using the following assumptions:

Table 7-1A: Metropolitan Supply Capability and Projected Demands (AFY)					
Single Dry Year Metropolitan Supply Capability and Projected Demands (1977 Hydrology)					
Fiscal Year	**2020**	**2025**	**2030**	**2035**	**2040**
Capability of Current Supplies	2,584,000	2,686,000	2,775,000	2,905,000	2,941,000
Projected Demands	2,005,000	2,066,000	2,108,000	2,160,000	2,201,000
Projected Surplus	579,000	620,000	667,000	745,000	740,000
Projected Surplus %[a]	29%	30%	32%	34%	34%
Supplies under Development	63,000	100,000	316,000	358,000	398,000
Potential Surplus	642,000	720,000	983,000	1,103,000	1,138,000
Potential Surplus %[a]	32%	35%	47%	51%	52%
Multiple Dry Year Metropolitan Supply Capability and Projected Demands (1990-1992 Hydrology)					
Fiscal Year	**2020**	**2025**	**2030**	**2035**	**2040**
Capability of Current Supplies	2,103,000	2,154,000	2,190,000	2,242,000	2,260,000
Projected Demands	2,001,000	2,118,000	2,171,000	2,216,000	2,258,000
Projected Surplus	102,000	36,000	19,000	26,000	2,000
Projected Surplus %[a]	5%	2%	1%	1%	0.1%
Supplies under Development	43,000	80,000	204,000	245,000	286,000
Potential Surplus	145,000	116,000	223,000	271,000	288,000
Potential Surplus %[a]	7%	5%	10%	12%	13%
Average Year Metropolitan Supply Capability and Projected Demands (1922-2012 Hydrology)					
Fiscal Year	**2020**	**2025**	**2030**	**2035**	**2040**
Capability of Current Supplies	3,448,000	3,550,000	3,658,000	3,788,000	3,824,000
Projected Demands	1,860,000	1,918,000	1,959,000	2,008,000	2,047,000
Projected Surplus	1,588,000	1,632,000	1,699,000	1,780,000	1,777,000
Projected Surplus %[a]	85%	85%	87%	89%	87%
Supplies under Development	63,000	100,000	386,000	428,000	468,000
Potential Surplus	1,651,000	1,732,000	2,085,000	2,208,000	2,245,000
Potential Surplus %[a]	89%	90%	106%	110%	110%

(a) As a percentage of projected demand
Source – 2015 Metropolitan Urban Water Management Plan, June 2016

7.2.1 Assumptions for Colorado River Aqueduct Supplies

Colorado River Aqueduct supplies include supplies that would result from existing and committed programs and from implementation of the QSA and related agreements. The QSA establishes the baseline water use for each of the agreement parties and facilitates the transfer of water from agricultural agencies to urban uses. Colorado River Water Management Programs are potentially available to supply additional water up to the CRA capacity of 1.2 MAF on an as needed basis.

7.2.2 Assumptions for State Water Project Supplies

SWP supplies are estimated using the 2015 SWP Delivery Capability Report distributed by DWR in July 2015. The 2015 Delivery Capability Report presents the current DWR estimate of the amount of water deliveries for current (2015) conditions and conditions 20 years in the future. These estimates incorporate restrictions on SWP and CVP operations in accordance with the biological opinions of the U.S. Fish and Wildlife Service and National Marine Fisheries Service issued on December 15, 2008, and June 4, 2009, respectively.

Under the 2015 Delivery Capability Report with existing conveyance and low outflow requirements scenario, the delivery estimates for the SWP for 2020 conditions as percentage of Table A amounts, are 12%, equivalent to 230 TAF, under a single dry-year (1977) condition and 51%, equivalent to 975 TAF, under the long-term average condition.

In dry, below-normal conditions, Metropolitan has increased the supplies received from the California Aqueduct by developing flexible Central Valley/SWP storage and transfer programs.

Over the last two years under the pumping restrictions of the SWP, Metropolitan has worked collaboratively with the other contractors to develop numerous voluntary Central Valley/SWP storage and transfer programs. The goal of these storage/transfer programs is to develop additional dry-year supplies that can be conveyed through the California Aqueduct during dry hydrologic conditions and regulatory restrictions.

A key component of Metropolitan's water supply capability is the amount of water in Metropolitan's storage facilities. 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 the Water Supply Allocation plan (WSAP), is dependent on its storage resources.

In developing the supply capabilities for the 2015 UWMP, Metropolitan assumed the current (2015) storage levels at the start of simulation and used the median storage levels going into each of the five-year increments based on the balances of supplies and demands. Under the median storage condition, there is an estimated 50% probability that storage levels would be higher than the assumption used, and a 50% probability that storage levels would be lower than the assumption used.

All storage capability figures shown in the 2015 UWMP reflect actual storage program conveyance constraints. It is important to note that under some conditions, Metropolitan may choose to implement the WSAP in order to preserve storage reserves for a future year, instead of using the full supply capability. This can result in impacts at the retail level even under conditions where there may be adequate supply capabilities to meet demands.

The basis of water year and the available supply as a percentage of average projected demand for average year, single-dry year and multiple-dry years are shown in Table 7-1, but does not include Metropolitan-estimated surplus supplies as shown in Table 7-1A.

Table 7-1: Basis of Water Year Data

Year Type	Base Year	Available Supplies if Year Type Repeats
		% of Average Supply[(a)]
Average Year	1922 to 2012	100%
Single-Dry Year	1977	100%
Multiple-Dry Years 1st Year	1990 to 1992	100%
Multiple-Dry Years 2nd Year	1990 to 1992	100%
Multiple-Dry Years 3rd Year	1990 to 1992	100%

(a) Not including Metropolitan-estimated surplus supplies as shown in Table 7-1A.

7.3 SUPPLY AND DEMAND ASSESSMENT

As stated in CWC 10635(a):

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

Projected normal-year average-annual City supplies and demands as developed in Table 6-9 and Table 4-3, respectively, are shown in Table 7-2. City demands are estimated to increase by 3% during a single dry-year supply scenario and by 5% during a multiple dry-year supply scenario, which are the same assumptions made in WBMWD's 2015 UWMP. Projected single-dry-year average-annual City supplies and demands are shown in Table 7-3. Projected multiple dry-year average-annual City supplies and demands are shown in Table 7-4.

As Metropolitan has determined it can meet full-service demands of its member agencies for the period of 2020 through 2040 during normal years, single dry year, and multiple dry

years with surplus supplies, and because of the City's goal to regularly upgrade and rehabilitate its well supply system to maintain groundwater supply equivalent to its groundwater rights of 4,500 AFY, it is projected the City can meet all normal year, single dry year, and multiple dry year demands as shown in Tables 7-2, 7-3, and 7-4, respectively.

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

	2020	2025	2030	2035	2040
Supply totals *(from Table 6-9)*	11,191	11,377	11,269	11,160	11,051
Demand totals *(from Table 4-3)*	11,191	11,376	11,269	11,160	11,051
Difference	0	0	0	0	0

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

	2020	2025	2030	2035	2040
Supply totals	11,527	11,718	11,607	11,495	11,383
Demand totals	11,527	11,717	11,607	11,495	11,383
Difference	0	0	0	0	0

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

		2020	2025	2030	2035	2040
First year	Supply totals	11,751	11,946	11,832	11,718	11,604
	Demand totals	11,751	11,945	11,832	11,718	11,604
	Difference	0	0	0	0	0
Second year	Supply totals	11,751	11,946	11,832	11,718	11,604
	Demand totals	11,751	11,945	11,832	11,718	11,604
	Difference	0	0	0	0	0
Third year	Supply totals	11,751	11,946	11,832	11,718	11,604
	Demand totals	11,751	11,945	11,832	11,718	11,604
	Difference	0	0	0	0	0

7.4 REGIONAL SUPPLY RELIABILITY

Regional supply reliability, specifically, the reliability of Metropolitan's imported water supply for the City and for Southern California, is detailed in Section 7.1 in conjunction

with presenting the constraints on water supply sources and the response programs developed and being developed to eliminate or lessen these constraints.

After learning from the droughts of 1977-78 and 1989-92, Metropolitan, in conjunction with its member agencies, instituted a resources planning process that is based on diversification of the region's water supply portfolio and continued efficient water use. This integrated resource planning process has recognized that only through a mix of imported and member agency local supplies, along with aggressive implementation of water conservation, can the Metropolitan service area attain overall reliability of water supply. This integrated planning effort has resulted in the following documents:

- 1996, 2004, 2010, and 2015 Integrated Resources Plans (IRP): Metropolitan's IRP process assessed potential future regional demand projections based upon anticipated population and economic growth as well as conservation potential. The IRP also includes regional supply strategies and implementation plans to better manage resources, meet anticipated demand, and increase overall system reliability.

- 1999 Water Surplus and Drought Management Plan (WSDM): The WSDM provides the policy guidance to manage the region's water supplies by integrating the operating activities of supply surplus and shortage to achieve the reliability goals of the IRP.

- 2015 Water Supply Allocation Plan (WSAP): The WSAP includes the specific formula for calculating member agency supply allocations and the key implementation elements needed for administering the allocation. The need for the WSAP arose after the 2008 Bay-Delta biological opinions and rulings that limited SWP supplies to its contractors including Metropolitan. The WSAP 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 up to 50 percent.

All of these planning documents recognize that the reliability of the Metropolitan service area is dependent on improving the reliability of imported supplies from the Colorado River and State Water Project as well as the successful implementation of future local supplies. Metropolitan is a supplemental supplier of water to Southern California and that regional reliability cannot be achieved without successfully addressing challenges to imported water reliability, developing reliable local supplies and water use efficiency.

This dependence on an integrated approach to water reliability and diversification of supplies has been the foundation of DWR's Bulletin 160, the State Water Plan, through its last several updates and is the cornerstone of Governor Brown's Water Action Plan. Under its assumptions for the successful implementation of imported water reliability programs, future local water supplies and continued conservation, Metropolitan's 2015 UWMP finds that it is able to meet full-service demands of its member agencies for the period of 2020 through 2040 during normal years, single dry year, and multiple dry years. Some of the most significant factors affecting reliability for imported water supplies include legal, environmental, water quality and climatic changes.

Successful implementation of Metropolitan's UWMP is dependent on the continued successful implementation of local water supply projects. In this regard, a new City well, Well No. 7, will be designed and constructed and is planned for operation beginning in 2017 with an estimated supply capacity of 1,950 AFY. With well rehabilitation and the construction of new Well No. 7, City groundwater production capacity is projected to increase to 5,300 AFY by the year 2017, which is an increase of approximately 200% relative to groundwater production in 2015 (1,763 AFY). It is estimated that the City will rehabilitate and replace wells as required to maintain average annual well supply at approximately 4,450 AFY, equivalent to their current groundwater rights, through the planning period.

8 WATER SHORTAGE CONTINGENCY PLANNING

Water supplies may be interrupted or reduced by droughts, earthquakes, and power outages which hinder a City's ability to effectively delivery water. Drought impacts increase with the length of a drought, as supplies in reservoirs are depleted and water levels in groundwater basins decline. The ability to manage water supplies in times of drought or other emergencies is an important part of water resources management for a community.

California's extensive system of water supply infrastructure, reservoirs, groundwater basins, and inter-regional conveyance facilities, mitigate the effect of short-term dry periods. Defining when a drought begins is a function of drought impacts to water users. Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Droughts occur slowly, over a multi-year period. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline.

During water shortage emergencies, the City will implement water conservation stages, of actions outlined in City Ordinance 15-02, "Emergency Ordinance of the City of Inglewood, California Amending Section 5-110 of Article 7 of Chapter 5 and Adding an Article 19 to Chapter 10 (Public Works) to Establish a Water Conservation and Water Supply Shortage Program," adopted on October 21, 2014, which serves as the City's Water Shortage Contingency Plan (WSCP). Ordinance 15-02 is included in Appendix G.

The City has historically adopted municipal ordinances or resolutions relating to water conservation and water shortage contingency planning including:

- Resolution No. 90-45, "A Resolution of the City of Inglewood, California Requesting and Encouraging Water Conservation Practices by All Water Users" passed and approved on May 22, 1990.
- Ordinance No. 91-6, "An Ordinance of the City of Inglewood, California Declaring a Water Shortage and Adopting Mandatory Water Conservation Practices" adopted on March 5, 1991.
- Ordinance No. 93-20, "An Ordinance of the City of Inglewood, California, Amending the Inglewood Municipal Code, Chapter 5, Article 7, Water Conservation Practices, to provide for Water Efficiency in the Landscape" adopted on July 20, 1993.
- Resolution No. 03-13, "Resolution of the City Council of the City of Inglewood, California to Require Recycled Water to be used for Purposes Permitted by Regulatory Agencies," adopted in February 11, 2003.
- Ordinance No. 15-02, "An Ordinance of the City of Inglewood, California Amending Section 5-110 of Article 7 of Chapter 5 and Adding an Article 19 to Chapter 10 (Public Works) to Establish a Water Conservation and Water Supply Shortage Program," adopted on October 21, 2014

- Resolution No. 15-04, "A Resolution of the City Council of the City of Inglewood, California Declaring the Implementation of a Level 1 Water Supply Shortage Measure for all City of Inglewood Water Service Area Residents and Businesses," adopted on October 21, 2014.

The initial 1990 Ordinance was a purely voluntary program, which encouraged a 10% reduction in water usage among residents and businesses in the City by discouraging:

- Hosing off walkways, driveways, parking areas, and other hard surfaces;
- Washing vehicles without use of a hose end shut-off, while encouraging bucket washes;
- Cleaning, filling, or refilling non-re-circulating decorative fountains;
- Watering lawns, landscape areas, parks and school grounds, between 7:00 a.m. and 7:00 p.m.; and
- Serving water in restaurants unless requested.

The voluntary program also encouraged the installation of water efficient plumbing fixtures and the use of drought-tolerant landscaping whenever possible. The Parks and Code Enforcement Department assisted water users in reducing water usage by disseminating information on water conservation techniques including customer conservation practices, low-flow toilets and the use of recycled water.

Beginning in 1991, a series of mandatory water conservation Ordinances were adopted, which made most of the practices addressed in the 1990 voluntary ordinance mandatory. Ordinances 91-6 and 93-20 establish mandatory provisions prohibiting or restricting the following water consumption activities:

- Restricting watering landscape with potable water between the hours of 4:00 p.m. and 10:00 a.m.; watering with recycled water is allowed at any time;
- Prohibiting exterior washing practices with hand-held hose unless equipped with positive shut-off nozzle;
- Prohibiting hosing off walkways, driveways, parking areas, and other hard surfaces;
- Prohibiting flushing water mains except as necessary to protect public health;
- Requiring all water leaks to be repaired within 24 hours;
- Requiring the preparation of new landscape plans for all new developments or remodels requiring a building permit; plans must include estimated water use, irrigation schedules, soils testing, use of recycled water unless an exemption has been issued; and
- Requiring conducting water audits every five years for landscaped areas in excess of one acre.

On February 11, 2003, the City Council adopted Resolution No. 03-13, which requires the use of recycled water for future development projects in the City "where feasible, appropriate and acceptable to all regulatory agencies."

On October 21, 2014, the City adopted Ordinance 15-02, which serves as the City's WSCP. The ordinance also establishes 13 practices that residents and businesses must implement to avoid unreasonable water use and waste, thereby also serving as the City's Water Waste Prevention Ordinance as discussed in Section 9.2.1.

8.1 STAGE OF ACTION

Ordinance 15-02 authorizes the Mayor and City Council to declare a Level 1, 2, or 3 water supply shortage, depending on the severity of the shortage that describes actions the City water service area customers must initiate, above and beyond, the 13 water conservation practices normally prescribed (Water Waste Prevention).

8.1.1 City Water Supply Shortage Stages (Levels)

Ordinance 15-02 specifies actions to be undertaken by the City subsequent to the declaration of a Level 1, 2 or 3 Water Shortage as defined in Table 8-1:

Table 8-1: Stages of Water Shortage Contingency Plan

Stage	% Supply Reduction	Water Supply Condition
1	10%	That due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water
2	20%	That due to drought or other water supply conditions, a higher level of water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water
3	50%	That a water shortage emergency exists and that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety

8.1.1.1 Level 1 Water Supply Shortage

A Level 1 declaration will address water shortages of up to 10% and will result in implementation of the following mandatory restrictions:

1. Implementation of all 13 normal water waste prevention practices as stated in Ordinance 15-02, Section 10-208 and presented in Section 9.2.1 (Water Waste Prevention Ordinance).
2. All residential and commercial landscape irrigation (except commercial nurseries) will be limited to:
   a. no more than three days per week during the months of April through October, but no more than two days per week during the months of November through March;
   b. All landscaped areas must be irrigated by use of water efficient devices
3. All leaks must be repaired within 72 hours

8.1.1.2 Level 2 Water Supply Shortage

A Level 2 declaration will address water shortages of up to 20% and will result in implementation of the following mandatory restrictions:

1. Implementation of all 13 normal water waste prevention practices as stated in Ordinance 15-02, Section 10-208 and presented in Section 9.2.1 (Water Waste Prevention Ordinance).
2. All residential and commercial landscape irrigation will be limited to no more than two days per week, but no more than one day per week during the months of November through March;
3. All leaks must be repaired within 48 hours;
4. Ornamental lakes or ponds can no longer be filled unless required to maintain actively managed aquatic life of significant value

8.1.1.3 Level 3 Water Supply Shortage

A Level 3 declaration will address water shortages greater than 20% and up to and including 50% shortages. A level 3 declaration will result in implementation of the following mandatory restrictions:

1. Implementation of all 13 normal water waste prevention practices as stated in Ordinance 15-02, Section 10-208 and presented in Section 9.2.1 (Water Waste Prevention Ordinance).
2. Watering or irrigating of lawn, landscape or other vegetated areas is prohibited except for:
   a. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand held hose equipped with a positive self-closing water shutoff nozzle or device
   b. For fire protection
   c. To prevent soil erosion
   d. For maintenance of rare or essential protected species

e. For maintenance of landscape in public parks, day care centers, golf course greens, and school grounds as long as it does not exceed two days per week
f. Actively irrigated environmental mitigation projects

3. All leaks must be repaired in 24 hours;
4. No new permanent or temporary potable water services will be provided;
5. Discontinue the use of ornamental fountains or similar decorative devices unless recycled water is used
6. Filling of swimming pools and outdoor spas is prohibited

8.1.1.4 City Health and Safety Requirements

The primary goal of the City's water system is to preserve the health and safety of its personnel and the public. Meeting this goal is a continuous function of the system – before, during and after a disaster or water shortage. Fire suppression capabilities will continue to be maintained during any water shortage contingency stage. Some water needs are more immediate than others. The following list of public health needs and the allowable time without potable water is a guideline and will depend on the magnitude of the water shortage:

- Hospitals – continuous need
- Emergency shelters – immediate need
- Kidney dialysis – 24 hours
- Personal hygiene, waste disposal – 72 hours

Based on commonly-accepted estimates of interior residential water use in the United States, per-capita health and safety water use requirements are shown in Table 8-1A. During the initial stage of a shortage, customers may adjust either interior and/or outdoor water use to meet the voluntary water reduction goal.

8.1.2 Metropolitan's Water Shortage Stages and Water Supply Allocations

In addition to the City's defined actions in response to water supply shortage stages (levels), Metropolitan defines water shortage/drought management stages and calculates water supply allocations to guide resource management activities on a regional basis.

8.1.2.2 Metropolitan's Water Surplus and Drought Management Plan

In 1999, Metropolitan in conjunction with its member agencies developed the WSDM Plan.[9] This plan addresses both surplus and shortage contingencies. The WSDM Plan provides guidelines for the management of regional water supplies to achieve the long-

[9] Metropolitan Water District of Southern California. Water Surplus and Drought Management Plan, Report No. 1150, August, 1999.

term supply reliability goals set forth in Metropolitan's Integrated Resources Plan (IRP) and is set forth to:

- Encourage efficient water use and economical local resource programs;
- Coordinate operations with member agencies to make as much surplus water as possible available for use in dry years;
- Pursue innovative transfers and banking programs to secure more imported water for use in dry years;
- And increase public awareness about water supply issues.

Table 8-1A: Per-Capita Health and Safety Water Use Requirements

	Non-Conserving Fixtures		Habit Changes[a]		Conserving Fixtures[b]	
Toilet	5 flushes x 5.5 gpf	27.5	3 flushes x 5.5 gpf	16.5	5 flushes x 1.28 gpf	6.4
Shower	5 min. x 4.0 gpm	20.0	4 min. x 3.0 gpm	12.0	4 min. x 2.5 gpm	10.0
Washer	12.5 gpcd	12.5	11.5 gpcd	11.5	11.5 gpcd	11.5
Kitchen	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Other	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Total		68.0	---	48.0	---	35.9
CCF per capita per year		33.0	---	23.0	---	17.5

gpcd = gallons per capita per day; gpf = gallons per flush; gpm = gallons per minute; CCF = hundred cubic feet (approximately 748 gallons)

(a) Reduced shower use from shorter time use and reduced flow. Reduced washer use from fuller loads.

(b) Fixtures include ULF 1.28 gpf toilets, 2.5 gpm showerheads, and efficient clothes washers.

The WSDM Plan guides the operations of water resources including local resources (groundwater), Colorado River water, SWP water, and regional storage to ensure regional reliability. It identifies the expected sequence of resource management actions Metropolitan will take during surpluses and shortages of water to minimize the probability of severe shortages that require curtailment of full-service demands. Mandatory allocations are avoided to the extent practicable; however, in the event of an extreme shortage Metropolitan's Water Supply Allocation Plan (as described later in this Section) will be implemented.

The WSDM Plan distinguishes between *Surpluses, Shortages, Severe Shortages,* and *Extreme Shortages.* Within the WSDM Plan, these terms have specific meaning relating to Metropolitan's capability to deliver water to the City as described below:

- Surplus: Metropolitan can meet full-service and interruptible program demands, and it can deliver water to local and regional storage.

- 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. In a Severe Shortage, Metropolitan may have to curtail Interim Agricultural Water Program (IAWP) deliveries in accordance with IAWP.
- Extreme Shortage: Metropolitan must allocate available supply to full-service customers.

The WSDM Plan also defines five surplus management stages and seven shortage management stages to guide resource management activities. Each year, Metropolitan will consider the level of supplies available and the existing levels of water in storage to determine the appropriate management stage for that year. Each stage is associated with specific resource management actions designed to: 1) avoid an Extreme Shortage to the maximum extent possible; and 2) minimize adverse impacts to retail customers should an "Extreme Shortage" occur. The current sequencing outlined in the WSDM Plan reflects anticipated responses based on detailed modeling of Metropolitan's existing and expected resource mix. This sequencing may change as the resource mix evolves.

WSDM Plan Shortage Actions by Shortage Stage

When Metropolitan must make net withdrawals from storage, it is considered to be in a shortage condition. However, under most of these stages, it is still able to meet all end-use demands for water. The following summaries describe water management actions to be taken under each of the seven shortage stages.

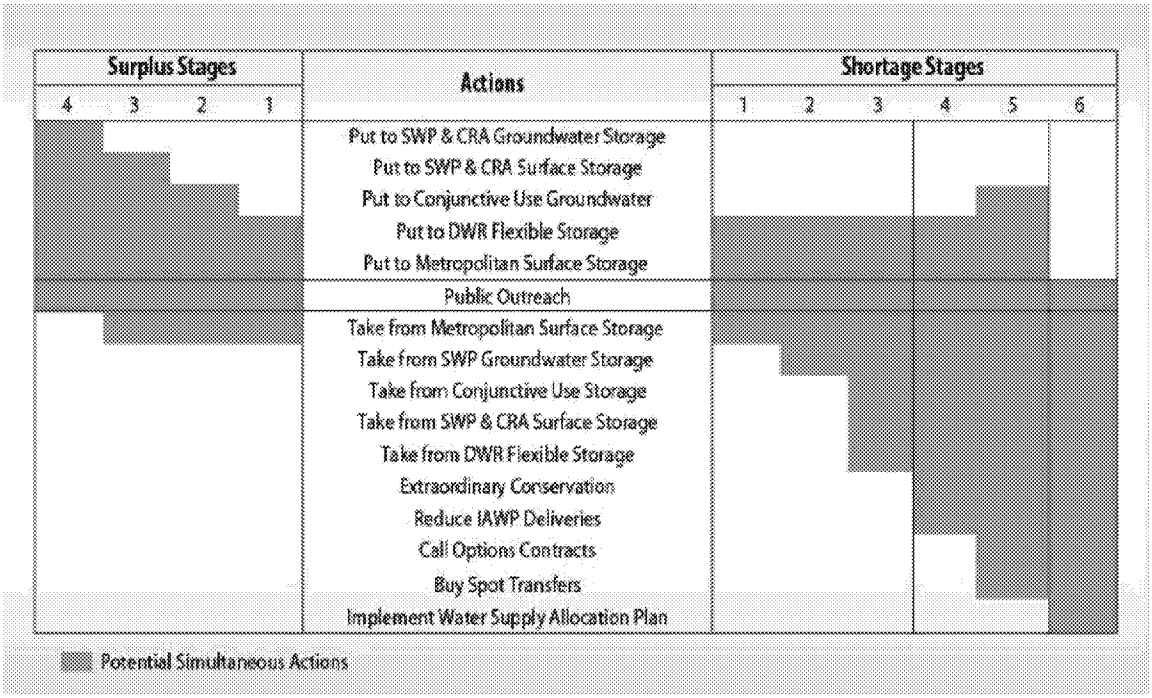
- Shortage Stage 1: Metropolitan may make withdrawals from Diamond Valley Lake.
- Shortage Stage 2: Metropolitan will continue Shortage Stage 1 actions and may draw from out-of-region groundwater storage.
- Shortage Stage 3: Metropolitan will continue Shortage Stage 2 actions and may curtail or temporarily suspend deliveries to Long Term Seasonal and Replenishment Programs in accordance with their discounted rates.
- Shortage Stage 4: Metropolitan will continue Shortage Stage 3 actions and may draw from conjunctive use groundwater storage and the SWP terminal reservoirs.
- Shortage Stage 5: Metropolitan will continue Shortage Stage 4 actions. Metropolitan's Board of Directors may call for extraordinary conservation through a coordinated outreach effort and may curtail Interim Agricultural Water Program deliveries in accordance with their discounted rates. In the event of a call for extraordinary conservation, Metropolitan's Drought Program Officer will coordinate public information activities with member agencies and monitor the effectiveness of ongoing conservation programs. The Drought Program Officer will

implement monthly reporting on conservation program activities and progress and will provide quarterly estimates of conservation water savings.

- Shortage Stage 6: Metropolitan will continue Shortage Stage 5 actions and may exercise any and all water supply option contracts and/or buy water on the open market either for consumptive use or for delivery to regional storage facilities for use during the shortage.
- Shortage Stage 7: Metropolitan will discontinue deliveries to regional storage facilities, except on a regulatory or seasonal basis, continue extraordinary conservation efforts, and implement its Water Supply Allocation Plan.

A summary of the various resource stages, anticipated actions, and supply declarations is presented in Figure 8-1.

Figure 8-1: Metropolitan's Resource Stages, Anticipated Actions & Supply Declarations



Reliability Modeling of the WSDM Plan

Using a technique known as "sequentially indexed Monte Carlo simulation," Metropolitan undertook an extensive analysis of system reservoirs, forecasted demands, and probable hydrologic conditions to estimate the likelihood of reaching each Shortage Stage through 2010. The results of this analysis demonstrated the benefits of coordinated management of regional supply and storage resources. Expected occurrence of a Severe Shortage is 4% or less in most years and never exceeded 6%; equating to an expected shortage occurring once every 17 to 25 years. An Extreme Shortage was avoided in every simulation run.

8.1.2.2 Metropolitan's Water Supply Allocation Plan[10]

Metropolitan adopted its WSAP following critically dry conditions, which affected all of Metropolitan's main supply sources in 2007. Those dry conditions coupled with a Federal Court ruling in August 2007 providing protective measures for the Delta smelt in the Sacramento-San Joaquin River Delta, brought uncertainty about future pumping operations from the State Water Project.

Metropolitan worked jointly with the member agency managers and staff to develop a WSAP to address such needs. The WSAP that was eventually adopted includes specific formulas for calculating member agency supply allocations and the key implementation elements needed for administering an allocation should a shortage be declared. The adopted allocation formulas seek to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level, and takes into account growth, local investments, changes in supply conditions and the beneficial impacts of non-potable recycled water use and the implementation of conservation savings programs. The adopted formulas are calculated in three steps: (1) base period calculations; (2) allocation year calculations, and (3) supply allocation calculations. These steps are described in further detail below.

- Step 1: Base Period Calculations: The first step in calculating a water supply allocation is to estimate water supply and demand using a historical base period with established water supply and delivery data. The base period for each of the different categories of demand and supply is calculated using data from the three most recent non-shortage years (base period), which for the current allocation were 2004-2006. The calculations take into account various factors including local supplies, wholesale supplies, retail supplies, demands, in-lieu deliveries, agricultural deliveries, conservation achieved and conservation rate structures.

- 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. A number of factors are taken into consideration in this step including: (1) allocation year retail demands; (2) allocation year local supplies; and (3) allocation year wholesale demands.

- Step 3: Supply Allocation Calculations: The final step is calculating the water supply allocation for each member agency based on the allocation year water needs identified in Step 2. Again, several elements are considered at this stage including: (1) regional shortage levels; (2) regional shortage percentages; (3) extraordinary increased production adjustments; (4) wholesale minimum allocations; (5) maximum retail impact adjustments; (6) interim agricultural

[10] Information presented in this section has been extracted from Metropolitan's Water Supply Allocation Plan, June 2009.

water program reductions; (7) conservation demand hardening credits; (8) municipal and industrial allocations; and (9) total allocation

The WSAP takes effect when a regional shortage is declared by Metropolitan's Board of Directors. The allocation period covers twelve consecutive months, from July of a given year through the following June (this period was selected to minimize the impacts of varying SWP allocations and to provide member agencies with sufficient time to implement their outreach strategies and rate modifications).

The WSAP also allows for an appeals process to address any changes or corrections to an agency's allocation. Appeals can be made to request adjustments for (1) erroneous historical data used in base period calculations; (2) unforeseen loss or gain in local supply; (3) extraordinary increases in local supply; (4) population growth rates; and (5) reviewing calculation of base period, allocation year and supply allocation figures for consistency with the standards outlined in the WSAP.

The WSAP also allows for enforcement through a penalty rate structure. Penalty rates and charges will only be assessed to the extent that an agency's total annual usage exceeds its total annual allocation. Any funds collected will be applied towards investments in conservation and local resources development within the service area of the member agency by which the penalties are incurred. No billing or assessment of penalty rates will take place until the end of the twelve-month allocation period.

Additional information on Metropolitan's Water Supply WSAP can be found in that document as previously referenced by footnote.

8.2 PROHIBITIONS ON END USES

The prohibitions on end uses for City water supply shortage levels as defined in Ordinance 15-02 is summarized in Table 8-2 and discussed below.

8.2.1 Level 1 Water Supply Shortage

A Level 1 Water Supply Shortage exists when the mayor and City Council determines that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. The following restrictions shall apply:

1. Implementation of the 13 normal water conservation practices outlined in Ordinance 15-02, Section 10-208, that serves as the City's Water Waste Prevention Ordinance as discussed in Section 9.1.1.
2. All residential and commercial landscape irrigation (except commercial nurseries) will be limited to:

Table 8-2: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1, 2, 3	Landscape - Limit landscape irrigation to specific times	Ordinance No.15-02, Section 10-208 (1) & (2)	Yes
1, 2, 3	Landscape - Restrict or prohibit runoff from landscape irrigation	Ordinance No.15-02, Section 10-208 (3)	Yes
1, 2, 3	Other - Prohibit use of potable water for washing hard surfaces	Ordinance No.15-02, Section 10-208 (4)	Yes
1, 2, 3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Ordinance No.15-02, Section 10-208 (5)	Yes
1, 2, 3	Other water feature or swimming pool restriction	Recirculating Water Required for Water Fountains and Decorative Water Features: Ordinance No.15-02, Section 10-208 (6)	Yes
1, 2, 3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Ordinance No.15-02, Section 10-208 (7)	Yes
1, 2, 3	CII - Restaurants may only serve water upon request	Ordinance No.15-02, Section 10-208 (8)	Yes
1, 2, 3	CII - Lodging establishment must offer opt out of linen service	Ordinance No.15-02, Section 10-208 (9)	Yes
1, 2, 3	CII - Other CII restriction or prohibition	No Installation of Single Pass Cooling Systems: Ordinance No.15-02, Section 10-208 (10)	Yes
1, 2, 3	CII - Other CII restriction or prohibition	No Installation of Non-recirculating Water Systems in Commercial Car Wash and Laundry Systems: Ordinance No.15-02, Section 10-208 (11)	Yes
1, 2, 3	CII - Commercial kitchens required to use pre-rinse spray valves	Ordinance No.15-02, Section 10-208 (12)	Yes

Table 8-2: Restrictions and Prohibitions on End Uses (Continued)			
Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1, 2, 3	CII - Other CII restriction or prohibition	All commercial conveyor car wash systems must have installed by 9/1/15 operational re-circulating water systems: Ordinance No.15-02, Section 10-208 (13)	Yes
1	Landscape - Limit landscape irrigation to specific days for odd & even numbered properties	Ordinance No.15-02, Section 10-210 (1.A.b.i)	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 72 hours: Ordinance No.15-02, Section 10-210 (1.A.b.ii)	Yes
2	Landscape - Limit landscape irrigation to specific times	Two days per week between April-October & one day per month between Nov.-March: Ordinance No.15-02, Section 10-210 (2.A.b.i)	Yes
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 48 hours: Ordinance No.15-02, Section 10-210 (2.A.b.ii)	Yes
2	Water Features - Restrict water use for decorative water features, such as fountains	No filling or re-filling of lakes or ponds except to sustain aquatic life: Ordinance No.15-02, Section 10-210 (2.A.b.iii)	Yes
3	Landscape - Prohibit all landscape irrigation	Ordinance No.15-02, Section 10-210 (3.A.b.i)	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 24 hours: Ordinance No.15-02, Section 10-210 (3.A.b.ii)	Yes
3	Other	Limited Potable Water Service including no new services, construction meters, will serve letters, etc. : Ordinance No.15-02, Section 10-210 (3.A.b.iii)	Yes
3	Other water feature or swimming pool restriction	Prohibit the use of potable water for filling water features, pools & spas: Ordinance No.15-02, Section 10-210 (3.A.b.iv & v)	Yes

a. no more than three days per week during the months of April through October, but no more than two days per week during the months of November through March;

b. All landscaped areas must be irrigated by use of water efficient devices

3. All leaks must be repaired within 72 hours;

8.2.2 Level 2 Water Supply Shortage

In addition to the restrictions indicated for Level 1, the following restrictions shall apply:

1. All residential and commercial landscape irrigation will be limited to no more than two days per week, but no more than one day per week during the months of November through March;
2. All leaks must be repaired within 48 hours;
3. Ornamental lakes or ponds can no longer be filled unless required to maintain actively managed aquatic life of significant value;

8.2.3 Level 3 Water Supply Shortage

A Level 3 Water Supply Shortage condition is also referred to as an "Emergency" condition. In addition to the restrictions indicated for Levels 1 & 2, the following restrictions shall apply:

1. Watering or irrigating of lawn, landscape or other vegetated areas is prohibited except for:
    a. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand held hose equipped with a positive self-closing water shutoff nozzle or device
    b. For fire protection
    c. To prevent soil erosion
    d. For maintenance of rare or essential protected species
    e. For maintenance of landscape in public parks, day care centers, golf course greens, and school grounds as long as it does not exceed two days per week
    f. Actively irrigated environmental mitigation projects
2. All leaks must be repaired in 24 hours;
3. No new permanent or temporary potable water services will be provided;
4. Discontinue the use of ornamental fountains or similar decorative devices unless recycled water is used
5. Filling of swimming pools and outdoor spas is prohibited

8.3 PENALTIES, CHARGES, OTHER ENFORCEMENT OF PROHIBITIONS

As part of Ordinance 15-02, water use restrictions are set forth in Section 10-210 "Level of Water Shortage", and penalties imposed for violation are described in Section 10-212 "Penalties and Violations". The penalties are based upon the number and frequency of violations and are discussed below:

a. Any violation may be prosecuted as a misdemeanor punishable by imprisonment in the County jail for not more than thirty days or by fine not exceeding $1,000 or by both.

b. For the first violation a written notice will be given to the customer.

c. For the second violation within the preceding (12) twelve calendar months, a penalty of not to exceed one hundred dollars ($100.00) shall be imposed by written notice to the customer.

d. For the third violation within the preceding (12) twelve calendar months a penalty of not to exceed two hundred and fifty dollars ($250.00) shall be imposed by written notice to the customer.

e. For the fourth violation within the preceding twelve (12) calendar months, a penalty of not to exceed five hundred dollars ($500.00) shall be imposed by written notice to the customer.

   The City may also give written notice to the customer indicating that it will install a flow restricting device of 1 GPM capacity for services up to one and one half inch meter size, and comparatively sized restrictors 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 charge for installing such a flow restricting device will be based upon the size of the meter and the actual cost of installation. The charge for removal of the flow restricting device and restoration of normal service shall be based on the actual cost involved.

f. In addition to any fines and the installation of a flow restrictor, the City may disconnect a customer's water service for willful violations of mandatory restrictions.

8.4 CONSUMPTION REDUCTION METHODS

CWC 10632
(a)(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

Consumption reduction methods are actions that are taken by a water agency to reduce water demand within its service area, whereas the prohibitions, addressed in Section 8.2,

limit specific uses of water. Agencies make their own determination as to which consumption reduction methods, and which stages for employing the methods, are most appropriate for their service area. City of Inglewood consumption reduction methods by WSCP stage are summarized in Table 8-3.

Table 8-3: Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
1,2,3	Expand Public Information Campaign	The City's main website contains information on water conservation including: • Current status of the water conservation program • Links to the water conservation ordinances • Tips regarding water use and conservation • Links to other websites concerning water conservation, rebate programs, & water saving ideas
1,2,3	Improve Customer Billing	The City has implemented a tiered rate structure which discourages increased water use.
1,2,3	Increase Frequency of Meter Reading	City monitors its water usage by water use category. Any changes in water demand patterns can be easily noticed and acted upon as required.
1,2,3	Provide Rebates on Plumbing Fixtures and Devices	City participates in several programs to encourage the retrofit of residential plumbing including: low flow showerheads, toilet dams, high eff. toilets, high-eff. washing machines, & SMART Irrigation Controllers.
1,2,3	Reduce System Water Loss	If, during routine inspection of the system, leaks are encountered or suspected, further evaluation is conducted, and if leaks are found, they are repaired.

8.4.1 Public Information Campaign

The City's main website contains information on water conservation including:

- Current status of the water conservation program and level of water shortage if applicable;
- Links to the water conservation ordinances including rules, regulations and fines associated with violations of watering restrictions; and
- Tips regarding water use and conservation

In addition, the City provides the following additional resource links that includes water conservation, rebate programs, water saving incentives and other information sources related to water conservation:

Education: http://saveourh2o.org

Rebates: http://socalwatersmart.com/

Conservation and water use efficiency: www.westbasin.org/water-reliability-2020/conservation/overview

The City in concert with the WBMWD have various public information campaigns that are directed at educating the public on water conservation and consumption reduction methods:

8.4.1.1 Landscape Irrigation Efficiency Program (LIEP)

The LIEP program provides free water audits for customers. Funded by the United States Bureau of Reclamation (USBR), the LIEP program includes a site survey or evaluation, a list of recommended improvements and repairs, a recommended water budget and schedule, and water efficient rotating sprinkler nozzles.

8.4.1.2 Ocean-Friendly Landscape Program

In 2006, WBMWD received a Proposition 50 grant from DWR to implement a comprehensive program called the Ocean-Friendly Landscape Program. Since 2006, this program has provided the public with the resources, education, devices and rebates to conserve water used in outdoor landscaping. This program is anticipated to end in December 2016 when the funding is exhausted. The components of this program are described below.

- Ocean-Friendly Demonstration Gardens

  WBMWD has worked with its cities and schools to construct 12 Ocean Friendly Demonstration Gardens to date. Four additional gardens are expected to be completed by the end of 2016. These gardens provide great examples of how California-friendly landscapes can conserve water, reduce runoff, reduce turf waste and pollution and also provide benefits to local wildlife, birds and insects.

- California Friendly Landscape Classes and "Hands-On-Workshops"

  During the period of 2010-2015, WBMWD worked closely with the South Bay Cities Council of Governments (SBCCOG), its cities and water retail agencies to implement over 30 California Friendly Landscape Classes and Ocean-Friendly Garden "Hands-on-Workshops" to teach residents how to construct a water-conserving garden. WBMWD used the opportunity of constructing the gardens to also have a trained professional teach residents how to install the water conserving plants and drip irrigation.

- Ocean-Friendly Landscape Program – Smart Irrigation Controllers

  As part of the Ocean-Friendly Landscape Program, WBMWD provides rebates and exchange programs for smart weather-based irrigation controllers to residents. In addition, these controllers have been installed at large landscape sites, such as parks, schools and city facilities throughout the WBMWD service area.

8.4.1.3 Smart Landscape Expo

The Smart Landscape Expo was held in 2010 and 2011 and was conducted at the Edward C. Little Water Recycling Facility. It featured two classroom workshops, two hands-on demonstrations, tours of the water recycling facility, and self-guided tours of the demonstration garden. There were 20-25 vendors including irrigation equipment vendors, water agencies and information booths as well as a native plant sale with local nurseries selling plants that could be found in the demonstration garden.

8.4.1.4 Greywater Workshops

In 2015, WBMWD launched its first greywater pilot workshop and in 2016, WBMWD plans on offering several greywater workshops to teach residents how to create a safe and legal Laundry-to-Landscape (L2L) greywater system.

8.4.2 Improved Customer Billing

In 1999, the City evaluated its water rate structure and modified it to include an increasing block rate structure, which was developed to discourage wasteful practices by increasing the unit cost of water as usage increased. The City adopted the increasing rate, in keeping with water conservation and good water system management, and phased the new rates over a three-year period. Customer billing and water rate schedules are discussed further in Section 9.2.1

8.4.3 Frequency of Meter Reading

The City meters water usage by water use category. In doing so, the City is able to gauge normal customer water use and recognize abnormal use. The City may alter its present program of usage monitoring and adopt an alternative water survey program if it becomes evident that such modification is necessary. City metering is discussed further in Section 9.2.1

8.4.4 Rebates or Giveaways of Plumbing Fixtures and Devices

The City participates in several programs to encourage the retrofit of residential plumbing. These include installation of low flow showerheads and toilet dams to conserve water. It also includes participation in ultra-low flush toilet replacement and rebate programs discussed later in this section.

The City has previously distributed water conservation kits, including showerheads, toilet dams, leak detection dye tablets, and a water conservation information booklet. Switching from a high flow showerhead to a low flow showerhead can save as much as 8,000 gallons per year per household.

The City has participated in ultra-low flush toilet distribution and rebate programs with WBMWD and Metropolitan (see below). These programs have proven to be very successful. In 2015, legislation was passed that mandates the use of toilets that are 1.28 gallon per flush or less. With funding contributions from Metropolitan and several member agencies, WBMWD provided free High-Efficiency Toilets (HET) through several one-day toilet distribution events. The annual goal was to distribute 2,000 HETs, estimated to conserve more than 26 million gallons of drinking water per year.

8.4.4.1High-Efficiency Toilet (HET) Replacement

The City has participated extensively with WBMWD in a HET replacement/distribution program.

In 1992, the City participated in a toilet replacement program (originally called the ultra-low flush toilet program) offered through an arrangement between the First African Methodist Episcopal (FAME) Church, WBMWD, Metropolitan and the U.S. Bureau of Reclamation. By March 1994, 2,000 ULFTs had been distributed. In 1995 an additional 1,000 toilets were distributed. The installation of those 3,000 toilets saved an estimated 94 AF per year. Since 2000, an additional 4,093 ULFTs have been installed.

In the early 1990s the City participated in a toilet rebate program with WBMWD whereby a $75 and $37.50 rebate were offered for the first and second ultra-low flush toilet installed in a dwelling unit. In fiscal year 1999-2000, WBMWD supplied over 900 rebates. Since 2010, an additional 9,000 HET have been distributed within the WBMWD service area.

8.4.4.2 High Efficiency Sprinkler Nozzles

Metropolitan in concert with a grant from the US Bureau of Reclamation has developed a program to replace wasteful old style sprinklers with high-efficiency sprinkler nozzles. The nozzles are multi-trajectory, rotating streams that apply water more slowly and uniformly encouraging healthy plant growth. The program is designed to use 20% less water than conventional spray heads with rebates starting at $2.00 per nozzle with a minimum quantity of 30 nozzles.

8.4.4.3 SMART Irrigation Timers

Weather Based "Smart" Controllers for landscape irrigation work on a simple principle: provide the appropriate watering schedule, adjust for weather changes and irrigate based on the needs of the landscape and soil conditions. A Smart controller will automatically reduce the watering times as the weather gets cooler and less water is needed. Then as the

weather begins to warm up, the controller will add more watering time. The way this typically works is that you set the controller for a default maximum watering time, based on the hottest time of year. Then the controller reduces that time amount by a percentage value when less water is needed.

8.4.4.4 Cash for Kitchens

WBMWD continues to partner with the SBCCOG and its South Bay Environmental Services Center (SBESC) to offer a program called, "Cash for Kitchens" for commercial kitchen facilities in the South Bay portion of our service area. Food service customers receive combined water and energy assessment and training materials for employees. Sites may also qualify to receive high-efficiency device upgrades such as pre-rinse kitchen sprayers, faucet aerators, flow restrictors and water brooms. The SBESC coordinates and conducts site visits with Southern California Gas Company commercial service technicians to provide a comprehensive water and energy review for the customers they visit. The program is available to all customers of WBMWD.

8.4.4.5 Commercial Restroom Retrofit

The Commercial Restroom Retrofit program provided qualifying businesses, schools, restaurants and other commercial and public facilities with installation of HETs, urinals and flow restriction devices to increase water-use efficiency in the non-residential sector.

8.4.4.6 Ocean Safe Car Wash Program

Ocean Safe Car Washes clean and recirculate their water to use 50-85% less than the average home car wash and help prevent runoff from entering the ocean. These car washes provide discount coupons to customers.

8.4.4.7 Turf Removal Rebates

In 2015, WBMWD was able to add an additional $1/square foot (sf) of turf removal rebate to the Metropolitan incentive of $2/sf through a grant received by USBR. The $3/sf rebate incentive for turf removal was a very successful program and funding only lasted for a few months.

8.4.5 Reduction of Water System Loss

The City works to reduce system water losses at each stage of their WSCP. The City has an ongoing water pipeline replacement program. Between FY 2010 and FY 2014, the City replaced 35,600 linear feet of pipe at a capital cost of $6.0 million.

A project was conducted as part of a greater effort, sponsored by Southern California Edison (SCE), to better understand the relationship between water loss control and direct- and embedded energy- savings. Five local governments in the SCE service territory, including the City of Inglewood, were selected as part of this pilot program. As part of the

study, Water Systems Optimization (WSO) worked with the City to accurately quantify water loss volumes by conducting a thorough water audit. In parallel, WSO performed leak detection at Inglewood. A water balance was established for the City for the audit period July 1, 2012 – June 30, 2013 (FY 2013). Some of the key findings and recommendations for the City of Inglewood are discussed in Section 9.2.5.

8.5 DETERMINING WATER SHORTAGE REDUCTIONS

In accordance with City Ordinance 15-02, water use reporting requirements will be adjusted to reflect the level of the declared shortage. Under normal water supply conditions, potable water production figures are recorded daily and totals are generally reported on a weekly basis.

During a declared water shortage, daily water production figures will be reported to applicable City staff. The water usage information will be compared to the target weekly production to verify that the reduction goal is being met. In the event targets are not being met, City staff will report that information to the City Manager. A monthly summary will be furnished to the City Council.

These modified reporting procedures will keep all levels of City government informed of water use during emergency water shortages so as to ensure responsive actions as required to protect public safety and provide essential water services.

8.6 REVENUE AND EXPENDITURE IMPACTS

A reduction in supply availability during a drought period would impact revenues for potable water. The anticipated shortfall in net operating revenues could be dealt with in a variety of individual approaches or combinations thereof including:

1. Increasing water commodity and service charges to offset revenue shortfalls;
2. Reducing annual operating expenses; including salaries, benefits, maintenance and improvement programs, and the use of outside professional services;
3. Utilizing appropriated and unappropriated fund balances and reserves earmarked for long range capital improvements to offset the operating shortfall; and
4. Temporarily diverting General fund tax revenues earmarked for future capital improvements to offset net operating losses.

The most feasible, and least disruptive alternative, would be to divert general tax revenues from future capital improvements to operating expenses. Because of prolonged drought periods affecting City water customers in the early 1990's as well as over the past few years, the City is prepared to implement both voluntary and mandatory conservation provisions when necessary. Conservation measures adopted during the two most recent drought periods proved effective. The City's drought and emergency management measures are designed to deliver necessary water savings, while minimizing, to the extent

possible, any negative effects on the lifestyles and economic basis of the City's customers. The cost of purchase of potable and recycled water from WBMWD at continuously increasing higher rates also affects operational expenses.

8.7 RESOLUTIONS OR ORDINANCE

The City has historically adopted municipal ordinances or resolutions relating to water conservation and water shortage contingency planning as summarized at the beginning of this chapter. During water shortage emergencies, the City will implement water conservation stages, of actions outlined in City Ordinance 15-02, "Emergency Ordinance of the City of Inglewood, California Amending Section 5-110 of Article 7 of Chapter 5 and Adding an Article 19 to Chapter 10 (Public Works) to Establish a Water Conservation and Water Supply Shortage Program," adopted on October 21, 2014, which serves as the City's Water Shortage Contingency Plan (WSCP). Ordinance 15-02 is included in Appendix G.

8.8 CATASTROPHIC SUPPLY INTERRUPTION

In addition to the previously-described water shortage contingency measures, the City will also implement its Emergency Operations Plan (EOP) during significant periods of drought. The EOP is designed to prepare the City for a planned response to emergency situations associated not only with intentional acts, but also with natural disasters, technological incidents, and national security emergencies. It also includes provisions for notifying and receiving direction from WBMWD and Metropolitan pertaining to imported water supply distribution. The key elements of the City's EOP include:

- Implementing an effective emergency response communication system;
- Developing an interagency mutual aid program;
- Addressing water supply, water quality, emergency operations center (EOC), and providing an information resource list which includes contact information on key personnel; and
- Training of water personnel on emergency response procedures.

During emergency situations, both the City and WBMWD are responsible for maintaining communications between the utilities and with the Metropolitan emergency response network. Good communications during emergencies will help facilitate requests for manpower and equipment, collect and process damage reports, coordinate available resources if and when Metropolitan implements its water supply allocation plan.

Since Metropolitan supplies a majority of the potable water to the City, it is important to understand the storage capability of Metropolitan and the emergency storage requirements that Metropolitan maintains. The following is a synopsis of Metropolitan's Emergency Storage Requirements.

Metropolitan's criteria for determining emergency storage requirements were established in the October 1991 Final Environmental Impact Report for the Eastside Reservoir, which is now named Diamond Valley Lake. They were again discussed in Southern California's 1996 Integrated Resources Plan. Metropolitan's Board has approved both of these documents.

Emergency storage requirements are based on the potential of a major earthquake damaging the aqueducts that transport Southern California's imported water supplies (SWP, CRA, and Los Angeles Aqueduct). The adopted criteria assume that damage from such an event could render the aqueducts out of service for six months. Metropolitan's planning, therefore, is based on 100% reduction in its supplies for a period of six months.

Metropolitan's emergency planning is based on a greater shortage than required to safeguard the region from catastrophic loss of water supply, Metropolitan has made substantial investments in emergency storage. The emergency plan outlines that under such a catastrophe, interruptible service deliveries would be suspended and firm supplies to member agencies would be restricted by a mandatory cutback of 25% from normal-year demand levels.

At the same time, water stored in surface reservoirs and groundwater basins under Metropolitan's interruptible program would be made available, and Metropolitan would draw on its emergency storage, as well as other available storage. Metropolitan has reserved approximately half of Diamond Valley Lake storage to meet such an emergency, while the remainder is available for dry-year and seasonal supplies. In addition, Metropolitan has access to emergency storage at its other reservoirs, at the SWP terminal reservoirs, and in its groundwater conjunctive use storage accounts.

With few exceptions, Metropolitan can deliver this emergency supply throughout its service area via gravity, thereby eliminating dependence on power sources that could also be disrupted by a major earthquake. The WSDM Plan (Metropolitan, 1999) shortage stages will guide Metropolitan's management of available supplies and resources during the emergency to minimize the impacts of the catastrophe.

Metropolitan has a long-standing policy to develop and maintain emergency storage reserves to ensure that Southern California has access to water during emergency conditions such as earthquakes and other disasters. Metropolitan's emergency storage planning criteria was codified in the 1991 Environmental Impact Report for Diamond Valley Lake. The emergency storage planning criteria defined that the region should maintain adequate surface storage reserves to serve 75% of the firm retail demands for a six-month period. Further, it defined that these surface storage reserves should reside inside of the major earthquake fault lines that cross the SWP, CRA and Los Angeles Aqueduct (LAA). In 2015, approximately 650,000 acre-feet of storage is maintained in the major surface reservoirs in Southern California. Although these storage reserves are not part of the IRP resource portfolio, they serve to increase the overall water supply reliability and security for the people of the Metropolitan's service area.

Storage is a key component of water management. Storage enables the capture of surplus amounts of water in normal and wet climate and hydrologic conditions when it is plentiful for supply and environmental uses. Stored water can then be used in dry years and in conditions where augmented water supplies are needed to meet demands. Storage generally takes two forms: surface reservoirs and groundwater basin storage. Since 1990, Metropolitan has invested billions of dollars to develop both forms of storage. In total, Metropolitan has developed dry-year storage with a capacity of more than 5.5 million acre-feet, a thirteen fold increase in storage capacity available to manage regional water supplies.

Some examples of storage resources that have been developed since 1990 include:

Surface Water Reservoirs

- Diamond Valley Lake (810,000 acre-feet)
- SWP Article 56 Carryover Storage (up to 200,000 acre-feet)
- Flexible Storage in Castaic Lake and Lake Perris (219,000 acre-feet)
- Intentionally-Created Surplus in Lake Mead (1.5 million acre-feet)

Groundwater Storage

- Member Agency Conjunctive Use Programs (210,000 acre-feet)
- Semitropic Storage Program (350,000 acre-feet)
- Arvin-Edison Storage Program (350,000 acre-feet)
- San Bernardino Metropolitan Storage Program (50,000 acre-feet)
- Kern Delta Water District Storage Program (250,000 acre-feet)
- Mojave Storage Program (390,000 acre-feet)

Table 8-3A shows the total storage capacity, aggregated put and take capacities (i.e., how much that can be "put" into storage, or taken out) and the projected 2015 end of year storage balance.

The City has six emergency domestic water connections with Golden State Water Company (GSWC), which are located at:

1. Century Boulevard and La Cienega Boulevard
2. Redfern Avenue and 95th Street
3. Prairie Avenue north of Century Boulevard
4. Century Boulevard and Yukon Avenue
5. Yukon Avenue and 104th Street

6. Crenshaw Boulevard and 111th Street

Additionally, the City has two emergency domestic water connections with the Los Angeles Department of Water and Power (LADWP), which are located at:

1. Manchester Boulevard and Prairie Avenue
2. Centinela Avenue east of La Colina Drive

These emergency water connections allow the City and either GSWC or LADWP to share water as necessary when either the City or the participating agency are experiencing an emergency reduction in their normal water supplies (Tetra Tech, 2015).

Table 8-3A: Metropolitan Storage Capacities & Estimated 2015 Ending Balances (AF)

Element	Program Storage Capacity	Maximum Put Capacity	Maximum Take Capacity	Estimated 2015 Ending Balance[(a)]
Central Valley and SWP	1,630,000	540,000	560,000	460,000
Colorado River	2,390,000	650,000	600,000	290,000
In-Region	1,300,000	900,000	940,000	190,000
Subtotal Dry-Year Storage	5,320,000	2,090,000	2,100,000	940,000
Emergency Storage	647,000	647,000	0	647,000
Total Storage	5,967,000	2,737,000	2,100,000	1,587,000

Source: Draft Metropolitan 2015 Integrated Resources Plan

(a) Based on trend as of September 2015; may vary depending on demands and hydrologic conditions in any given future year.

8.8.1 Electrical Outages

Metropolitan has also developed contingency plans that enable it to deal with both planned and unplanned electrical outages. These plans include the following key points:

- In event of power outages, water supply can be maintained by gravity feed from Diamond Valley Lake, Lake Mathews, Castaic Lake, and Silverwood Lake.

- Maintaining water treatment operations is a key concern. As a result, all Metropolitan treatment plants have backup generation sufficient to continue operating in event of supply failure on the main electrical grid

- Valves at Lake Skinner (Riverside) can be operated by the backup generation at the Lake Skinner treatment plant

- Metropolitan owns mobile generators that can be transported quickly to key locations if necessary

8.9 MINIMUM SUPPLY NEXT THREE YEARS

Imported water supplies, like groundwater, are subject to demand increases and reduced supplies during dry years. However, Metropolitan modeling in its 2015 UWMP, as referenced in Chapter 7, results in 100 percent reliability for full-service demands through the year 2040 for all climatic conditions. Based on the conditions described above, the City anticipates the ability to meet water demand for all climatic conditions for the near future.

The minimum water supply estimated for the City for the next three years is shown in Table 8-4, which is interpolated from the City's actual 2015 water demand of 9,554 AFY and the demand projected for the City in 2020 of 11,191 AFY.

Table 8-4: Minimum Supply Next Three Years (AFY)

	2016	2017	2018
Available Water Supply	9,881	10,208	10,535

9 DEMAND MANAGEMENT MEASURES

The goal of this chapter on Demand Management Measures (DMM) 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. This chapter describes the City of Inglewood's efforts to promote conservation and to reduce the demand on the water supply.

The section of the California Water Code (CWC 10631) addressing DMMs was significantly modified in 2014, based on recommendations from the Independent Technical Panel (ITP) to the legislature. The ITP was formed by DWR to provide information and recommendations to DWR and the Legislature on new demand management measures, technologies and approaches to water use efficiency. In its report to the Legislature, the ITP recommended that the UWMP Act should be amended to simplify, clarify, and update the demand management measure reporting requirements, and the legislature enacted, streamlining the retail agency requirements from 14 specific measures to six more general requirements plus an "other" category.

CWC 10631

(f)(A) The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to 0608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

i. Water waste prevention ordinances.
ii. Metering.
iii. Conservation pricing.
iv. Public education and outreach.
v. Programs to assess and manage distribution system real loss.
vi. Water conservation program coordination and staffing support.

Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

Historically, the City implements a wide array of conservation measures to discourage water waste and encourage water use efficiency. Additionally, the City participates in water conservation programs developed and implemented by its regional imported water supplier WBMWD.

9.1 DEMAND MANAGEMENT MEASURES FOR WHOLESALE AGENCIES

This section is not applicable as the City of Inglewood is a retail agency.

9.2 DEMAND MANAGEMENT MEASURES FOR RETAIL AGENCIES

9.2.1 Water Waste Prevention Ordinances

A water waste ordinance explicitly states that the waste of water is to be prohibited. The ordinance may prohibit specific actions that waste water, such as excessive runoff from

landscape irrigation, or use of a hose outdoors without a shut off nozzle. A water waste prevention ordinance is in place at all times and is not dependent upon a water shortage for implementation. However a water waste ordinance may include increasingly restrictive prohibitions that may be implemented in response to shortages.

On October 21, 2014, the City adopted Ordinance 15-02, "An Ordinance of the City of Inglewood, California Amending Section 5-110 of Article 7 of Chapter 5 and Adding an Article 19 to Chapter 10 (Public Works) to Establish a Water Conservation and Water Supply Shortage Program," which establishes thirteen practices residents and businesses must implement to avoid unreasonable water use and waste as summarized in Table 8-1, thereby serving as the City's Water Waste Prevention Ordinance. Ordinance 15-02 also serves as the City's Water Shortage Contingency Plan as discussed in Chapter 8.

Table 9-1A: City Water Regulations to Prevent Water Waste Per Ordinance 15-02

Regulated Water Use Activity	Water Waste Prevention Regulation[(a)]
Watering Hours	Prohibited between 9:00 am and 4:00 pm
Watering Duration	No more than fifteen minutes per station per day
Water Flow or Runoff	Excessive water flow or runoff onto adjoining sidewalk, driveway, street, alley, gutter, ditch or adjacent property is prohibited.
Hard or Paved Surfaces	Washing down hard or paved surfaces is prohibited.
Leaks, Breaks or Malfunctions	Must be repaired within 72 hours
Water Fountains & Decorative Water Features	Recirculating water is required for all water fountains & decorative water fountains.
Washing Vehicles	Using water to wash or clean a vehicle is prohibited.
Drinking Water at Eating/ Drinking Establishments	Drinking water served only on request
Commercial Lodging Establishments	Option to decline daily linen service.
Cooling Systems for New Buildings	Installation of single-pass cooling systems is prohibited for buildings requesting new service.
New Commercial Car Wash and Laundry Systems	Installation of non-recirculating water systems is prohibited for new commercial car wash or laundry services.
Dish Wash Spray valves in Restaurants	Restaurants or cafes are prohibited from using non-water conserving dish wash spray valves.
Commercial Car Wash Systems	Effective September 1, 2015 all commercial conveyor car wash systems must have operational recirculating water systems
Notes: a – Some exceptions may apply. See Ordinance 15-02, Section 10-208	

(a) Some exceptions may apply. See Ordinance 15-02, Section 10-208

9.2.2 Metering

The City meters all customers, including separate metering for residential, commercial, industrial, and municipal (governmental/institutional) facilities, and fire flow. The City has

an inclining block rate for water service based on the quantity of water consumed. Monthly service charges are added to the commodity rate to comprise the total water bill. The service charges are based on the size of the meter and range from $13.50 per month for a ¾-inch meter to $283.50 per month for a 12-inch meter. Water bills are sent out monthly.

Based on the current billing system, the more water a customer consumes, the higher the water bill because the commodity rates are per unit of water consumed. This applies to all water-use sectors (e.g., residential, industrial, municipal, etc.). In addition, the higher the quantity consumed within a billing cycle, the higher the per-unit cost of water. Therefore, there is a cost benefit to conserving water. The commodity rate for reclaimed water also varies depending upon the quantity of water used per billing cycle. The recycled water rate is 80% of the potable water rate. As with potable water, the more water used, the higher the unit cost. The City's water rate schedules are discussed in more detail in Section 9.2.3, Conservation Pricing.

The City calibrates and replaces meters in the system as needed, as part of its ongoing operations and maintenance program. Large increases in water consumption within a short period of time on any account is noted and investigated. In addition, if any customer questions the water use within his/her own residence or facility, and so informs City staff, the City will investigate the matter to determine the cause.

9.2.3 Conservation Pricing

In 1999, the City evaluated its water rate structure and modified it to include an increasing block rate structure. This structure was developed to discourage wasteful practices by increasing the unit cost of water as usage increased. The City adopted the increasing rate, in keeping with water conservation and good water system management, and phased the new rates over a three-year period. Accounts are billed monthly.

The City's current water rates were adopted in 2012. They include three tiers in both the potable and recycled water rate structures as shown in Tables 9-1 and 9-2, respectively.

Table 9-1: City Potable Water Rate Structure[a]

Tiered Usage (hcf)	Cost per Unit
Single-Family Residential	
0 - 15	$3.50
16- 39	$4.75
> 39	$6.00
All Other Customers	$4.50

(a) Effective since 2012

The recycled water rate schedule encourages water users to use recycled water wherever possible, and particularly benefits large water users (over 750 units) by lowering the unit

price. Between 2005 and 2015, recycled water sales for the City accounted for 7,201 AF and averaged 721 AFY.

Table 9-2: City Recycled Water Rate Structure[a]

Tiered Usage (AF/Month)	WBMWD Service Area
0-25	$1,176
25-50	$1,165
50-100	$1,154
100-200	$1,143
200+	$1,132

(a) Rates effective July 1, 2016

The City carefully considered the economic impact of conservation pricing, and determined that this rate structure provides additional revenues needed to maintain the water system and water quality and provide a higher level of service to its customers, in addition to encouraging conservation. The City periodically evaluates the water rate schedules and make appropriate modifications when needed.

9.2.4 Public Education and Outreach

The City has developed a public information program to educate the public on the benefits of water conservation. The program involves dissemination of information through literature provided at City Hall and other City facilities. Such information is also disseminated through articles published in the City newsletter, presented on local cable television and made available on the City's website. The City periodically includes informational flyers with the water bills to address water conservation and other important matters.

Southern California Edison Company, in cooperation with the City, printed and distributed 2,000 brochures providing residents and businesses with suggestions on water conservation. Entitled "*25 Ways to Conserve Water*," the brochure was distributed to the public at City information counters, library lobbies, school district offices and the local Chamber of Commerce office.

Another available brochure is entitled "*Southern California Lifestyle – We Value Water, A Defining Difference*." It was developed by a consortium of agencies including WBMWD, Metropolitan, and the Southern California Water Education Center. The brochure provides numerous household and landscaping water saving tips.

A brochure entitled "*A Homeowner's Guide to Garden and Lawn Water Savings*" has also been available. It was prepared by Metropolitan and contains water management topics, lawn care information, scrub and tree care items, hillside planting tips, and irrigation systems advice.

The City participates in a variety of school education programs in concert with WBMWD. In October 1999, WBMWD began the first annual "Water Harvest Festival", a free family event featuring booths, games, prizes with the purpose of educating the public about water. The City always participates in both the annual Water Harvest Festival hosted by WBMWD and the Treasure Beneath our Feet Festival hosted by WRD, by sponsoring a booth providing informational materials and giveaways, showcasing the use of recycled water and stressing the importance of water conservation.

WBMWD and WRD invited children and their parents to the West Basin Water Recycling Facility in El Segundo and the WRD headquarters in Lakewood where they participated in a variety of games and obtained information on the District's water conservation programs and recycling facilities.

WBMWD representatives have visited schools to discuss water conservation, interacting with school children in grades 3 through 9. This discussion is usually included as part of an overall presentation on the water system and how it works.

The City has provided colorful stickers about conserving water to children, and has distributed an interactive booklet entitled "Every Day is Coastal Cleanup Day," an activity and education guide sponsored by Heal the Bay. The booklet provides water facts, water sources, water environments, and the science of water, watershed designations, pollution consequences, and numerous ways to conserve water. These educational materials are prepared in an effort to reach even the youngest children. Educating school children is a way of indirectly educating the parents of the school children. The City also distributes key chains with water conservation logos.

The City will continue to support the school education programs to promote water conservation to that sector of the community. This will be done as a part of normal operation and administrative duties; no separate budget has been created for this program.

The City has participated in many programs to conserve water and educate the public to wise water use. The City increases its educational efforts during times of drought to reinforce the concept of practicing daily water conservation. The City may consider expanding the public education program on water conservation as the need arises, subject to the availability of funding.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

As a part of normal operation and maintenance of the water system, water division staff performs preventive maintenance on approximately 152 miles of water pipelines. This includes regular valve, meter, detector check, and pipeline maintenance. If, during routine inspection of the system, leaks are encountered or suspected, further evaluation is conducted, and if leaks are found, they are repaired. Additionally, City staff attend a monthly water audit meeting to evaluate and analyze water production, use and water losses that may impact water revenues.

9.2.5.1 Southern California Edison's Water Loss Control Program

A project was conducted as part of a greater effort, sponsored by Southern California Edison (SCE), to better understand the relationship between water loss control and direct- and embedded energy- savings. Five local governments in the SCE service territory, including the City of Inglewood, were selected as part of this pilot program. As part of the study, Water Systems Optimization (WSO) worked with the City to accurately quantify water loss volumes by conducting a thorough water audit. In parallel, WSO performed leak detection at Inglewood.

A water balance was established for the City for the audit period July 1, 2012 – June 30, 2013 (fiscal year 2012-2013). Some of the key findings were:

- City system-wide "real losses" (physical water losses such as leaks, breaks and overflows) were estimated at about 5% of total "system input volume" (groundwater production and imported water purchases).
- City apparent losses (non-physical losses, or "paper losses", that occur due to customer meter inaccuracies, data handling errors, and water theft) were calculated to be about 1% of total system input volume.

The performance indicators for Inglewood were compared against those of other North American water utilities. The volume of non-revenue water as a percentage of water supplied/system input volume was below the 25th percentile relative to the operational performance of 26 North American water utilities as were apparent losses. The City's real losses were just above the 25th percentile for the data set, which indicates strong performance in the management of real losses.

WSO offered detailed recommendations to the City including:

- Provide regular calibration and testing of the meters associated with Metropolitan imported water connections WB-17 and WB-38
- In regards to metered and unmetered consumption, investigate accounts where three or more zero-reads were observed in order to determine their status and investigate the meters/accounts highlighted for proper sizing and potential for revenue improvement.
- Initiate an ongoing small meter testing program consisting of 30 to 60 tests per year
- Test an average of 22.6 large meters per year
- Conduct an annual leak detection survey on 83% of the piping network

The City's leak repair records and work order management system indicated the City was addressing reported failures in a very timely manner and it was recommended that the City maintain its current location and repair policy

9.2.6 Water Conservation Program Coordination and Staffing Support

The City has assigned an individual to serve as water conservation coordinator and includes implementation of DMMs. The Cross Connection Specialist will conduct water conservation activities throughout the year and will include public outreach, implementation of DMMs, and other various duties related to water conservation within the City.

9.3 IMPLEMENTATION OVER THE PAST FIVE YEARS

The City calibrates and replaces meters in the system, as needed, as part of its ongoing operations and maintenance program. Large increases in water consumption within a short period of time on any account were noted and investigated.

The City developed a public information program to educate the public on the benefits of water conservation as discussed in Section 9.2.4.

The City's current water rates were adopted in 2012. They include rate tiers in both the potable and recycled water rate structures as shown in Tables 9-1 and 9-2, respectively.

In regards to programs to assess and manage distribution system real loss, the City has an ongoing water pipeline replacement program. Between FY 2010 and FY 2014, the City replaced 35,600 linear feet of pipe at a capital cost of $6.0 million.

9.4 PLANNED IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

Through the implementation of City water conservation ordinances and measures, total City per-capita water use has decreased 10.6% since 2010 and 23.0% since 2005; and residential per-capita water has decreased 15.2% since 2010 and 22.9% since 2005.

The City's actual per-capita water use for 2015 was 92.9, which is well below their calculated SBx7-7 2015 and 2020 targets of 116.6 and 112.0 gpcd, respectively.

City water use has decreased a cumulative 15.7% for the first eleven recording months (June 2015 through May 2016) relative to year 2013 water usage in response to the City's conservation goal set by the State, which is 4.7% ahead of their reduction goal of 11%.

The City will continue to implement water conservation measures to achieve its 2020 water use target and continue this downward trend in City water usage.

The City will continue to monitor, evaluate, and implement various water management strategies that may include rules and regulations that work to support water waste prevention.

The City will continue to calibrate and replace meters in the system as part of its ongoing operations and maintenance program.

The City in concert with WBMWD will continue with the Public education programs and messaging is continually being conveyed at various City events and public forums. In addition, City staff will continue to attend and present water sustainability concepts through numerous presentations to various community groups including but not limited to City Council presentations and Chamber of Commerce business partners.

The City in concert with WBMWD will also continue to promote rebate programs related to turf removal and water efficient devices.

The City will continue its ongoing water pipeline replacement program as a means to assess and manage distribution system real loss.

9.5 MEMBERS OF THE CALIFORNIA URBAN WATER CONSERVATION COUNCIL

The City is not a Signatory to the Memorandum of Understanding (MOU) Regarding Best Management Practices (BMPs) for Urban Water Conservation with the California Urban Water Conservation Council (CUWCC).

10 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

10.1 INCLUSION OF ALL 2015 DATA

The City's 2015 UWMP consists of water use and planning data for the entire year of 2015. The City is reporting on a 2015 calendar year basis.

10.2 NOTICE OF PUBLIC HEARING

The City will hold a public hearing on October 4, 2016, prior to adopting the 2015 UWMP. The public hearing provided an opportunity for the public to provide input to the Plan before it was adopted. The City considered all public input.

10.2.1 Notice to Cities and Counties

CWC 10621

(b) Every urban water supplier required to prepare a plan shall... at least 60 days prior to the public hearing on the plan ... notify any city or county within which the supplier provides waters supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

CWC 10642

...The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area...

The City does not serve water to any other city other than the City of Inglewood, and does not serve water to any unincorporated areas of the county.

10.2.2 Notice to the Public

CWC 10642

...Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection...Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code...

A copy of the City's 60-day notice of the public hearing is included in Appendix H.

Government Code 6066

Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

The City's public notice of the public hearing will be published in the newspaper on September 15, 2016 and September 22, 2016. A copy of the proof of publications are included in Appendix H.

10.3 PUBLIC HEARING AND ADOPTION

As part of the public hearing, the City will provide information on their baseline values, water use targets, and implementation plan required in the Water Conservation Act of 2009. The public hearing on the UWMP will take place before the adoption of the UWMP, which will allow the City the opportunity to modify the UWMP in response to public input before adoption. The City will formally adopt the UWMP before submitting the UWMP to DWR. A copy of the City's adoption resolution is included in Appendix H.

10.4 PLAN SUBMITTAL

The City's 2015 UWMP will be submitted to DWR within 30 days of adoption. UWMP submittal will be done electronically through WUEdata, an online submittal tool. After the UWMP has been submitted, DWR will review the plan and make a determination as to whether or not the UWMP addresses the requirements of the CWC. The DWR reviewer will contact the water supplier as needed during the review process. Upon completion of the Plan review, DWR will issue a letter to the agency with the results of the review.

No later than 30 days after adoption, the City will submit a CD or hardcopy of the adopted 2015 UWMP to the California State Library.

10.5 PUBLIC AVAILABILITY

Not later than 30 days after filing a copy of its plan with DWR, the City will make the plan available for public review during normal business hours by placing a copy of the UWMP at the front desk of the City's Public Works office, and by posting the UWMP on the City's website for public viewing.

10.6 AMENDING AN ADOPTED UWMP

If the City amends the adopted UWMP, each of the steps for notification, public hearing, adoption, and submittal will also be followed for the amended plan.

APPENDIX A

URBAN WATER MANAGEMENT PLANNING ACT

CALIFORNIA WATER CODE DIVISION 6
PART 2.6. URBAN WATER MANAGEMENT PLANNING

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

WATER CODE
SECTION 10610-10610.4

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

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

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact

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

10610.4. The Legislature finds and declares that it is the policy of the state as follows:
(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

WATER CODE
SECTION 10611-10617

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

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

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

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

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

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

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

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

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

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

WATER CODE
SECTION 10620-10621

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

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

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

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

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

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

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

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

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

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

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

WATER CODE
SECTION 10630-10634

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

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

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

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

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

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

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

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

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

(A) An average water year.

(B) A single dry water year.

(C) Multiple dry water years.

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

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

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

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

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

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

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

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

(B) Residential plumbing retrofit.

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

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

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(i) Compliance on an individual basis.

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

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

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

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

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

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

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

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

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

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

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

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

sequence for the agency's water supply.
(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.
(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
(6) Penalties or charges for excessive use, where applicable.
(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.
(8) A draft water shortage contingency resolution or ordinance.
(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.
(b) Commencing with the urban water management plan update due December 31, 2015, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:
(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.
(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
(e) The projected use of recycled water within the supplier's

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

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

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

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

WATER CODE SECTION 10635

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

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

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

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

WATER CODE
SECTION 10640-10645

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

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

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

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

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

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

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

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

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

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

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

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

WATER CODE
SECTION 10650-10656

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

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

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

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

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

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

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

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

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

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

Senate Bill No. 7

CHAPTER 4

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

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

LEGISLATIVE COUNSEL'S DIGEST

SB 7, Steinberg. Water conservation.

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

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

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

This bill would revise existing law relating to agricultural water management planning to require agricultural water suppliers to prepare and adopt agricultural water management plans with specified components on or before December 31, 2012, and update those plans on or before December

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

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

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

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

PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION

Chapter 1. General Declarations and Policy

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

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

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

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.

(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.

(i) Require implementation of specified efficient water management practices for agricultural water suppliers.

(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.

(k) Advance regional water resources management.

10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an

administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

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

Chapter 2. Definitions

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

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of

a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "Commercial water user" means a water user that provides or distributes a product or service.

(e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(h) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(i) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(*l*) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and

water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(A) Metered.

(B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(C) Treated to a minimum tertiary level.

(D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3. Urban Retail Water Suppliers

10608.16. (a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

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

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in subdivision (a) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

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

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

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

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

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies

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

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (*l*) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) An urban retail water supplier shall be granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

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

10608.24. (a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26. (a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the United States Department of Defense military installation's requirements under federal Executive Order 13423.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28. (a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

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

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

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

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

the 20-percent reduction and to reflect updated efficiency information and technology changes.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

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

Chapter 4. Agricultural Water Suppliers

10608.48. (a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

Chapter 5. Sustainable Water Management

10608.50. (a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

(b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

Chapter 6. Standardized Data Collection

10608.52. (a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Chapter 7. Funding Provisions

10608.56. (a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

10608.60. (a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the

Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

(b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

Chapter 8. Quantifying Agricultural Water Use Efficiency

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

SEC. 2. Section 10631.5 of the Water Code is amended to read:

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

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

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

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

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

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

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

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

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

(i) Compliance on an individual basis.

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

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

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

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

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

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

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

SEC. 3. Part 2.8 (commencing with Section 10800) of Division 6 of the Water Code is repealed.

SEC. 4. Part 2.8 (commencing with Section 10800) is added to Division 6 of the Water Code, to read:

PART 2.8. AGRICULTURAL WATER MANAGEMENT PLANNING

Chapter 1. General Declarations and Policy

10800. This part shall be known and may be cited as the Agricultural Water Management Planning Act.

10801. The Legislature finds and declares all of the following:

(a) The waters of the state are a limited and renewable resource.

(b) The California Constitution requires that water in the state be used in a reasonable and beneficial manner.

(c) Urban water districts are required to adopt water management plans.

(d) The conservation of agricultural water supplies is of great statewide concern.

(e) There is a great amount of reuse of delivered water, both inside and outside the water service areas.

(f) Significant noncrop beneficial uses are associated with agricultural water use, including streamflows and wildlife habitat.

(g) Significant opportunities exist in some areas, through improved irrigation water management, to conserve water or to reduce the quantity of highly saline or toxic drainage water.

(h) Changes in water management practices should be carefully planned and implemented to minimize adverse effects on other beneficial uses currently being served.

(i) Agricultural water suppliers that receive water from the federal Central Valley Project are required by federal law to prepare and implement water conservation plans.

(j) Agricultural water users applying for a permit to appropriate water from the board are required to prepare and implement water conservation plans.

10802. The Legislature finds and declares that all of the following are the policies of the state:

(a) The conservation of water shall be pursued actively to protect both the people of the state and the state's water resources.

(b) The conservation of agricultural water supplies shall be an important criterion in public decisions with regard to water.

(c) Agricultural water suppliers shall be required to prepare water management plans to achieve conservation of water.

Chapter 2. Definitions

10810. Unless the context otherwise requires, the definitions set forth in this chapter govern the construction of this part.

10811. "Agricultural water management plan" or "plan" means an agricultural water management plan prepared pursuant to this part.

10812. "Agricultural water supplier" has the same meaning as defined in Section 10608.12.

10813. "Customer" means a purchaser of water from a water supplier who uses water for agricultural purposes.

10814. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of that entity.

10815. "Public agency" means any city, county, city and county, special district, or other public entity.

10816. "Urban water supplier" has the same meaning as set forth in Section 10617.

10817. "Water conservation" means the efficient management of water resources for beneficial uses, preventing waste, or accomplishing additional benefits with the same amount of water.

Chapter 3. Agricultural Water Management Plans

Article 1. General Provisions

10820. (a) An agricultural water supplier shall prepare and adopt an agricultural water management plan in the manner set forth in this chapter on or before December 31, 2012, and shall update that plan on December 31, 2015, and on or before December 31 every five years thereafter.

(b) Every supplier that becomes an agricultural water supplier after December 31, 2012, shall prepare and adopt an agricultural water management plan within one year after the date it has become an agricultural water supplier.

(c) A water supplier that indirectly provides water to customers for agricultural purposes shall not prepare a plan pursuant to this part without the consent of each agricultural water supplier that directly provides that water to its customers.

10821. (a) An agricultural water supplier required to prepare a plan pursuant to this part shall notify each city or county within which the supplier provides water supplies that the agricultural water supplier will be preparing the plan or reviewing the plan and considering amendments or changes to the plan. The agricultural water supplier may consult with, and obtain comments from, each city or county that receives notice pursuant to this subdivision.

(b) The amendments to, or changes in, the plan shall be adopted and submitted in the manner set forth in Article 3 (commencing with Section 10840).

Article 2. Contents of Plans

10825. (a) It is the intent of the Legislature in enacting this part to allow levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

(b) This part does not require the implementation of water conservation programs or practices that are not locally cost effective.

10826. An agricultural water management plan shall be adopted in accordance with this chapter. The plan shall do all of the following:

(a) Describe the agricultural water supplier and the service area, including all of the following:

(1) Size of the service area.

(2) Location of the service area and its water management facilities.

(3) Terrain and soils.

(4) Climate.

(5) Operating rules and regulations.
(6) Water delivery measurements or calculations.
(7) Water rate schedules and billing.
(8) Water shortage allocation policies.
(b) Describe the quantity and quality of water resources of the agricultural water supplier, including all of the following:
(1) Surface water supply.
(2) Groundwater supply.
(3) Other water supplies.
(4) Source water quality monitoring practices.
(5) Water uses within the agricultural water supplier's service area, including all of the following:
(A) Agricultural.
(B) Environmental.
(C) Recreational.
(D) Municipal and industrial.
(E) Groundwater recharge.
(F) Transfers and exchanges.
(G) Other water uses.
(6) Drainage from the water supplier's service area.
(7) Water accounting, including all of the following:
(A) Quantifying the water supplier's water supplies.
(B) Tabulating water uses.
(C) Overall water budget.
(8) Water supply reliability.
(c) Include an analysis, based on available information, of the effect of climate change on future water supplies.
(d) Describe previous water management activities.
(e) Include in the plan the water use efficiency information required pursuant to Section 10608.48.
10827. Agricultural water suppliers that are members of the Agricultural Water Management Council, and that submit water management plans to that council in accordance with the "Memorandum of Understanding Regarding Efficient Water Management Practices By Agricultural Water Suppliers In California," dated January 1, 1999, may submit the water management plans identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of Section 10826.
10828. (a) Agricultural water suppliers that are required to submit water conservation plans to the United States Bureau of Reclamation pursuant to either the Central Valley Project Improvement Act (Public Law 102-575) or the Reclamation Reform Act of 1982, or both, may submit those water conservation plans to satisfy the requirements of Section 10826, if both of the following apply:
(1) The agricultural water supplier has adopted and submitted the water conservation plan to the United States Bureau of Reclamation within the previous four years.

(2) The United States Bureau of Reclamation has accepted the water conservation plan as adequate.

(b) This part does not require agricultural water suppliers that are required to submit water conservation plans to the United States Bureau of Reclamation pursuant to either the Central Valley Project Improvement Act (Public Law 102-575) or the Reclamation Reform Act of 1982, or both, to prepare and adopt water conservation plans according to a schedule that is different from that required by the United States Bureau of Reclamation.

10829. An agricultural water supplier may satisfy the requirements of this part by adopting an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) or by participation in areawide, regional, watershed, or basinwide water management planning if those plans meet or exceed the requirements of this part.

Article 3. Adoption and Implementation of Plans

10840. Every agricultural water supplier shall prepare its plan pursuant to Article 2 (commencing with Section 10825).

10841. Prior to adopting a plan, the agricultural water supplier shall make the proposed plan available for public inspection, and shall hold a public hearing on the plan. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned agricultural water supplier pursuant to Section 6066 of the Government Code. A privately owned agricultural water supplier shall provide an equivalent notice within its service area and shall provide a reasonably equivalent opportunity that would otherwise be afforded through a public hearing process for interested parties to provide input on the plan. After the hearing, the plan shall be adopted as prepared or as modified during or after the hearing.

10842. An agricultural water supplier shall implement the plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan, as determined by the governing body of the agricultural water supplier.

10843. (a) An agricultural water supplier shall submit to the entities identified in subdivision (b) a copy of its plan no later than 30 days after the adoption of the plan. Copies of amendments or changes to the plans shall be submitted to the entities identified in subdivision (b) within 30 days after the adoption of the amendments or changes.

(b) An agricultural water supplier shall submit a copy of its plan and amendments or changes to the plan to each of the following entities:

(1) The department.

(2) Any city, county, or city and county within which the agricultural water supplier provides water supplies.

(3) Any groundwater management entity within which jurisdiction the agricultural water supplier extracts or provides water supplies.

(4) Any urban water supplier within which jurisdiction the agricultural water supplier provides water supplies.

(5) Any city or county library within which jurisdiction the agricultural water supplier provides water supplies.

(6) The California State Library.

(7) Any local agency formation commission serving a county within which the agricultural water supplier provides water supplies.

10844. (a) Not later than 30 days after the date of adopting its plan, the agricultural water supplier shall make the plan available for public review on the agricultural water supplier's Internet Web site.

(b) An agricultural water supplier that does not have an Internet Web site shall submit to the department, not later than 30 days after the date of adopting its plan, a copy of the adopted plan in an electronic format. The department shall make the plan available for public review on the department's Internet Web site.

10845. (a) The department shall prepare and submit to the Legislature, on or before December 31, 2013, and thereafter in the years ending in six and years ending in one, a report summarizing the status of the plans adopted pursuant to this part.

(b) The report prepared by the department shall identify the outstanding elements of any plan adopted pursuant to this part. The report shall include an evaluation of the effectiveness of this part in promoting efficient agricultural water management practices and recommendations relating to proposed changes to this part, as appropriate.

(c) The department shall provide a copy of the report to each agricultural water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearing designed to consider the effectiveness of plans submitted pursuant to this part.

(d) This section does not authorize the department, in preparing the report, to approve, disapprove, or critique individual plans submitted pursuant to this part.

Chapter 4. Miscellaneous Provisions

10850. (a) Any action or proceeding to attack, review, set aside, void, or annul the acts or decisions of an agricultural water supplier on the grounds of noncompliance with this part shall be commenced as follows:

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

(2) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 120 days after submitting the plan or amendments to the plan to entities in accordance with Section 10844 or the taking of that action.

(b) In an action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an agricultural water supplier, on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse

of discretion is established if the agricultural water supplier has not proceeded in a manner required by law, or if the action by the agricultural water supplier is not supported by substantial evidence.

10851. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part. This part does not exempt projects for implementation of the plan or for expanded or additional water supplies from the California Environmental Quality Act.

10852. An agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

10853. No agricultural water supplier that provides water to less than 25,000 irrigated acres, excluding recycled water, shall be required to implement the requirements of this part or Part 2.55 (commencing with Section 10608) unless sufficient funding has specifically been provided to that water supplier for these purposes.

SEC. 5. This act shall take effect only if Senate Bill 1 and Senate Bill 6 of the 2009–10 Seventh Extraordinary Session of the Legislature are enacted and become effective.

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APPENDIX B

DWR UWMP CHECKLIST ORGANIZED BY SUBJECT

(Appendix F from DWR UWMP Guidebook)

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 eitherchecklist. 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 Water Code Section

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
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	
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	
10608.22	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	
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	
10608.24(d)(2)	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	
10608.26(a)	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	
10608.36	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	
10608.40	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	
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	
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	

10620(f)	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	
10621(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	
10621(d)	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	
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	
10631(b)(1)	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	
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	
10631(b)(2)	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	
10631(b)(2)	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	
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	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	
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	
10631(c)(2)	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	
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	
10631(f)(1)	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	
10631(f)(2)	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	
10631(g)	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	
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	
10631(i)	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	
10631(j)	Retail suppliers will include documentation that they have provided their wholesale	System Supplies	Section 2.5.1	

	supplier(s) – if any - with water use projections from that source.			
10631(j)	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	
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	
10632(a) and 10632(a)(1)	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	
10632(a)(2)	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	
10632(a)(3)	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	
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	
10632(a)(7)	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	
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	
10633	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	

10633(a)	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	
10633(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	
10633(c)	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	
10633(d)	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	
10633(e)	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 comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	
10633(f)	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	
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	
10634	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	
10635(a)	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	
10635(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	
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	

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	
10642	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	
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	
10644(a)	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	
10644(a)(1)	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	
10644(a)(2)	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	
10645	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.	Plan Adoption, Submittal, and Implementation	Section 10.5	

Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
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	
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	Plan Preparation	Section 2.5.2	

	agencies, and relevant public agencies, to the extent practicable.			
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	
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	
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	
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	
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	
10608.22	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	
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary	Baselines and Targets	Section 5.8.2	

	events, it shall provide the basis for, and data supporting the adjustment.			
10608.36	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	
10608.40	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	
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	
10631(b)(1)	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	
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	
10631(b)(2)	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	
10631(b)(2)	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	
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	
10631(b)(4)	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	
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	
10631(g)	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	
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	

10631(j)	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	
10631(j)	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	
10633	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	
10633(a)	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	
10633(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	
10633(c)	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	
10633(d)	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	
10633(e)	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 comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	
10633(f)	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	
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	
10620(f)	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	
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	

10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	
10631(c)(2)	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	
10634	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	
10635(a)	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	
10632(a) and 10632(a)(1)	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	
10632(a)(2)	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	
10632(a)(3)	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	
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	
10632(a)(7)	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	
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	

10631(f)(1)	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	
10631(f)(2)	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	
10631(i)	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	
10608.26(a)	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	
10621(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	
10621(d)	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	
10635(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	
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	
10642	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	
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	
10644(a)	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	

10644(a)(1)	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	
10644(a)(2)	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	
10645	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.	Plan Adoption, Submittal, and Implementation	Section 10.5	

APPENDIX C

POPULATION TOOL DATA FOR SBX7-7 CALCULATION

WUEdata - Inglewood City Of

Sign Out

Please print this page to a PDF and include as part of your UWMP submittal.

Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Caitlin Bishop	Inglewood City Of	4372632682	6/23/2016 3:27:45 PM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	WSA Boundary.kml	1203
2000	WSA Boundary.kml	1203
2010	WSA Boundary.kml	1203

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period: 10

Year beginning baseline period range: 1996

Year ending baseline period range[1]: 2005

5-year baseline period

Year beginning baseline period range: 2004

Year ending baseline period range[2]: 2008

[1] The ending year must be between December 31, 2004 and December 31, 2010.

[2] The ending year must be between December 31, 2007 and December 31, 2010.

Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

	Census Block Group Level	Census Block Level						
Year	% Population in SF Housing	Service Area Population	Population in SF Housing (calculated)	Population in MF/GQ Housing (calculated)	# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection
1990	44.82%	83,498	37,425	46,073			3.22	30.82
1991	-	-	-	-	-	-	3.22	30.82
1992	-	-	-	-	-	-	3.22	30.82
1993	-	-	-	-	-	-	3.22	30.82
1994	-	-	-	-	-	-	3.22	30.82
1995	-	-	-	-	-	-	3.22	30.82
1996	-	-	-	-	-	-	3.22	30.82
1997	-	-	-	-	-	-	3.22	30.82
1998	-	-	-	-	-	-	3.22	30.82
1999	-	-	-	-	-	-	3.22	30.82
2000	47.92%	87,090	41,735	45,355			3.22	30.82
2001	-	-	-	-	-	-	3.22	30.82
2002	-	-	-	-	-	-	3.22	30.82
2003	-	-	-	-	-	-	3.22	30.82
2004	-	-	-	-	-	-	3.22	30.82
2005	-	-	-	-	-	-	3.22	30.82
2006	-	-	-	-	-	-	3.22	30.82
2007	-	-	-	-	-	-	3.22	30.82
2008	-	-	-	-	-	-	3.22	30.82
2009	-	-	-	-	-	-	3.22	30.82
2010	46.84%	85,100	39,859	45,241	12383	1468	3.22	30.82
2015	-	-	-	-	-	-	3.22 *	30.82 *

Population Using Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

Year		# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection	SF Population	MF/GQ Population	Total Population
10 to 15 Year Baseline Population Calculations								
Year 1	1996			3.22	30.82			
Year 2	1997			3.22	30.82			
Year 3	1998			3.22	30.82			
Year 4	1999			3.22	30.82			
Year 5	2000			3.22	30.82			
Year 6	2001			3.22	30.82			
Year 7	2002			3.22	30.82			
Year 8	2003			3.22	30.82			
Year 9	2004			3.22	30.82			
Year 10	2005			3.22	30.82			
5 Year Baseline Population Calculations								
Year 1	2004			3.22	30.82			
Year 2	2005			3.22	30.82			
Year 3	2006			3.22	30.82			
Year 4	2007			3.22	30.82			
Year 5	2008			3.22	30.82			
2015 Compliance Year Population Calculations								
2015		12191	1478	3.22 *	30.82 *	39,241	45,549	84,790

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QUESTIONS / ISSUES? CONTACT THE WUEDATA HELP DESK

APPENDIX D

AWWA WATER AUDIT WORKSHEETS

AWWA Free Water Audit Software: Reporting Worksheet

Click to access definition
Click to add a comment

Water Audit Report for: City of Inglewood
Reporting Year: 2015 1/2015 - 12/2015

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 input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

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

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

					Pct:	Value:	
Volume from own sources:	8	1,680.000	acre-ft/yr	8			acre-ft/yr
Water imported:	7	7,063.000	acre-ft/yr	7			acre-ft/yr
Water exported:	n/a	0.000	acre-ft/yr				acre-ft/yr

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

WATER SUPPLIED: 8,723.000 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: for help using option buttons below

			Pct:	Value:	
Billed metered:	8	8,275.000	acre-ft/yr		
Billed unmetered:	8	0.000	acre-ft/yr		
Unbilled metered:	8	0.000	acre-ft/yr		
Unbilled unmetered:	7	109.038	acre-ft/yr	1.25%	acre-ft/yr

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

Use buttons to select percentage of water supplied OR value

AUTHORIZED CONSUMPTION: 8,384.038 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

338.963 acre-ft/yr

Apparent Losses

			Pct:	Value:	
Unauthorized consumption:		21.609	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	6	0.000			acre-ft/yr
Systematic data handling errors:	5	20.688	0.25%		acre-ft/yr

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

Apparent Losses: 42.495 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 296.468 acre-ft/yr

WATER LOSSES: 338.963 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 448.000 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	156.0 miles
Number of active AND inactive service connections:	7	15,952
Service connection density:		102 conn./mile main

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

(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line:

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	65.0 psi

COST DATA

Total annual cost of operating water system:	8	$20,718,432	$/year
Customer retail unit cost (applied to Apparent Losses):	8	$6.91	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	8	$1,136.00	$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 73 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: Water imported
2: Unauthorized consumption
3: Systematic data handling errors

AWWA Free Water Audit Software:
System Attributes and Performance Indicators

WAS v5.0
American Water Works Association
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Water Audit Report for: City of Inglewood
Reporting Year: 2015 | 1/2015 - 12/2015

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 73 out of 100 ***

System Attributes:

Apparent Losses:	42,495	acre-ft/yr
+ Real Losses:	296,468	acre-ft/yr
= **Water Losses:**	338,963	acre-ft/yr
Unavoidable Annual Real Losses (UARL):	235.57	acre-ft/yr
Annual cost of Apparent Losses:	$95,683	
Annual cost of Real Losses:	$667,536	Valued at **Customer Retail Unit Cost**

Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:

Non-revenue water as percent by volume of Water Supplied:	5.1%	
Non-revenue water as percent by cost of operating system:	4.9%	Real Losses valued at Customer Retail Unit Cost

Operational Efficiency:

Apparent Losses per service connection per day:	2.38	gallons/connection/day
Real Losses per service connection per day:	16.59	gallons/connection/day
Real Losses per length of main per day*:	N/A	
Real Losses per service connection per day per psi pressure:	0.26	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL):	296.47	acre-feet/year
Infrastructure Leakage Index (ILI) [CARL/UARL]:	1.26	

* 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: Water Balance

WAS v5.0

Water Audit Report for:	City of Inglewood
Reporting Year:	2015 — 1/2015 - 12/2015
Data Validity Score:	73

	Water Exported 0.000	Billed Water Exported			
Own Sources (Adjusted for known errors) 1,660.000	Water Supplied 8,723.000	Authorized Consumption 8,384.038	Billed Authorized Consumption 8,275.000	Billed Metered Consumption (water exported is removed) 8,275.000	Revenue Water 8,275.000
				Billed Unmetered Consumption 0.000	
			Unbilled Authorized Consumption 109.038	Unbilled Metered Consumption 0.000	Non-Revenue Water (NRW) 448.000
				Unbilled Unmetered Consumption 109.038	
		Water Losses 338.963	Apparent Losses 42.495	Unauthorized Consumption 21.808	
				Customer Metering Inaccuracies 0.000	
				Systematic Data Handling Errors 20.688	
Water Imported 7,063.000			Real Losses 296.468	Leakage on Transmission and/or Distribution Mains *Not broken down*	
				Leakage and Overflows at Utility's Storage Tanks *Not broken down*	
				Leakage on Service Connections *Not broken down*	

AWWA Free Water Audit Software: Dashboard

WAS v5.0
American Water Works Association
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The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

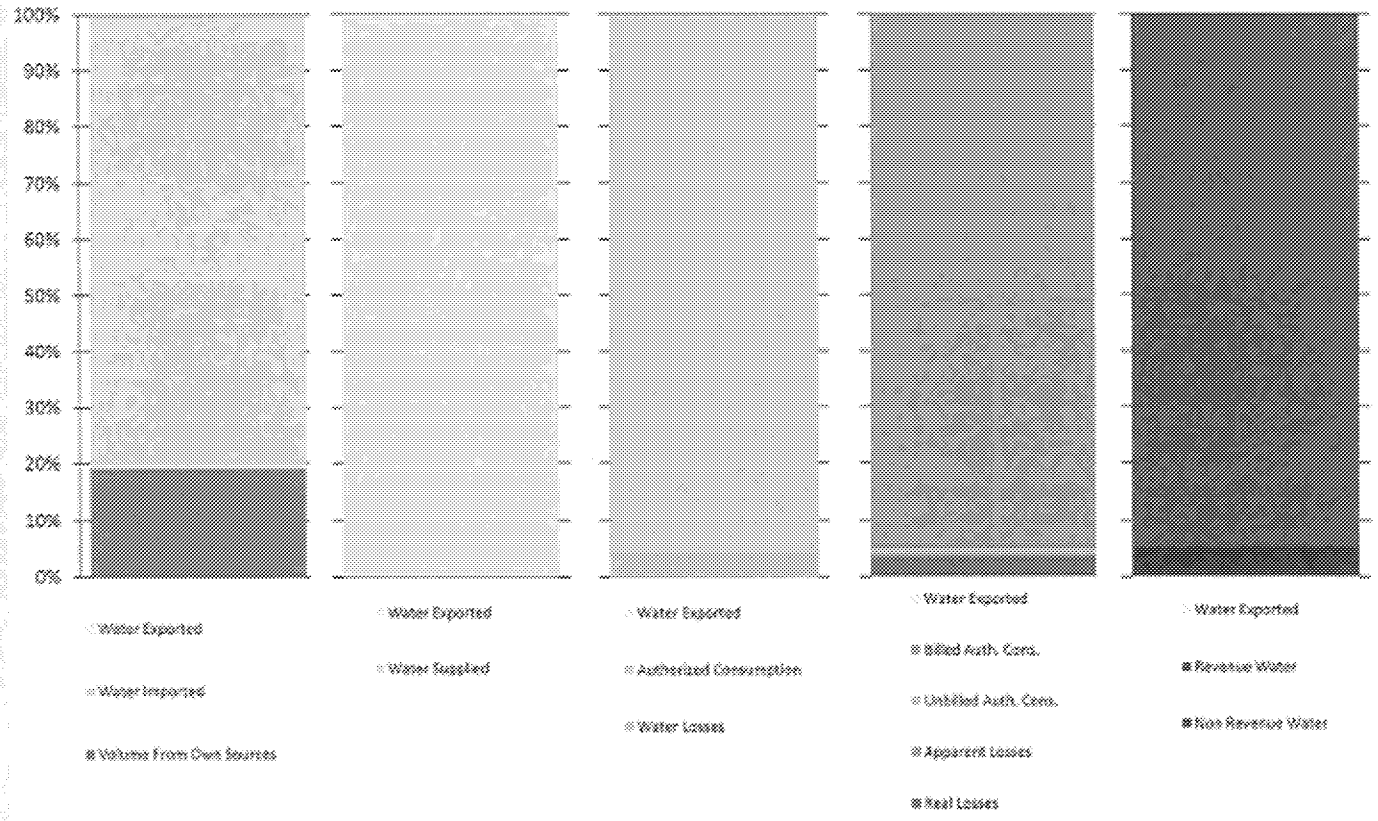
Water Audit Report for: City of Inglewood

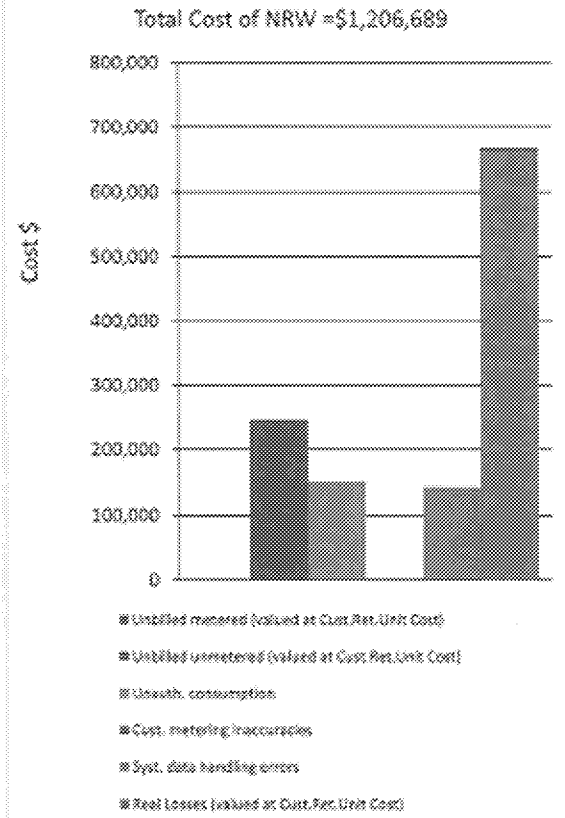
Reporting Year: 2015 | 1/2015 - 12/2015

Data Validity Score: 73

○ Show me the VOLUME of Non-Revenue Water

◉ Show me the COST of Non-Revenue Water





APPENDIX E

DECEMBER 2014 WEST COAST GROUNDWATER BASIN JUDGMENT AMENDMENT

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GOLDEN STATE WATER COMPANY

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

CALIFORNIA WATER SERVICE COMPANY, et al., Plaintiff, vs. CITY OF COMPTON, et al., Defendant.	Case No. C 506 806 [Related to Case No. C 786656] Assigned for All Purposes to the Honorable Kenneth R. Freeman (Dept. 310) AMENDED JUDGMENT Action Filed: 7/21/1945

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(continued)

The original judgment in this action was entered on August 18, 1961 ("Judgment"). Pursuant to the reserved and continuing jurisdiction of the Court under the Judgment, certain amendments to the Judgment and temporary orders have heretofore been made and entered.

Continuing jurisdiction of the Court under the Judgment is currently assigned to the Honorable Richard Freeman.

The motion of Defendants the City of Inglewood, the City of Long Beach, the City of Los Angeles, the City of Manhattan Beach, the City of Torrance, the California Water Service Company, and the Golden State Water Company, and Intervenors the West Basin Municipal Water District and the Water Replenishment District of Southern California, for further amendments to the Judgment, notice thereof and of the hearing thereon having been duly and regularly given to all Parties, came for hearing in Department 310 of the above-entitled Court on December 9, 2014 at 9:00 a.m., before said Honorable Freeman.

This "Amended Judgment" incorporates prior amendments to the Judgment made pursuant to the following Court orders: (1) Order Authorizing Temporary Mining Of Basin entered on or about June 2, 1977, (2) Order Authorizing Temporary Mining Of Basin entered on or about September 29, 1977, (3) Order approving Intervention After Judgment Of Hughes Aircraft Company As A Party Defendant And Amending Amended Judgment Herein entered on or about September 24, 1981, (4) Order Amending Judgment entered on or about March 8, 1989, (5) Order entered on or about July 6, 1993, and (6) Order Amending Judgment To Provide Exclusion Zone entered on or about December 21, 1995 (the "Prior Amendment Orders"). To the extent this Amended Judgment is a restatement of the Judgment as heretofore amended, the Prior Amendment Orders are incorporated into this Amended Judgment for convenience and not as a re-adjudication of the matters encompassed in the Prior Amendment Orders.

NOW, THEREFORE, IT IS HEREBY ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

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I. EXISTENCE OF BASIN AND BOUNDARIES THEREOF

There exists in the County of Los Angeles, State of California, an underground water basin or reservoir known and hereinafter referred to as "West Coast Basin," "West Basin" or the "Basin," and the boundaries thereof are described as follows:

> Commencing at a point in the Baldwin Hills about 1300 feet north and about 100 feet west of the intersection of Marvale Drive and Northridge Drive; thence through a point about 200 feet northeasterly along Northridge Drive from the intersection of Marvale and Northridge Drives to the base of the escarpment of the Potrero fault; thence along the base of the escarpment of the Potrero fault in a straight line passing through a point about 200 feet south of the intersection of Century and Crenshaw Boulevards and extending about 2650 feet beyond this point to the southerly end of the Potrero escarpment; thence from the southerly end of the Potrero escarpment in a line passing about 700 feet south of the intersection of Western Avenue and Imperial Boulevard and about 400 feet north of the intersection of El Segundo Boulevard and Vermont Avenue and about 1700 feet south of the intersection of El Segundo Boulevard and Figueroa Street to the northerly end of the escarpment of the Avalon-Compton fault at a point on said fault about 700 feet west of the intersection of Avalon Boulevard and Rosecrans Avenue; thence along the escarpment of the Avalon-Compton fault to a point in the Dominguez Hills located about 1300 feet north and about 850 feet west of the intersection of Central Avenue and Victoria Street; thence along the crest of the Dominguez Hills in a straight line to a point on Alameda Street about 2900 feet north of Del Amo Boulevard as measured along Alameda Street; thence in a straight line extending through a point located on Del Amo Boulevard about 900 feet west of the Pacific Electric Railway to a point about 100 feet north and west of the intersection of Bixby Road and Del Mar Avenue; thence in a straight line to a point located about 750 feet west and about 730 feet south of the intersection of Wardlow Road and Long Beach Boulevard at the escarpment of the Cherry Hill fault; thence along the escarpment of the Cherry Hill fault through the intersection of Orange Avenue and Willow Street to a point about 400 feet east of the intersection of Walnut and Creston Avenues; thence to a point on Pacific Coast Highway about 300 feet west of its intersection with Obispo Avenue; thence along Pacific Coast Highway easterly to a point located about 650 feet west of the intersection of the center line of said Pacific Coast Highway with the intersection of the center line of Lakewood Boulevard; thence along the escarpment of the Reservoir Hill fault to a point about 650 feet north and about 700 feet east of the intersection of Anaheim Street and Ximeno Avenue; thence along the trace of said Reservoir Hill fault to a point on the Los Angeles - Orange County line about 1700 feet northeast of the Long Beach City limit measured along the County line; thence along said Los Angeles - Orange County line in a southwesterly direction to the shore line of the Pacific Ocean; thence in a northerly and westerly direction along the shore line of the Pacific Ocean to the intersection of said shore line with

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the southerly end of the drainage divide of the Palos Verdes Hills; thence along the drainage divide of the Palos Verdes Hills to the intersection of the northerly end of said drainage divide with the shore line of the Pacific Ocean; thence northerly along the shore line of the Pacific Ocean to the intersection of said shore line with the westerly projection of the crest of the Ballona escarpment; thence easterly along the crest of the Ballona escarpment to the mouth of Centinela Creek; thence easterly from the mouth of Centinela Creek across the Baldwin Hills in a line encompassing the entire watershed of Centinela Creek to the point of beginning.

All streets, railways and boundaries of Cities and Counties hereinabove are referred to as the same existed at 12:00 o'clock noon on August 20, 1961.

The area included within the foregoing boundaries is approximately 101,000 acres in extent.

II. DEFINITIONS

1. "*Administrative Body*" is defined in Section XI.2.A. The Administrative Body is one of the three bodies that comprises the Watermaster.

2. "*Administrative Year*" means the 12 (twelve) month period beginning July 1 and ending June 30.

3. "*Adjudicated Right*" means the right of a Party to produce groundwater in a quantity greater than 0 (zero) pursuant to the rights authorized under Section III of this Amended Judgment.

4. "*Adjudicated Storage Capacity*" means 70,900 acre-feet of the Available Dewatered Space, unless otherwise modified in accordance with Section V.1.A herein, which has been apportioned for use herein for Individual Storage Allocation, Community Storage Pool, and Regional Storage Allocation.

5. "*Amended Judgment*" means the Judgment, as amended to date.

6. "*Available Dewatered Space*" means up to 120,000 acre feet of dewatered space available to hold groundwater within the West Coast Basin that is allocated between Adjudicated Storage Capacity and Basin Operating Reserve.

7. "*Basin,*" "*West Basin,*" and "*West Coast Basin*" as these terms are interchangeably used herein, each means the ground water basin underlying the area described in Section I hereof.

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8. "*Basin Operating Reserve*" means a total of 49,100 acre-feet of Available Dewatered Space, unless otherwise modified in accordance with Section V.1.A herein, available for Basin operations as provided in Section V.2. The Basin Operating Reserve added to the Adjudicated Storage Capacity equals the amount of Available Dewatered Space.

9. "*Carryover*" is defined in Section V.4.

10. "*Carryover Conversion*" means the process of converting water properly held as Carryover into Stored Water.

11. "*CEQA*" refers to the California Environmental Quality Act, Public Resources Code § 21000 *et seq.* and its implementing regulations set forth at California Code of Regulations, Title 14, Chapter 3, which regulations shall be referred to herein as the "CEQA Guidelines."

12. "*CEQA Review Document*" means the final Environmental Impact Report, Negative Declaration or Mitigated Negative Declaration, prepared by or on behalf of the lead agency under CEQA.

13. "*Community Storage Pool Allocation*" is defined in Section V.6.A.

14. "*Contributed Water*" means a specified amount of Stored Water that the person or entity who stores water agrees to not recapture and to allow to remain in the Basin.

15. "*Developed Water*" includes Imported Water and other non-native water supplies.

16. "*Existing Facilities*" means those facilities described in Exhibit C to this Amended Judgment as well as completed New Storage Facilities approved in accordance with this Amended Judgment.

17. "*Extraction*," "*extractions*," "*extracting*," "*extracted*," and other variations of the same noun and verb in either initial capital or all lower case, mean pumping, taking, diverting or withdrawing groundwater by any manner or means whatsoever from the West Coast Basin.

18. "*Individual Storage Allocation*" is defined in Section V.5.

19. "*Imported Water*" means water brought into the West Coast Basin area from a non-tributary source by a Party, and any predecessors in interest.

20. "*Majority Protest*" means a written protest filed with the Administrative Body of

the Watermaster by Parties holding a majority of all Adjudicated Rights.

21. "*Material Physical Harm*" means material physical injury or an appreciable diminution in the quality or quantity of groundwater available within the Basin to support extractions pursuant to Adjudicated Rights or the right to extract Stored Water that is demonstrated to be attributable to the placement, recharge, injection, storage, transfer or recapture of Stored Water, including, but not limited to, degradation of water quality, liquefaction, land subsidence and other material physical injury caused by elevated or lowered groundwater levels. Material Physical Harm does not include "economic injury" that results from other than direct physical causes, including any adverse effect on water rates, lease rates, or demand for water. Once fully mitigated, physical injury shall no longer be considered to be material.

22. "*MWD*" means the Metropolitan Water District of Southern California.

23. "*New Storage Facility*" means a physical facility that can be used to introduce Stored Water or water from a Water Augmentation Project into the Basin, including but not limited to aquifer storage and recovery wells, injection wells, percolation ponds and spreading basins, that are not listed on Exhibit C to this Amended Judgment. Once completed and approved in accordance with this Amended Judgment, a New Storage Facility shall be deemed an Existing Facility for purposes of this Amended Judgment.

24. "*Outgoing Watermaster*" means the State of California, Department of Water Resources.

25. "*Party*" or "*Parties*" means a Party or Parties to this action.

26. "*Person*" or "*persons*" include individuals, partnerships, associations, governmental agencies and corporations, and any and all types of entities.

27. "*Regional Benefit*" means a contribution to or an advantage obtained by the Basin, the public, or the environment, including but not limited to (i) Contributed Water; (ii) additional infrastructure such as production wells or transmission pipelines that can be used by other Parties or WRD to enhance reliability of water supplies; or (iii) monetary payments. If the Regional Benefit is Contributed Water, the Contributed Water must be physical, "wet" water left in the Basin, which may be used by WRD as a source of Replenishment Water and thereby reduce the

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otherwise applicable Replenishment Assessment. The value of the Contributed Water will be determined by multiplying the amount of Contributed Water by the appropriate rate for Imported Water purchased or acquired by WRD in the Basin.

28. "*Regional Storage Project(s)*" are defined in Section V.7.

29. "*Regional Storage Allocation*" is defined in Section V.7.

30. "*Replenishment Assessment*" means the replenishment assessment imposed by WRD upon each acre-foot of groundwater extracted from the West Coast Basin pursuant to the WRD Act and in compliance with all other laws of the State of California and any other applicable laws. This Amended Judgment shall not determine nor affect the determination of whether a Replenishment Assessment is valid or invalid in the event that any Replenishment Assessment is challenged in a legal action.

31. "*Replenishment Water*" means water that, in accordance with the WRD Act, WRD affirmatively captures or procures to replenish the Basin by percolating or injecting water into the Basin or in-lieu by substituting surface water in-lieu of production and use of groundwater in accordance with the WRD Act. To the extent WRD hereafter creates new means of capturing naturally occurring water and causing such newly-captured water to replenish the West Coast Basin, such newly-captured replenishment water shall also be considered "Replenishment Water."

32. "*Space-Available Storage*" is defined at Section V.10.

33. "*Storage Panel*" means a bicameral body that consists of the: (i) West Coast Basin Water Rights Panel, and (ii) Board of Directors of WRD. The Storage Panel is one of three bodies that comprise the Watermaster.

34. "*Storage Project*" means a Technically Feasible activity pertaining to the placement, recharge, injection, storage, transfer or recapture of Stored Water in the Basin. Storage Project(s) includes Regional Storage Projects.

35. "*Stored Water*" or "*Store Water*" means water held within any portion of the Available Dewatered Space in the West Coast Basin as a result of spreading, injection, Carryover Conversion or water from a Water Augmentation Project, where there is an intention to

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subsequently withdraw the water for reasonable and beneficial use pursuant to the Amended Judgment.

36. "*Technically Feasible*" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account environmental and technological factors.

37. "*Total Adjudicated Production Rights*" means the sum of a Party's Adjudicated Rights and any contractual right through lease or other agreement to extract and use the Adjudicated Right of another Party.

38. "*Water Augmentation Project*" means pre-approved Technically Feasible physical actions and management activities that are initiated after entry of this Amended Judgment that provide demonstrated appreciable increases in long-term annual groundwater yield of the Basin.

39. "*Watermaster*" is comprised of the: (i) Administrative Body, (ii) Water Rights Panel, and (iii) Storage Panel. The Watermaster is not a "public agency" or a "trustee agency" within the meaning of CEQA and CEQA Guidelines 15379 and 15386.

40. "*Water Purveyor*" means a Party which sells water to the public, whether a regulated public utility, mutual water company, or public entity, which has a connection or connections for the taking of Imported Water through the MWD, through a MWD-member agency, or access to such Imported Water through such connection, and which normally supplies at least a part of its customers' water needs with such Imported Water.

41. "*Water Rights Panel*" means one of the three bodies that comprise the Watermaster consisting of five (5) members from among representatives of the Parties holding Adjudicated Rights. Three (3) of the members shall be the elected officers of president, vice-president and treasurer of the West Basin Water Association and the remaining two (2) members shall be selected by the Board of Directors of the West Basin Water Association in accordance with Section XI.2.B of the Amended Judgment.

42. "Watermaster Rules" mean the Rules that the Watermaster shall adopt, subject to Court approval, pursuant to Section XI.1.E of the Amended Judgment.

43. "*WRD*" means the Water Replenishment District of Southern California, a public

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corporation of the State of California (Division 18, commencing with Section 60000 of the Water Code).

44. "WRD Act" means the Water Replenishment District Act, California Water Code Sections 60000 *et seq.*

III. DECLARATION OF RIGHTS - WATER RIGHTS ADJUDICATED

A. Certain of the Parties and/or their successors in interest are the owners of Adjudicated Rights to extract water from the Basin, which Adjudicated Rights are of the same legal force and effect and without priority with reference to each other. The amount of such Adjudicated Rights, stated in acre-feet per year, of each of these Parties, as of the date of this Amended Judgment, is set forth in Exhibit A to this Amended Judgment and is hereby declared and established accordingly. Provided, however, that the Adjudicated Rights so declared and established shall be subject to the condition that the water produced, when used, shall be put to beneficial use through reasonable methods of use and reasonable methods of diversion; and provided further that the exercise of all of said Adjudicated Rights shall be subject to a pro rata reduction, if such reduction is required, to preserve said Basin as a common source of water supply.

B. Certain of the Parties have no Adjudicated Rights to extract water from the Basin. The name of each of said Parties, as of the date of this Amended Judgment, is listed in Exhibit A with a zero following its name, and the absence of such Adjudicated Rights in said Parties is hereby established and declared.

C. As provided in Exhibit B to this Judgment, there is hereby established a "nonconsumptive water use right" in the Basin, which is subordinate to the Adjudicated Rights set forth in Section III hereof and which right is exercisable only on specifically defined lands and cannot be separately conveyed or transferred apart therefrom.

D. As further provided in Exhibit B to this Judgment, any party herein may petition the Administrative Body, acting on behalf of the Watermaster, for a non-consumptive water use permit as part of a project to recover old refined oil or other pollutants that has leaked into the underground aquifers of the Basin.

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IV. TRANSFERABILITY OF RIGHTS

All Adjudicated Rights decreed and adjudicated herein, and the right to extract Stored Water stored within the Basin pursuant to the provisions herein, may be transferred, assigned, licensed or leased by the owner thereof provided, however, that no such transfer shall be complete until compliance with the appropriate notice procedures established by the Watermaster herein.

V. PHYSICAL SOLUTION – BASIN STORAGE, CARRYOVER, BASIN OPERATING RESERVE, AND EXCESS PRODUCTION

1. Determination of Available Dewatered Space

A. There exists within the Basin Available Dewatered Space which has not been optimally utilized for Basin management and storage of native water and Developed Water. The Court finds and determines that: (i) there is up to one hundred and twenty thousand (120,000) acre-feet of Available Dewatered Space in the Basin; (ii) use of the Available Dewatered Space will increase reasonable and beneficial use of the Basin by permitting the more efficient procurement and management of Replenishment Water and allowing Parties to have Stored Water in the Basin, thereby increasing the conservation of water and reliability of the water supply available to all Parties; and (iii) compliance with the terms, conditions and procedures set forth in this Amended Judgment is meant to prevent Material Physical Harm to the Basin associated with the use of the Available Dewatered Space for Stored Water. If the Court determines, pursuant to Section XIII of this Judgment, that the amount of Available Dewatered Space is more than or less than 120,000 acre-feet, then the Court shall equitably adjust the amount of the Basin Operating Reserve and Adjudicated Storage Capacity such that no more than 40.9% of the Available Dewatered Space is allocated to the Basin Operating Reserve. No Party shall Store Water in the Basin except in the Available Dewatered Space in conformity with this Amended Judgment.

B. It is essential that use of the Available Dewatered Space be undertaken for the greatest public benefit pursuant to uniform, certain and transparent regulation that encourages the conservation of water and reliability of the water supply, avoids Material Physical Harm, and promotes the reasonable and beneficial use of water. Accordingly, in the event the Watermaster becomes aware of the development of Material Physical Harm, or a reasonably foreseeable or

imminent threat of the development of Material Physical Harm, relating to the use of the Available Dewatered Space, the Watermaster shall (i) promptly take all reasonably necessary action to cease or avoid such harm as authorized under this Amended Judgment and the Watermaster Rules, and (ii) notice a hearing within thirty (30) days before the Court and concurrently file a report with the Court, served on all Parties, which shall explain the relevant facts then known by the Watermaster relating to the Material Physical Harm, or imminent threat thereof, including without limitation, the location of the occurrence, the source or cause, existing and potential physical impacts or consequences of the identified or threatened Material Physical Harm, all actions taken by the Watermaster to cease or avoid such harm, and any other recommendations to remediate the identified or threatened Material Physical Harm.

C. To fairly balance the needs of the divergent interests of Parties having Adjudicated Rights in the Basin, on the one hand, and the role of WRD on the other hand, and in consideration of the shared desire and public purpose of removing impediments to the voluntary conservation, storage, exchange and transfer of water, the Available Dewatered Space is apportioned into complementary classifications of forty-nine thousand one hundred (49,100) acre-feet of Basin Operating Reserve and seventy thousand nine hundred (70,900) acre-feet of Adjudicated Storage Capacity as set forth in this Section V. The apportionment contemplates flexible administration of storage capacity where use is apportioned among competing needs, while allowing Available Dewatered Space to be used from time to time as Space-Available Storage, subject to the priorities specified in this Amended Judgment.

2. Basin Operating Reserve

A. It is in the public interest for WRD to prudently exercise its discretion to purchase, spread, and inject water, to provide for in-lieu replenishment, and otherwise to fulfill its replenishment function within the Basin in accordance with the WRD Act. Accordingly, this Amended Judgment expressly recognizes that WRD may use the Basin Operating Reserve to manage available sources of water and otherwise fulfill its replenishment functions. WRD may allow naturally occurring water to occupy the Basin Operating Reserve, as needed and in its discretion, but cannot thereupon assert ownership, control or possession over naturally occurring

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water as Replenishment Water or Stored Water. WRD's priority right to use the Basin Operating Reserve is not intended to allow WRD to sell or lease Stored Water within that portion of the Available Dewatered Space.

B. WRD shall have forty-nine thousand, one hundred (49,100) acre-feet of Available Dewatered Space as the Basin Operating Reserve in accordance with the WRD Act.

C. WRD shall have a first priority right to use the Basin Operating Reserve in accordance with the WRD Act. WRD's first priority right to the Basin Operating Reserve is absolute. To the extent that there is a conflict between WRD and any other Party regarding the availability of and desire to use any portion of the Basin Operating Reserve, the interests of WRD will prevail. Any dispute as to the use of any portion of the Basin Operating Reserve shall be heard directly by the Court, after notice of hearing served on all Parties.

D. To the extent WRD does not require the use of some or all of the Basin Operating Reserve, that portion of the Basin Operating Reserve that is not then being used shall be available for Space-Available Storage in accordance with Section V.10 of this Amended Judgment and provided that such Space-Available Storage will not impede WRD's use of the Basin Operating Reserve. WRD's failure to use any portion of the Basin Operating Reserve for any time will not cause forfeiture or limit WRD's absolute right to make use of the Basin Operating Reserve in the future without compensation. Nothing herein shall permit WRD to limit or encumber its right to use the Basin Operating Reserve in accordance with the WRD Act.

3. Adjudicated Storage Capacity

The Adjudicated Storage Capacity is further allocated among the following classifications of Stored Water:

- Individual Storage Allocation: twenty-five thousand eight hundred (25,800) acre-feet.
- Community Storage Pool: thirty-five thousand five hundred (35,500) acre-feet.
- Regional Storage Allocation: nine thousand six hundred (9,600) acre-feet.

4. Carryover

A. In order to add flexibility to the operation of this Amended Judgment and to assist in a physical solution to meet the water requirements in the West Coast Basin, each of

the Parties who is adjudged to have an Adjudicated Right and who, by the end of an Administrative Year, does not extract from the Basin all of such Party's Total Adjudicated Production Right, is permitted to carry over from such Administrative Year the right to extract from the Basin in the immediately following Administrative Year an amount of water equivalent to the amount of its Total Adjudicated Production Right that exceeds the amount of its actual extraction during said Administrative Year of water pursuant to its Total Adjudicated Production Right (hereinafter referred to as "Carryover"). Carryover, as computed above for a Party, shall be reduced by the quantity of Stored Water then held in the Available Dewatered Space by that Party at the commencement of the immediately following Administrative Year, although such reduction shall not cause the amount of Carryover to be less than 20% of the Party's Total Adjudicated Production Right.

B. A Party having Carryover may, from time to time, elect to convert all or part of such Party's Carryover to Stored Water, as authorized herein, upon payment of the Replenishment Assessment to WRD. The WRD shall maintain, account and use the Replenishment Assessment paid for Carryover Conversion in accordance with the provisions of Section XI.2(A)(5) of this Amended Judgment. Such Stored Water shall be assigned to that Party's Individual Storage Allocation, if available, and otherwise to the Community Storage Pool, and thereafter to then existing excess capacity within other Individual Storage Allocation, the Regional Storage Allocation, and only then if all remaining space is fully occupied, to the Basin Operating Reserve for Space-Available Storage.

C. By reason of this Court's Orders dated June 2, 1977 and September 29, 1977, for the water years 1976-77 and 1977-78 any Party (including any successor in interest) can Carryover until utilized any Adjudicated Right (including any authorized Carryover from prior years) unexercised during said water years. This Amended Judgment shall not abrogate the rights of any additional Carryover of unused Adjudicated Rights of the Parties as may exist pursuant to the Orders filed as of June 2, 1977 and September 29, 1977.

5. Individual Storage Allocations

A. Up to twenty-five thousand eight hundred (25,800) acre-feet of Available

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Dewatered Space is apportioned among the Parties as "Individual Storage Allocation" for the purpose of providing each Party holding an Adjudicated Right under the Amended Judgment with a first priority right to use an amount of that Available Dewatered Space equal to approximately forty percent (40%) of their respective Adjudicated Right. Water may be deposited into storage and assigned to an Individual Storage Allocation either through Carryover Conversion or by other means authorized under the Amended Judgment. The Individual Storage Allocation will be held in the name of the Party holding the Adjudicated Right upon notice to the Storage Panel. To the extent a Party does not require the use of some or all of its Individual Storage Allocation, that portion of the Individual Storage Allocation that is not then being used shall be available for Space-Available Storage as provided in Section V10.A.

B. A Party's first priority right to its Individual Storage Allocation is absolute. To the extent that there is a conflict between a Party holding an Adjudicated Right and any other Party or WRD regarding the availability of and desire to use any portion of their Individual Storage Allocation, the interests of the Party with the Individual Storage Allocation will prevail. Any dispute as to the use of any portion of a Party's Individual Storage Allocation shall be heard directly by the Court, after notice of hearing served on all Parties.

6. Community Storage Pool

A. Up to thirty-five thousand five hundred (35,500) acre-feet of Available Dewatered Space is apportioned for the use by all Parties to the Amended Judgment with Adjudicated Rights on a shared or community basis, hereafter referred to as the "Community Storage Pool." A Party that has fully occupied its Individual Storage Allocation may, on a first-in time, first in right basis (subject to the limits expressed below) place water into storage in the Community Storage Pool upon notice to the Storage Panel. So long as there is available capacity in the Community Storage Pool, any Party may store water in the Community Storage Pool, through Carryover Conversion as provided herein or by any other means authorized under the Amended Judgment, provided such Party has first fully occupied that Party's available Individual Storage Allocation.

B. So long as there is adequate storage capacity available within the

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Community Storage Pool, any Party may store water through any authorized method up to the prescribed limits of available capacity within the Community Storage Pool upon notice to the Storage Panel.

C. After a Party effectively occupies Available Dewatered Space within the Community Storage Pool and then withdraws water from the Community Storage Pool, that Party shall be allowed a period of twenty-four (24) months to completely refill the vacated storage capacity before the capacity will be determined abandoned and available for use by other Parties. However, once the Basin's Community Storage Pool has been filled (35,500 acre-feet in storage), a Party may exercise its twenty-four (24) month refill priority only once, and thereafter only provided there is then capacity available to permit that Party to refill the vacated space. Except as to space subject to the refill right, as provided herein, all access to the Community Storage Pool shall be made available pursuant to a basis of first in time, first in right.

D. A Party that has maintained Stored Water in the Community Storage Pool for ten (10) consecutive years shall be subject to the following provisions whenever the Community Storage Pool is at least twenty-five percent (25%) occupied with Stored Water based on an aggregate of all Parties holding Adjudicated Rights who have Stored Water in the Community Storage Pool: (i) the Party may elect to have that Stored Water deemed transferred to Space-Available Storage in accordance with Section V.10 of this Amended Judgment, but if such an election is not made or there is no Space-Available Storage, then (ii) the Stored Water shall be deemed extracted first in advance of all other extraction rights in subsequent years (notwithstanding the order of production set forth in Section IX.2) until the Party's entire Community Storage account has been extracted. After the Stored Water is either transferred to Space Available Storage or extracted as provided herein, then said Party may thereafter make a renewed use of Community Storage on terms equal to other Parties on a first in time, first in right, and space-available basis.

7. **Regional Storage Allocation**

A. Up to nine thousand six hundred (9,600) acre feet of Available Dewatered Space in the West Coast Basin (the "Regional Storage Allocation") is designated for "Regional

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Storage Project(s)" that: (i) do not constitute Water Augmentation Projects by enhancing the long-term reliable yield of the Basin; and (ii) require storage capacity in excess of Individual Storage Allocations and the Community Storage Pool.

B. Regional Storage Projects must be pre-approved by the Storage Panel of the Watermaster, as provided in Section V.12. The Storage Panel shall not approve a Regional Storage Project unless the applicant demonstrates (i) a proposed place of use and beneficial use for the water identified at the time of storage, and (ii) that the Regional Storage Project is Technically Feasible, will not cause Material Physical Harm and will confer a "Regional Benefit".

C. It is anticipated that Regional Storage Projects will be the principal category of storage for potential Storage Projects sponsored by, or for the benefit of, entities that do not hold an Adjudicated Right, although any Party to the Judgment may also propose a Regional Storage Project. Any entity which is not a Party to the Judgment who receives approval of a Regional Storage Project shall intervene into the Judgment as a Party prior to commencing the Regional Storage Project. A Regional Storage Project approved by the Storage Panel that occupies space within the nine thousand six hundred (9,600) acre-feet of Available Dewatered Space shall have a priority right to occupy the Regional Storage Allocation over any other use being made on a space-available basis.

D. Regional Storage Projects may include in-lieu, Carryover Conversion, physical improvements, recharge of "wet water" by spreading or injection, reducing the overall cost for the WRD to perform its replenishment function, and other measures that propose to make beneficial use of the designated storage capacity.

E. Parties receiving a right to Store Water pursuant to an approved Regional Storage Project shall have the first priority right to Regional Storage Allocation. Stored Water held in the Regional Storage Allocation by a Party with an Adjudicated Right as Space-Available Storage is subject to the limits of an annual extraction of one hundred and twenty percent (120%) of the storing Party's Total Adjudicated Production Right or as otherwise specified in accordance with Section IX.1 herein.

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F. To the extent that some or all of the Regional Storage Allocation is unused, that portion of the Regional Storage Allocation that is not then being used shall be available for Space-Available Storage as provided in Section V10.A.

8. Limitations on Storage

A. Irrespective of the category of storage utilized, each Party with an Adjudicated Right shall not cumulatively have in storage in the Available Dewatered Space at any time Stored Water totaling more than two hundred percent (200%) of that Party's Adjudicated Right. However, a Party with an Adjudicated Right less than 100 acre feet may store water in the Available Dewatered Space up to 200 acre feet.

B. Notwithstanding the foregoing, a Party with an Adjudicated Right may store additional water up to 50% of its Adjudicated Right in excess of the aforementioned limit of 200% of its Adjudicated Right in Space-Available Storage as provided in Section V.10 of this Amended Judgment for a cumulative total of up to 250% of the Party's Adjudicated Right. Any Party with an Adjudicated Right seeking to store water in excess of 200% of its Adjudicated Right shall apply for additional storage from the Storage Panel, which shall determine whether additional storage space is available in light of the amount of storage space being utilized by all Parties and providing adequate protection for planned or anticipated storage projects by other Parties. The Storage Panel shall establish requirements as part of the Watermaster Rules including providing notice of such applications to all Parties, a means for objection, standards for granting or denying such requests, and promulgate requirements governing the extraction of the additional storage.

C. A Party without an Adjudicated Right who holds rights to store water in the Regional Storage Allocation by virtue of an approved Regional Storage Project shall comply with any extraction limits established by the Storage Panel in its approval of said Regional Storage Project. Subject to the foregoing, the right to extract Stored Water in the Basin may be freely transferred to another Party to this Amended Judgment, as permitted by Section IV.

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9. Extraction of Stored Water; Exemption from Replenishment Assessment

The Court finds and declares that the extraction of Stored Water as permitted hereunder does not constitute "production of groundwater" within the meaning of Water Code Section 60317 and that no Replenishment Assessment shall be levied on the extraction of Stored Water. This determination reflects the practical application of certain provisions of this Amended Judgment concerning storage of water and extraction of Stored Water, including without limitation the following: (1) payment of the Replenishment Assessment is required upon Carryover Conversion, which allows WRD to replenish the Basin (as addressed under Section V.4(B); (2) Developed Water introduced into the Basin through spreading or injection for storage by or on behalf of a Party using Individual Storage Allocation or Community Storage Pool (as authorized under Sections V.5 and V.6), or pursuant to a Water Augmentation Project (as authorized under Section V.11), which needs not be replenished by WRD requiring payment of the Replenishment Assessment; and (3) with respect to Regional Storage Projects, a Regional Benefit must be established as a prerequisite of such a project, the water from which need not be replenished by WRD requiring payment of the Replenishment Assessment.

10. Space-Available Storage, Relative Priority, and Dedication of Abandoned Water

A. To balance the need to protect first priority uses of storage and to encourage the full utilization of the Adjudicated Storage Capacity and the Basin Operating Reserve within the Available Dewatered Space, any Party with an Adjudicated Right may make interim, temporary use of then currently unused Available Dewatered Space within (i) any category of Adjudicated Storage Capacity, and then (ii) if all Adjudicated Storage Capacity is being fully used for Stored Water, then within the Basin Operating Reserve ("Space-Available Storage"), subject to the following criteria:

(1) Any Party with an Adjudicated Right may engage in Space-Available Storage without prior approval from the Storage Panel of the Watermaster provided that the storing Party or Parties with an Adjudicated Right shall assume all risks of waste and loss regardless of the hardship.

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(2) No Party with an Adjudicated Right may use any portion of the Basin Operating Reserve for Space-Available Storage unless that Party with an Adjudicated Right has already maximized its allowed storage pursuant to its Individual Storage Allocation and all available Community Storage and Regional Storage is already in use.

(3) Space-Available Storage shall first utilize unused storage space within the Individual Storage Allocation category, subject to the provisions in this Amended Judgment, and the Regional Storage Allocation before utilizing any available unused storage space within Community Storage. No utilization of Community Storage under Space-Available Storage shall be counted in making determinations under Sections V.6.C. or V.6.D.

(4) Whenever the Administrative Body determines that a Party with an Adjudicated Right is making use of excess Available Dewatered Space for Space-Available Storage without prior approval from the Storage Panel, the Administrative Body shall issue written notice to the Party with an Adjudicated Right informing them of the risk of loss and inform that Party what space (Individual Allocation, Regional Storage, Community Pool or Basin Operating Reserve) it is occupying on a Space-Available basis.

(5) Use of Space-Available Storage shall be administered in accordance with the rule of first in time, first in right. The Party with an Adjudicated Right holding the lowest priority right in Space-Available Storage shall assume responsibility for evacuating their Stored Water as may be necessary to accommodate a Party with an Adjudicated Right holding superior priority right. Any dispute concerning Space-Available Storage priorities, except as to Basin Operating Reserve or the Individual Storage Allocation, shall be submitted first to the Storage Panel for hearing and determination. The Storage Panel's determination, or lack thereof, may be appealed by motion to the Court by any Party to the dispute. Any dispute concerning the Community Storage Pool Allocation or the Regional Storage Allocation shall be submitted first to the Storage Panel for hearing and determination. The Storage Panel's determination, or lack thereof, may be appealed by motion to the Court by any Party to the dispute.

(6) Whenever the Available Dewatered Space is needed to accom-

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modate the priority use within a respective category of Adjudicated Storage Capacity, or WRD seeks to make use of its priority right to the Basin Operating Reserve to fulfill its replenishment function, the Storage Panel shall issue a notice to evacuate within ninety (90) days the respective category of Adjudicated Storage Capacity or Basin Operating Reserve. Within sixty (60) days after receipt of such a notice to evacuate, the Party with an Adjudicated Right receiving the notice may provide a written election to the Storage Panel that it will store its Stored Water in any other excess Available Dewatered Space first within the Adjudicated Storage Capacity, if available, and then if all Adjudicated Storage Capacity is being fully used for Stored Water, then within the Basin Operating Reserve, if available. The Party with an Adjudicated Right's Stored Water shall be deemed spilled and dedicated to the Basin in furtherance of replenishment of the Adjudicated Rights without compensation if the Party with an Adjudicated Right does not make a timely election or if there is no excess Available Dewatered Space. No Stored Water will be deemed so dedicated unless the cumulative quantity of water held as Stored Water in the Available Dewatered Space exceeds one hundred and twenty thousand (120,000) acre-feet in the West Coast Basin. Any dispute as to Stored Water threatening to be spilled or dedicated to the Basin shall be submitted to the Court pursuant to a motion by any Party to the dispute after to the expiration of sixty (60) days of the ninety-day period in the notice to evacuate.

B. A Party with an Adjudicated Right that seeks to convert the Stored Water held as Space-Available Storage to a more firm right, may in their discretion, contract for the use of another Party with an Adjudicated Right's Individual Storage Allocation, or may apply for approval of its request as a Regional Storage Project, or may add such water to the Community Storage Pool once space therein becomes available.

11. Water Augmentation

A. Physical and management actions of the Parties in consultation with WRD shall add to the long-term reliable yield of the Basin. Innovations and improvements in management practices that increase the conservation and maximization of the reasonable and beneficial use of water should be promoted. To the extent that Parties to the Amended Judgment in consultation with WRD implement a project that provides additional long-term reliable water

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supply to the West Coast Basin, the annual extraction rights in the West Coast Basin will be increased commensurately in an amount to be determined by the Storage Panel to reflect the actual yield enhancement associated with the project. Augmented supplies of water resulting from such a project may be extracted or stored as permitted in this Amended Judgment in the same manner as other water.

B. Participation in any Water Augmentation Project shall be voluntary. The terms of participation will be at the full discretion of the participating Parties. Parties who propose a Water Augmentation Project ("Project Leads") may do so in their absolute discretion, upon such terms as they may determine and with Storage Panel approval. All other Parties will be offered a reasonable opportunity to participate in any Water Augmentation Project on condition that they share proportionately in generally common costs and benefits, and assume the obligation to bear exclusively the cost of any improvements that are required to accommodate their individual or peculiar needs.

C. Advance written notice shall be provided which reasonably describes the potential project and the proposed terms under which a Party may "opt-in." Parties shall be afforded a reasonable time under the then prevailing circumstances for appropriate deliberation and action by the Parties. Disputes as to the adequacy of the notice and the time for project approval may be referred to the Storage Panel and then to the Court under its continuing jurisdiction.

D. Parties may elect, in their discretion, to opt into a Water Augmentation Project ("Project Participants") so long as they agree to offer customary written and legally binding assurances that they will bear their proportionate share of all costs attributable to the Water Augmentation Project or provide other valuable consideration that is deemed sufficient by the Project Leads and Project Participants.

E. All Water Augmentation Projects must be pre-approved by the Storage Panel, as provided in Section V.12. The Storage Panel shall determine the amount of additional groundwater extraction authorized as a result of a Water Augmentation Project, which determination shall be based upon substantial evidence. The amount of additional groundwater

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extraction shall not exceed the amount by which the Water Augmentation Project will increase the long-term sustainable yield of the Basin. No extraction right shall be established and no extraction shall occur until new water has been actually introduced into the Basin as a result of the Water Augmentation Project. Any approval for a Water Augmentation Project shall include provisions: (i) requiring regular monitoring to determine the actual amount of such new water made available; (ii) requiring make up water or equivalent payment therefore to the extent that actual water supply augmentation does not meet projections; and (iii) adjusting water rights attributable to the Water Augmentation Project to match the actual water created. Any approval for a Water Augmentation Project shall be based on a finding the Water Augmentation Project is Technically Feasible and will not cause Material Physical Harm.

F. The right to extract augmented water from the Basin pursuant to a Water Augmentation Project shall be accounted for separately and shall not be added to a Party's Adjudicated Right.

G. A Party that elects to participate and pays its full pro-rata share of costs associated with any Water Augmentation Project, and/or reaches an agreement with other participants based upon other valuable consideration acceptable to the Lead Parties and the remaining Project Participants, will receive a proportionate right to extract the water resulting from the Water Augmentation Project.

H. A Party that does not elect to participate ("Non-Participating Party") will not receive a right to extract water resulting from to the Water Augmentation Project. Non-Participating Parties will not be required to pay any costs, fees or assessments of any kind attributable to the respective Water Augmentation Project including the fees required hereunder for the Watermaster duties or directly or indirectly as the WRD Replenishment Assessment.

I. Because water made available for Water Augmentation will be produced annually, fluctuations in groundwater levels will be temporary, nominal, and managed within the Basin Operating Reserve.

J. WRD shall not obtain any extraction right or other water right under the Amended Judgment by virtue of its consultation in any Water Augmentation Project.

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12. **Storage Procedure**

A. Storage Reporting and Monitoring

The Administrative Body (defined below) shall: (i) prescribe forms and procedures for the orderly reporting of Stored Water and water from a Water Augmentation Project; (ii) maintain records of all water stored in the Basin; (iii) undertake the monitoring and modeling of Storage Projects, Water Augmentation Projects and New Storage Facilities required by this Judgment; and (iv) provide an accounting of Stored Water and/or water from a Water Augmentation Project within thirty (30) days of a written request by an Adjudicated Rights holder or a Party with rights to Stored Water. For purposes of Sections V.12 and V.13 of this Amended Judgment, Water Augmentation Project(s), New Storage Facilities and Storage Projects that require the approval of the Storage Panel shall collectively be referred to as "Projects."

B. Application and Notification Procedure

(1) Nothing in this Amended Judgment shall alter a Party's duty to comply with CEQA or any other applicable legal requirements as to any Project imposed by applicable law. Further, no action or approval under this Amended Judgment shall constitute a bar to a Party's duty to comply with CEQA or any other legal requirements as to any Project imposed by applicable law. However, a Party to this Amended Judgment who is undertaking or engaging in CEQA review for a Project that requires approval by the Storage Panel shall provide to the Watermaster copies of the notices required under CEQA to be provided to the public within the time periods proscribed by CEQA.

(2) For Projects that require review and approval by the Storage Panel, as provided in Section V.13, the Administrative Body shall provide appropriate applications, and shall work with Project applicant(s) to complete the application documents for presentation to the Storage Panel.

(3) The Administrative Body shall conduct the groundwater modeling necessary to support a Party's application for approval of a Project prior to the Storage Panel's hearing on said Project. Upon receipt of a notice of a lead agency's intention to prepare a CEQA Review Document, the Administrative Body shall conduct the modeling described in Section

V.12 of this Amended Judgment and submit such modeling to the lead agency for inclusion in the proposed or draft CEQA documentation and the CEQA Review Document, subject to the Party's payment of the costs of that modeling. Such modeling is not required to be conducted by the Administrative Body if the Administrative Body and the Chair of the Water Rights Panel determine in writing that (i) the likely rise in water levels from the proposed Project would be minimal, (ii) other evidence (including any modeling prepared by the Project proponent) demonstrates that the Project will not cause Material Physical Harm after consideration of the factors outlined in Section V.13.B(3), and (iii) an Environmental Impact Report is not required under CEQA. If the Administrative Body and the Chair of the Water Rights Panel make such a determination, they shall promptly inform the entire Storage Panel. Such modeling shall thereafter be conducted by the Administrative Body if either the Water Rights Panel or the Board of Directors of WRD request that such modeling be conducted.

(4) The Party which is the proponent of a proposed Project shall bear all costs associated with the Watermaster's preparation and review of the application for approval of the Project and all costs associated with its implementation, including reimbursement of fees and costs incurred by the Administrative Body in conducting the necessary modeling and other technical studies.

(5) Within 30 days of receipt of an application for a Project or any notification(s) associated with the CEQA review for such Project, the Administrative Body shall provide written notice (either by electronic mail or U.S. postal mail) and access to a copy of the Project application and/or any available CEQA documentation, including the CEQA Review Document, to all Parties to the Amended Judgment. Any Party to the Amended Judgment shall be entitled to submit its own report related to the Project, and the Administrative Body shall consider such report in its processing of the Project application.

(6) As part of the application process, the Administrative Body shall cause the preparation of any study or analysis necessary to determine that the Project is Technically Feasible and will not cause Material Physical Harm, including the appropriate modeling of the cumulative effect of the particular Project on water levels in the West Basin. The

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Administrative Body may rely on CEQA documentation, including the CEQA Review Document, for a Project for the information necessary to make a determination on Technical Feasibility and Material Physical Harm and not prepare any additional analyses if the CEQA documentation contains the necessary information for consideration of the Project including the groundwater modeling required by this Amended Judgment.

C. Notice Process

Within thirty (30) days after submission of the final and complete Project application documents (including the technical reports, CEQA Review Document and modeling results), the Administrative Body shall provide notice (either by electronic mail or U.S. postal mail), and access to copies of the final and complete application documents to all Parties to the Amended Judgment.

13. Review/Approval Process

A. Projects Subject to Review

(1) Storage Projects exempt from the review and approval process provided in this Section V.13 include:

- use of Total Adjudicated Production Rights, except for extraction above one hundred and twenty percent (120%) of a Party's extraction right, as set out in Section IX.1;
- replenishment of the Basin with Replenishment Water by WRD;
- WRD's operations within the Basin Operating Reserve;
- Carryover Conversion; and
- Use of Existing Facilities to store water in the Individual Storage Allocation or the Community Storage Pool.

(2) All other Projects shall be subject to review and approval, as provided in this Section V.13, including, but not limited to, those projects involving:

- material variances to substantive criteria governing projects exempt from the review and approval process;
- modifications to previously approved Projects and related agreements;

- a Party's proposal for Carryover Conversion in quantities greater than the express apportionment of Adjudicated Storage Capacity on a non-priority, space-available, interim basis, and
- any other means of storage not exempt by Section V.13.A(1).

B. Hearing and Approval Process for Watermaster Review

The following procedures shall be followed by the Watermaster where Storage Panel review is required or permitted under this Amended Judgment.

(1) No later than thirty (30) days after notice has been issued in accordance with Section V.12, the matter shall be set for hearing before the Storage Panel. A staff report shall be submitted by the Administrative Body in conjunction with the completed application documents, which report shall include proposed conditions of approval if the recommendation in the staff report is to approve the Project. The Water Rights Panel may prepare a separate independent staff report, if it elects to do so. Any Party to the Amended Judgment shall be entitled to submit its own report, and such report shall be considered by the Storage Panel as part of its review; however, a Party shall not be entitled to raise issues to the Storage Panel that it failed to raise as part of any previously completed CEQA process for the Project under consideration by the Storage Panel.

(2) Whenever feasible, the WRD Board of Directors and the Water Rights Panel shall conduct a joint hearing (i.e., the presumption shall be in favor of joint hearings). If a joint hearing is not held, the Water Rights Panel hearing shall be conducted in the manner prescribed for public agency hearings under the Brown Act.

(3) Factors to be considered in reviewing a Project include (i) facilities in the vicinity of the Project; (ii) proximity to drinking water wells and depths at which such wells are screened; (iii) depth at which water will be added under the Project; (iv) resulting groundwater elevations from the Project based on groundwater modeling conducted by the Administrative Body and, if they elect to do so, the Project proponent, (v) existing contamination, if any, in the vicinity of the Project; (vi) preferential groundwater pathways; (vii) the source of the water for the Project; and (v) information provided by any Party.

(4) The WRD Board of Directors and the Water Rights Panel shall each adopt written findings explaining their decision on the Project, although if both entities reach the same decision, they shall work together to adopt a uniform set of findings. The findings must include the evaluation of the factors identified in Section V.13.B(3) and a determination that the Project is Technically Feasible and will not cause Material Physical Harm.

(5) The Storage Panel shall not be required to conduct a hearing on a Project if it (i) reviews the CEQA Review Document adopted by a lead agency; (ii) the CEQA Review Document includes the groundwater modeling required under this Amended Judgment; (iii) determines that the CEQA Review Document evaluated the factors identified in Section V.13.B(3); and (iv) determines that the CEQA Review Document demonstrates that the Project is Technically Feasible and will not cause Material Physical Harm.

(6) Unless both the WRD Board of Directors and Water Rights Panel approve the Project, the application shall be deemed denied (a "Project Denial"), provided, however, that if either the WRD Board of Directors or the Water Rights Panel is unable to render a decision on the application due to a conflict of interest arising under Section V.13 (A)(8) of this Amended Judgment, then the application shall be deemed approved if the remaining body of the Storage Panel approves the application. If both the WRD Board of Directors and Water Rights Panel approve the Project, the Project shall be deemed approved (a "Project Approval").

(7) If the Storage Panel approves the Project, it may impose reasonable conditions of approval on matters relevant to the Project, which shall include mandatory conditions of approval including annual limits on the amount of Stored Water, annual extraction limits of Stored Water, and water quality standards. The WRD Board of Directors and the Water Rights Panel shall work together to adopt a uniform set of conditions of approval promulgated after adoption of the Rules pursuant to Section X.1(E) and following the same review and comment process set forth in Section XI.1(E).

(8) Neither WRD nor any member of the Water Rights Panel shall render any decision on Projects subject to Watermaster review under Section V.13 of this Amendment Judgment if said entity has a conflict of interest under applicable law or the rules and

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regulations promulgated pursuant to Section XI.1(E) with respect to said Project.

(9) Any factual determinations made by the Watermaster, or any constituent body thereof, pursuant to this section, shall be based on the substantial evidence test.

C. Trial Court Review

An applicant, Adjudicated Rights holder or a Party holding rights to Stored Water may seek the Storage Panel's reconsideration of a Project Denial or Project Approval. However, there shall be no process for mandatory reconsideration or mediation of a Project Approval or a Project Denial either before the Administrative Body or the Water Rights Panel. Any Party may file an appeal from a Project Approval or Project Denial with this Court, as further described in Section XI.4.D. The Trial Court shall review the decisions of the Watermaster, Storage Panel and Water Rights Panel in accordance with Section XI.4(D)

14. Excess Production

In order to meet possible emergencies, each of the Parties who is adjudged to have an Adjudicated Right and not possessing Stored Water, is permitted to extract from the Basin in any Administrative Year for beneficial use an amount in excess of each such Party's Total Adjudicated Production Rights not to exceed two (2) acre-feet or ten percent (10%) of such Party's Total Adjudicated Production Rights, whichever is the larger, and in addition thereto, such greater amount as may be approved by the Court. Notwithstanding Section XI.4 herein, if such greater amount is recommended by the Water Rights Panel, such order of Court may be made *ex parte*. Each such Party so extracting water in excess of its Total Adjudicated Production Rights shall be required to reduce its extractions below its Total Adjudicated Production Rights by an equivalent amount in the Administrative Year next following. Such requirement shall be subject to the proviso that in the event the Court determines that such reduction will impose upon such a Party, or others relying for water service upon such Party, an unreasonable hardship, the Court may grant an extension of time within which such Party may be required to reduce its extractions by the amount of the excess theretofore extracted by such Party.

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VI. PHYSICAL SOLUTION - EXCHANGE POOL

As a further part of said physical solution herein imposed:

1. Mandatory Offer to Exchange Pool

Not less than sixty (60) days prior to the beginning of each Administrative Year, each Party having supplemental water available to it through then existing facilities, other than water which any such Party has the right to extract hereunder, shall file with the Water Rights Panel the offer of such Party to release to the Exchange Pool the amount by which such Party's Adjudicated Right exceeds one-half of the estimated total required use of water by such Party during the ensuing Administrative Year, provided that the amount required to be so offered for release shall not exceed the amount such Party can replace with supplemental water so available to it.

2. Basis of Offer to Exchange Pool; Redetermination of Offer by Water Rights Panel

Such estimate of total required use and such mandatory offer shall be made in good faith and shall state the basis on which the offer is made, and shall be subject to review and redetermination by the Water Rights Panel, who may take into consideration the prior use by such Party for earlier Administrative Years and all other factors indicating the amount of such total required use and the availability of replacement water.

3. Voluntary Offer to Exchange Pool

Any Party filing an offer to release water under the mandatory provisions of this Section VI may also file a voluntary offer to release any part or all of any remaining amount of water which such Party has the right under this Amended Judgment to pump or otherwise extract from the Basin, and any Party who is not required to file an offer to release water may file a voluntary offer to release any part or all of the amount of water which such Party has the right under this Amended Judgment to pump or otherwise extract from the basin. All such voluntary offers shall be made not less than sixty (60) days prior to the beginning of each Administrative Year.

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4. Price of Water Offered to Exchange Pool

Each offer to release water pursuant to this Section VI shall be the price per acre-foot declared and determined at the time of the filing of such offer by the releasing Party; provided that:

(a) such price per acre-foot shall not exceed the price that the releasing Party would have to pay to obtain from others, in equal monthly amounts, through existing facilities, a quantity of supplemental water equal in amount to that offered to be released; *or*

(b) if any such releasing Party has no existing facilities through which to obtain water from others, such price shall not exceed the sum of the price per acre-foot charged by MWD and West Coast Basin Municipal Water District to municipalities and public utilities for water received from MWD.

5. Price Dispute Objection - Water Rights Panel Determination

A. In the event of a dispute as to any price at which water is offered for release, any Party affected thereby may, within thirty (30) days thereafter, by an objection in writing, refer the matter to the Water Rights Panel for determination. Within thirty (30) days after such objection is filed, the Water Rights Panel shall consider said objection and shall make its finding as to the price at which said water should be offered for release and notify all Parties.

B. The costs of such determination shall be apportioned or assessed by the Water Rights Panel in its discretion between or to the Parties to such dispute, and the Water Rights Panel shall have the power to require, at any time prior to making such determination, any Party or Parties to such dispute to deposit with the Water Rights Panel funds sufficient to pay the cost of such determination.

C. Any Party may appeal to the Court from a decision of the Water Rights Panel as provided in Section XI.4. Pending the Court's determination if the water so offered has been allocated, the Party making the offer shall be paid the price declared in its offer, subject to appropriate adjustment upon final determination.

6. Request for Water From Exchange Pool

A. Not less than sixty (60) days prior to the beginning of each Administrative

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Year, any Party whose estimated demand for water during the ensuing Administrative Year exceeds the sum of all of the Party's supplies available to it from the Basin under this Amended Judgment, may file with the Water Rights Panel a request for the release of water in the amount that said estimated demand exceeds said available supply. Such request shall be made in good faith and shall state the basis upon which the request is made, and shall be subject to review and redetermination by the Water Rights Panel.

B. Within thirty (30) days thereafter, the Water Rights Panel shall advise, in writing, those Parties requesting water of the estimated price thereof. Any Party desiring to amend its request by reducing the amount requested may do so after the service of such notice.

C. Prior to the first day of each Administrative Year, the Water Rights Panel shall determine if sufficient water has been offered to satisfy all requests. If it determines that sufficient water has not been offered, it shall reduce such requests pro rata in the proportion that each request bears to the total of all requests.

D. Not later than the first day of each Administrative Year, the Water Rights Panel shall advise all Parties offering to release water of the quantities to be released by each and accepted in the Exchange Pool and the price at which such water is offered. Simultaneously, it shall advise all Parties requesting water of the quantities of released water allocated from the Exchange Pool and to be taken by each requesting Party and the price to be paid therefore.

7. Allocation of Exchange Pool Water by Water Rights Panel

A. In allocating water which has been offered for release to the Exchange Pool under Section VI.1, the Water Rights Panel shall first allocate that water required to be offered for release and which is offered at the lowest price, and progressively thereafter at the next lowest price or prices. If the aggregate quantity of water required to be released is less than the aggregate quantity of all requests for the release of water made pursuant to Section VI.6, the Water Rights Panel shall then allocate water voluntarily offered for release and which is offered at the lowest price and progressively thereafter at the next lowest price or prices, provided that the total allocation of water shall not exceed the aggregate of all such requests. Any water offered for release under Section VI and not accepted in the Exchange Pool, and not allocated therefrom,

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shall be deemed not to have been offered for release and may be extracted from the Basin by the Party offering the same as if such offer had not been made.

B. Each Party requesting the release of water for its use and to whom released water is allocated from the Exchange Pool may thereafter, subject to all of the provisions of this Amended Judgment, extract such allocated amount of water from the Basin, in addition to the amount such Party is otherwise entitled to extract hereunder during the Administrative Year for which the allocation is made.

8. Exchange Pool Water Pumped Before Pumper's Own Right

From and after the first day of each Administrative Year, all water extracted from the Basin by any Party requesting the release of water and to whom such water is allocated shall be deemed to have been water so released until the full amount released for use by it shall have been taken, and no such Party shall be deemed to have extracted from the Basin any water under its own right so to do until said amount of released water shall have been extracted. Water extracted from the Basin by Parties pursuant to their request for the release of water shall be deemed to have been taken by the offerors of such water under their own rights to extract water from the Basin.

9. Price and Payment for Water Released for Exchange Pool

A. All Parties allocated water under Section VI.6 shall pay a uniform price per acre-foot for such water, which price shall be the weighted average of the prices at which all the water allocated was offered for release.

B. Each Party shall pay to the Water Rights Panel, in five equal monthly installments during the applicable Administrative Year, an amount equal to the quantity of water allocated to it multiplied by said uniform price. The Water Rights Panel shall bill each such Party monthly for each such installment, the first such billing to be made on or before the first day of the second month of the Administrative Year involved, and payment therefore shall be made to the Water Rights Panel within thirty (30) days after the service of each such statement. If such payment be not made within said thirty (30) days such payment shall be delinquent and a penalty shall be assessed thereon at the rate of one percent (1%) per month until paid. Such delinquent

payment, including penalty, may be enforced against any Party delinquent in payment by execution or by suit commenced by the Water Rights Panel or by any Party hereto for the benefit of the Water Rights Panel.

C. Promptly upon receipt of such payment, the Water Rights Panel shall make payment for the water released and allocated, first, to the Party or Parties which offered such water at the lowest price, and then through successive higher offered prices up to the total allocated.

VII. ADDITIONAL PUMPING ALLOWED UNDER AGREEMENT WITH WRD DURING PERIODS OF EMERGENCY

A. WRD overlies the West Coast Basin and engages in activities of replenishing the groundwaters thereof with Replenishment Water. During an actual or threatened temporary shortage of the Imported Water supply to West Coast Basin, WRD may, by resolution, determine to subsequently replenish the Basin for any water produced in excess of a Party's Adjudicated Rights hereunder, within a reasonable period of time, pursuant to Over-Production Agreements with such Parties. Such Over-Production Agreements shall not exceed in the aggregate ten thousand (10,000) acre-fee (the "Initial Cumulative Over-Production Cap"). WRD may determine that a quantity of water is available for such agreements that exceed the Initial Cumulative Over-Production Cap (the "Supplemental Over-Production Water") based on a determination made after a public hearing and taking into account the water levels in the Basin and the availability of water to replenish the Basin other than Imported Water. Over-Production Agreements for Supplemental Over-Production Water shall be made available on an equal basis to all Parties with an Adjudicated Right who (i) possess no Carryover or Stored Water, (ii) have purchased Imported Water in the immediately preceding Administrative Year or will receive less water from a Water Purveyor due to the declared drought curtailing that Water Purveyor's available supplies, (iii) have exercised or contractually agreed to not exercise its rights under Section V.14 of this Amended Judgment, and (iv) provide important goods and services to the general public, provided, however, that WRD shall give priority to Parties meeting those criteria who have not entered into an Over-Production Agreement for an portion of the Initial Cumulative

Over-Production Cap. Over-Production Agreements for Supplemental Over-Production Water shall be on the same terms as required under Sections VII.D and E.

B. Notwithstanding any other provision of this Amended Judgment, any Party with Adjudicated Rights who is (i) Water Purveyors, (ii) possess no Carryover or Stored Water, and (iii) have exercised or contractually agreed to not exercise its rights under Section V.14 of this Amended Judgment, is authorized to enter into agreements with WRD under which such Water Purveyors may exceed their Adjudicated Rights for a particular Administrative Year (an "Over-Production Agreement") when the following conditions are met:

(1) WRD is in receipt of a resolution of the Board of Directors of MWD stating there is an actual or immediately threatened temporary shortage of MWD's Imported Water supply compared to MWD's needs, or a temporary inability to deliver MWD's Imported Water supply throughout its service area, which will be alleviated in part by over-pumping from West Coast Basin.

(2) The Board of Directors of both WRD and the Water Rights Panel, by resolutions, concur in the resolution of MWD's Board of Directors and each determine that the temporary overproduction in West Coast Basin will not adversely affect the integrity of the Basin or the sea water barrier maintained along the coast of the West Coast Basin. In said resolution, WRD's Board of Directors shall set a public hearing, and notice the time, place and date thereof (which may be continued from time to time without further notice) and which said notice shall be given by First Class Mail to all Parties. Said notice shall be mailed at least ten (10) days before said scheduled hearing date. At said public hearing, Parties shall be given full opportunity to be heard, and at the conclusion thereof the Board of Directors of WRD by resolution (a "Drought Resolution") decides to proceed with agreements under this Section VII.

C. If WRD has not entered into Over-Production Agreements with Water Purveyors for the entirety of the Initial Cumulative Over-Production Cap within thirty (30) days after the Drought Resolution, then WRD may enter into Over-Production Agreements with other Parties to this Judgment, although the amount of said Agreements shall not cause an exceedance of the Initial Cumulative Over-Production Cap. In considering such Agreements with other

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Parties, WRD shall accord priority to Parties who provide important goods and services to the general public.

D. All Over-Production Agreements with WRD shall be subject to the following requirements, and such reasonable others as WRD's Board of Directors shall require:

(1) The Over-Production Agreements shall be of uniform content except as to the quantity involved, and any special provisions considered necessary or desirable with respect to local hydrological conditions or good hydrologic practice.

(2) The Over-Production Agreements shall be offered to Water Purveyors and Parties, excepting those which WRD's Board of Directors determine should not over-pump because such over-pumping would occur in undesirable proximity to a sea water barrier project designed to forestall sea water intrusion, or within, or in undesirable proximity to, an area within West Coast Basin wherein groundwater levels are at an elevation where over-pumping is, under all the circumstances, undesirable.

(3) The maximum term of any such Over-Production Agreement shall be four (4) months. All such Over-Production Agreements shall commence and end on the same day (and which may be executed at any time within said four month period), unless an extension thereof is authorized by the Court under this Amended Judgment.

(4) The Over-Production Agreements shall contain provisions that the Water Purveyor or Party executing the agreement pay to WRD a price, in addition to the applicable Replenishment Assessment, determined on the following formula: The price per acre-foot of West Basin Municipal Water District's treated domestic and municipal water for the Administrative Year in which the agreement is to run, less the total of: (a) an amount per acre-foot as an allowance on account of incremental cost of pumping, as determined by WRD's Board of Directors; and (b) the rate of the replenishment assessment of WRD for the same Administrative Year. If the term of the Over-Production Agreement is for a period which will be partially in one Administrative Year and partially in another, and a change in either or both the price per acre-foot of West Basin Municipal Water District's treated domestic and municipal water and rate of the replenishment assessment of WRD is scheduled, the price formula shall be

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determined by averaging the scheduled changes with the price and rate then in effect, based on the number of months each will be in effect during the term of the Over-Production Agreement. Any price for a partial acre-foot shall be computed pro rata. Payments shall be due and payable on the principle that over-extractions under the Over-Production Agreement are the last water pumped in the Administrative Year, and shall be payable as the Over-Production Agreement shall provide.

(5) The Over-Production Agreements shall contain provisions that: (a) All of such agreements (but not less than all) shall be subject to termination by WRD if, in the judgment of WRD's Board of Directors, the conditions or threatened conditions upon which they were based have abated to the extent over-extractions are no longer considered necessary; and (b) that any individual agreement or agreements may be terminated if the WRD's Board of Directors finds that Material Physical Harm has developed as a result of over-extractions by any Water Purveyor or Party which have executed said Over-Production Agreements, or for any other reason that WRD's Board of Directors find good and sufficient.

E. Other matters applicable to such Over-Production Agreements and over-pumping thereunder are as follows, and to the extent they would affect obligations of the WRD they shall be anticipated in said Over-Production Agreements:

(1) The quantity of over-pumping permitted shall be additional to that which the Water Purveyor or Party could otherwise over-pump under this Amended Judgment.

(2) The total quantity of permitted over-pumping under all said agreements during said four months shall not exceed ten thousand (10,000) acre-feet, but the individual Water Purveyor or Party shall not be responsible or affected by any violation of this requirement. That total is additional to over-extractions otherwise permitted under this Amended Judgment.

(3) Only one four-month period may be utilized by WRD in entering into such Over-Production Agreements, as to any one emergency or continuation thereof declared by MWD's Board of Directors under Section VII.B(2) hereof.

(4) If any Party claims that it is being damaged or threatened with

damage by the over-extractions by any Party to such an Over-Production Agreement, the Water Rights Panel or any Party hereto may seek appropriate action of the Court for termination of any such Over-Production Agreement upon notice of hearing served on all Parties. Any such termination shall not affect the obligation of the Party having entered into an Over-Production Agreement pursuant to this Section to make payments under the Over-Production Agreement for over-extractions which previously occurred thereunder.

(5) WRD shall maintain separate accounting and a separate fund of the proceeds from payments made pursuant to agreements entered into under this Section. Said fund shall be utilized solely for purposes of replenishment and the replacement of waters in West Coast Basin. WRD shall, as soon as practicable, cause replenishment in West Coast Basin by the amounts to be over-extracted pursuant to this Section, whether through spreading, injection, or in-lieu agreements.

(6) Over-extractions made pursuant to the said Over-Production Agreements shall not be subject to the "make up" provisions provided in Section V.14, provided, that if any Party fails to make payments as required by the Over-Production Agreement, Water Rights Panel may require such "make up" under Section V.14.

(7) The Water Purveyor or Party under any such Over-Production Agreement may, and is encouraged to, enter into appropriate arrangements with customers who have Adjudicated Rights in West Coast Basin under or pursuant to this Amended Judgment, whereby the Water Purveyor or Party will be assisted in meeting the objectives of the agreement.

(8) Nothing in this Section VII limits the exercise of the reserved and continuing jurisdiction of the court as provided in Sections XII and XIII hereof.

VIII. INJUNCTION

Upon entry of this Amended Judgment, each of the Parties hereto, their successors and assigns, and each of their agents, employees, attorneys, and any and all persons acting by, through, or under them or any of them, are and each of them is hereby perpetually enjoined and restrained from pumping or otherwise extracting from the Basin any water in excess of said Party's Adjudicated Rights, except as otherwise provided in this Amended Judgment. Consistent

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with the Order Amending Judgment to Provide Exclusion Zone, dated December 21, 1995, no person shall construct, operate or maintain a well for the production of groundwater within 2,000 feet of any seawater barrier injection well operated in connection with the West Coast Basin Seawater Barrier Project.

IX. LIMITATIONS UPON EXTRACTION; ORDER OF PRODUCTION

1. Limits on Extractions

The total extraction right for an Administrative Year includes a Party's Total Adjudicated Production Right (to the extent not transferred by agreement or otherwise), and any right to extract Stored Water or Carryover as provided in this Amended Judgment. Any Party who has Carryover and/or Stored Water in the aggregate amount equal to or exceeding twenty percent (20%) of the Party's Total Adjudicated Production Right shall be allowed to extract, in any one Administrative Year, up to one-hundred and twenty percent (120%) of the Party's Total Adjudicated Production Right, except upon prior approval by the Storage Panel, as provided herein. Upon application, the Storage Panel shall approve a Party's request to extract water in excess of one hundred and twenty percent (120%) of such limitation consistent with Section V.13.B. Requests to extract water in excess of one hundred and twenty percent (120%) of a Party's Total Adjudicated Production Right shall be reviewed and either approved or denied by the Storage Panel in accordance with the procedure set forth in Section V.13 of this Amended Judgment.

2. Prioritization of Production

Except as provided in Section V.6.D, unless a Party elects otherwise, production of water from the Basin for the use or benefit of the Parties hereto shall be credited to each such Party in the following order: (i) Exchange Pool production; (ii) production of Carryover Water (but excluding the Carryover Water described in Section V.4.C, (iii) production of water pursuant to a lease or other agreement of an Adjudicated Right; (iv) production of water pursuant to that Party's Adjudicated Right; (v) production of Stored Water; (vi) the production of the Carryover Water described in Section V.4.C; and (vi) emergency production pursuant to an Over-Production Agreement with WRD pursuant to Section VII.

X. LOSS OF DECREED RIGHTS

A. It is in the best interests of the Parties herein and the reasonable beneficial use of the Basin and its water supply that no Party be encouraged to take and use more water than is actually required. Failure to produce all of the water to which a Party is entitled hereunder shall not, in and of itself, be deemed or constitute an abandonment of such Party's right in whole or in part.

B. No taking of water under Sections III, V, VI and VII hereof, by any Party to this action shall constitute a taking adverse to any other Party; nor shall any Party to this action have the right to plead the statute of limitations or an estoppel against any other Party by reason of its said extracting of water from the Basin pursuant to a request for the release of water; nor shall such release of water to the Exchange Pool by any Party constitute a forfeiture or abandonment by such Party of any part of its Adjudicated Right to water; nor shall such release in anywise constitute a waiver of such right although such water, when released under the terms of this Amended Judgment may be devoted to a public use; nor shall such release of water by any such Party in anywise obligate any Party so releasing to continue to release or furnish water to any other Party or its successor in interest, or to the public generally, or to any Party thereof, otherwise than as provided herein.

XI. WATERMASTER

1. Appointment

A. The constituent bodies specified below are, jointly, hereby appointed Watermaster to administer this Amended Judgment, for an indefinite term, but subject to removal by the Court. Collectively such bodies, which together shall constitute the "Watermaster," shall have restricted powers, duties and responsibilities as specified herein, it being the Court's intention that particular constituent bodies of the Watermaster have only limited and specified powers over certain aspects of the administration of this Amended Judgment.

B. The Outgoing Watermaster has agreed to exercise reasonable diligence in the complete transition of Watermaster duties and responsibilities within a reasonable time following entry of this order, and to make available to the new Watermaster all records

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concerning Watermaster activities.

C. Watermaster, and each of its constituent bodies, as designated below, exist as a special master pursuant to this Amended Judgment and serve at the pleasure of the Court. Nothing herein shall be construed as creating an independent designation of "Watermaster" as a public agency subject to the provisions of CEQA.

D. Chair of the Water Rights Panel (defined below) shall represent the Watermaster before the Court subject to the provisions of Sections XI.2(B)(1) of this Amended Judgment.

E. The Administrative Body and the Water Rights Panel, acting jointly as the Watermaster, shall adopt Watermaster Rules that are reasonably necessary to carry out this Amended Judgment and are consistent with this Amended Judgment. Said Rules shall also include provisions for the appropriate application of existing laws to actions by the Watermaster concerning conflicts of interests; limiting gifts and monies to individuals holding a position on or in any constituent body of Watermaster; hiring outside contractors and consultants; and use of fees and assessments paid to the Watermaster authorized under this Amended Judgment. Within ninety (90) days after entry of this Amended Judgment, the Watermaster shall issue draft Watermaster Rules. The Watermaster Rules and any subsequent amendments shall be subject to a 30 day review and comment period by the Adjudicated Rights holders. The Watermaster is required to respond to all comments received during the 30 day review and comment period within a reasonable amount of time. Thereafter, the Watermaster is required to hold a hearing on the final Watermaster Rules or any amendments before submittal to the Court for review. The Watermaster Rules, and any subsequent amendments thereto, shall be presented to the Court for review and approval upon a noticed motion in the manner set forth in Section XI.4.D herein.

2. **Watermaster Constituents**

A. Administrative Body

WRD is appointed the Administrative Body of the West Coast Basin Watermaster ("Administrative Body"). In order to assist the Court in the administration and enforcement of the provisions of this Amended Judgment and to keep the Court fully advised, the Administrative

Body shall have the following duties, powers and responsibilities in addition to those before or hereafter provided in this Judgment.

(1) *Require Reports, Information and Records*

In consultation with the Water Rights Panel, the Administrative Body shall require the Parties to furnish such reports, information and records as may be reasonably necessary to determine compliance or lack of compliance by any Party with the provisions of this Amended Judgment. The Administrative Body shall collect and assemble the records and other data required of the Parties hereto, and evaluate such records and other data as part of its duties herein. The Water Rights Panel shall make its records available to the Administrative Body for record-keeping. The Administrative Body shall maintain copies of all records prepared or received by each body of the Watermaster consistent with the Watermaster Rules. Subject to compliance with all applicable laws protecting the disclosure of a party's confidential or proprietary information, the Administrative Body shall allow any Party or its representative to inspect and copy the Watermaster's records and other data during normal business hours and in accordance with the rules and regulations promulgated by the Watermaster hereafter.

(2) *Notices by Watermaster*

The Administrative Body shall provide notice to all Parties of all material actions or determinations by the Watermaster or any constituent body thereof, which shall be defined or delineated in the Watermaster Rules, and as otherwise provided by this Amended Judgment. The Administrative Body shall set a regular meeting day per month where it can hold a meeting and is required to post the agenda and give notice per the Watermaster Rules. The Watermaster Rules shall identify the days of the month on which the Storage Panel shall hold noticed meetings when a meeting is necessary. If notice is required to be given per email, then the timing for the notice is 5 business days. If the notice is required to be given per U.S. mail, then the timing for the notice is 10 business days. No action or determination of the Watermaster or the constituent bodies thereof shall be valid unless the notice requirements are satisfied.

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(3) *Annual Groundwater Monitoring*

The Administrative Body shall undertake at least one annual groundwater modeling event to evaluate the current condition of the Basin and determine that cumulatively, all Existing Facilities and New Storage Facilities do not pose actual or an imminent threat of Material Physical Harm. Said groundwater modeling shall incorporate the results of modeling conducted by the Administrative Body in accordance with Section V.12 of this Amended Judgment for the Storage Panel's review. The Administrative Body shall provide the Parties notice of and access to the results of the annual groundwater modeling, which notice may be by delivery of the Watermaster's annual report.

(4) *Annual Report*

On or before October 15 of every year, the Administrative Body shall prepare and deliver an annual report for the consideration of the Water Rights Panel. On or before December 15 of every year, the Watermaster shall report to the Court on the Basin and, for that purpose, may adopt the report of the Administrative Body, or separately may make its own report. Each annual report to the Court shall include, but not be limited to, the following:

- All water extractions in the Basin, including that by producers who have no Adjudicated Right;
- Storage accounts maintained by each Party, including Carryover Conversion;
- Proposed and ongoing Water Augmentation Projects;
- Proposed and ongoing Storage Projects;
- Proposed and constructed New Storage Facilities;
- The results of groundwater modeling conducted by the Administrative Body consistent with Section V.12 of this Amended Judgment during the preceding year, which modeling shall including modeling necessary to assess the cumulative effect on water levels in the Basin;
- Exchange Pool operation;
- Use of Developed Water, including Imported Water;
- Violations of the Amended Judgment and corrective action taken by the bodies of the Watermaster having jurisdiction as provided in this Amended Judgment;

- Change of ownership of Adjudicated Rights;
- Watermaster administration costs;
- Water spread or injected into the Basin, including water injected for seawater intrusion barriers;
- Development of Material Physical Harm, or imminent threat of the development of Material Physical Harm; and
- Recommendations, if any.

(5) *Carryover Conversion Payment*

All payments of the Replenishment Assessment received by WRD from a Party converting Carryover to Stored Water shall be maintained and accounted for by WRD separate from any other funds held by WRD, either in its capacity as the Administrative Body or in its statutory capacity under the WRD Act. WRD shall use said Replenishment Assessments solely for the purpose of securing Replenishment Water for causing replenishment of the West Basin. WRD shall provide an accounting of the monies received, how spent, and, if not spent within an Administrative Year, the total amount maintained by WRD and the reason for not utilizing the funds for that Administrative Year.

(6) *Annual Budget and Appeal Procedure in Relation Thereto*

(a) At all times, the Administrative Body shall maintain a separation in accounting between the expense for performing the administrative functions specified in this Amended Judgment (the "Administrative Budget") and WRD's Replenishment Assessment and operating budget. By April 1 of each Administrative Year, the Administrative Body shall prepare a tentative Administrative Budget for the subsequent year. The Administrative Body shall mail a copy of said tentative Administrative Budget to each of the Parties at least sixty (60) days before the beginning of each Administrative Year. For the first Administrative Year of operation under this Amended Judgment, if the Administrative Body is unable to meet the above time requirement, the Administrative Body shall mail said copies as soon as possible. The Administrative Budget mailed to the Parties shall provide sufficient detail in the Administrative Budget to demonstrate a separation in accounting between the Administrative Budget and WRD's

Replenishment Assessment and operating budget.

(b) The first year that the Administrative Budget is prepared by the Administrative Body pursuant to this Amended Judgment, the amount of that budget shall not exceed an amount equal to fifty percent (50%) of the 2013-2014 charge for Watermaster service for the West Coast Basin collected from Parties by the Outgoing Watermaster (the "Base Budget Amount"). All increases in future budgets for the Administrative Body above the amount set forth above shall be subject to approval by the Water Rights Panel following a public meeting to be held prior to the beginning of the Administrative Year, provided that the approved budget shall not be less than the amount of the first-year budget for the Administrative Body, except upon further order of the Court. Any administrative function by WRD already paid for by the Replenishment Assessment shall not be added as an expense in the Administrative Budget. Any expense or cost attributable to performing the duties of the Administrative Body imposed by this Amended Judgment shall not be added to WRD's operating budget, or otherwise added to the calculation of the Replenishment Assessment. WRD, operating under the WRD Act, acknowledges that it has been preparing and maintaining financial statements and budgets in accordance with generally accepted accounting principles for state and local governments (GAAP) and conducting audits in accordance with generally accepted government auditing standards (GAGAS). In order to fulfill those budget and accounting provisions of the Amended Judgment relating to WRD acting in its statutory capacity, WRD agrees, acting under the WRD Act, to (i) continue its practice of preparing and maintaining financial statements and budgets in accordance with GAAP and conducting audits in accordance with GAGAS and (ii) certify, each year after an audit is completed within three (3) months after end of the Administrative Year, that no expense in WRD's operating budget or its Replenishment Assessment was charged or assessed contrary to the express provisions of Sections XI.2A5, 6 and 7 of the Amended Judgment. While WRD may approve the proposed Administrative Budget at the same meeting in which WRD adopts its annual Replenishment Assessment or annual budget, the Administrative Body's budget shall be separate and distinct from the Replenishment Assessment imposed pursuant to Water Code § 60317 and WRD's operating budget. If approval by the Water Rights Panel is required

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pursuant to the foregoing, the Water Rights Panel shall act upon the proposed budget within 15 calendar days after the public meeting. If the Water Rights Panel does not approve the budget prior to such deadline, the matter may be appealed to the Court within sixty (60) days.

(c) If any Party has any objection to the Administrative Budget, it shall present the same in writing to the Watermaster within fifteen (15) days after the date of mailing of said tentative budget by the Administrative Body. The Parties shall make the payments otherwise required of them to the Administrative Body even though an appeal of such budget may be pending. Upon any revision by the Court, the Administrative Body shall either remit to the Parties their pro rata portions of any reduction in the budget, or shall credit their accounts with respect to their budget assessments for the next ensuing Administrative Year, as the Court shall direct.

(d) The Administrative Body shall prepare and maintain financial statements and budgets in accordance with generally accepted accounting principles (GAAP) for state and local governments in order to meet this requirement. Audits will be conducted in accordance with generally accepted government auditing standards (GAGAS). The Administrative Body shall, each year after an audit is completed, certify within three (3) months after end of the Administrative Year that no expense was part of the budget or paid for by the budget contrary to the Amended Judgment.

(7) *Administrative Budget as Parties' Costs*

(a) The amount of the Administrative Budget to be assessed to each Party shall be determined as follows: If that portion of the final Administrative Budget to be assessed to the Parties holding an Adjudicated Right is equal to or less than twenty dollars ($20.00) per said Party then the cost shall be equally apportioned among said Parties. If that portion of the final Administrative Budget to be assessed to said Parties is greater than twenty dollars ($20.00) per said Party then each Party holding an Adjudicated Right shall be assessed a minimum of twenty dollars ($20.00), the amount of revenue expected to be received through the foregoing minimum assessments shall be deducted from that portion of the final Administrative Budget to be assessed to the Parties holding an Adjudicated Rights and the balance shall be

assessed to the Parties having Adjudicated Rights, such balance being divided among them proportionately in accordance with their respective Adjudicated Rights. As a condition of approving a Regional Storage Project or a Water Augmentation Project, the Storage Panel shall require any Party participating in such a Project who does not hold an Adjudicated Right to pay a portion of the Administrative Body's budget consistent with the amount of water that can be stored by the Regional Storage Project relative to the total amount of Adjudicated Rights.

(b) Payment of the assessment provided for herein, subject to adjustment by the Court as provided, shall be made by each such Party prior to beginning of the Administrative Year to which the assessment relates, or within forty (40) days after the mailing of the tentative Administrative Budget, whichever is later. If such payment by any Party is not made on or before said date, the Administrative Body shall add a penalty of five percent (5%) thereof to such Party's statement. Payment required of any Party hereunder may be enforced by execution issued out of the Court, or as may be provided by order hereinafter made by the Court, or by other proceedings by the Watermaster or by any Party hereto on the Watermaster's behalf.

(c) All such payments and penalties received by the Administrative Body shall be expended by it for the administration of this Amended Judgment. Any money remaining at the end of any Administrative Year shall be available for such use in the following Administrative Year. The Administrative Body shall maintain no reserves.

(8) *Concerns About Material Physical Harm*

Any Party shall raise concerns regarding actual or an imminent threat of Material Physical Harm to the Administrative Body or the Storage Panel prior to filing a motion with the Court unless the Party reasonably believes that irreparable harm to the Basin or itself is imminent if the Court does not order provisional relief. If reasonable concerns are raised to the Administrative Body, it shall promptly consider any such concerns including undertaking any investigation, modeling or other technical analysis necessary to address the concern. The Administrative Body shall provide written notice of its determination, and copy of its report, to all Parties by either electronic mail or U.S. postal mail. If a Party disagrees with the Administrative Body's conclusion, the Party may request a hearing before the Storage Panel. Any hearing before the

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Storage Panel shall proceed as outlined in Section V.13.B. Any decision of the Storage Panel shall be reviewable by the Court in accordance with Section XI.4.

(9) *Other Administrative Body Duties*

The Administrative Body shall perform such other duties as directed by the Court and the Watermaster Rules.

B. The Water Rights Panel

The Water Rights Panel shall consist of five (5) members from among representatives of the Parties holding Adjudicated Rights under this Amended Judgment. Three (3) of the members shall be the elected officers of president, vice-president and treasurer of the West Basin Water Association and the remaining two (2) members shall be selected by the Board of Directors of the West Basin Water Association. At least one (1) member of the Water Rights Panel shall be a non-Water Purveyor Adjudicated Rights holder possessing at least 1% of the Adjudicated Rights in the Basin. Members of the Water Rights Panel shall serve without compensation. The Water Rights Panel shall take action by majority of its members. The Water Rights Panel shall have the following duties and responsibilities:

(1) *Judicial Action Concerning Adjudicated Rights and Stored Water*

As among the other bodies of the Watermaster, the Water Rights Panel shall (i) have exclusive authority to move the Court to take such action as may be necessary to enforce the terms of the Amended Judgment, including but not limited to matters involving the extraction and maintenance of Adjudicated Rights, provided, however, that in matters involving Stored Water, the Water Rights Panel and the WRD Board of Directors must concur in the decision to take judicial action, in which case the Chair of the Water Rights Panel shall represent the Storage Panel in such action. If the WRD Board of Directors does not concur in taking judicial action, any Party may file a motion with the Court concerning the matter in their status as Parties to the Judgment if permitted by Section XIII of this Amended Judgment. No Party to the Amended Judgment waives any rights to seek relief or review of the decisions of the Watermaster or any body thereof. The Water Rights Panel's retention of legal counsel shall comply with the Watermaster Rules.

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(2) *Requirement of Measuring Devices*

The Water Rights Panel shall require all parties owning or operating any facilities for the extraction of groundwater from West Basin to install and maintain at all times in good working order at such party's own expense, appropriate measuring devices at such times and as often as may be reasonable under the circumstances and to calibrate or test such devices.

(3) *Inspections by Watermaster*

Subject to compliance with all applicable laws protecting the disclosure of a party's confidential or proprietary information, the Water Rights Panel may make inspections of groundwater production facilities, including aquifer storage and recovery facilities, and measuring devices at such times and as often as may be reasonable under the circumstances and to calibrate or test such devices.

(4) *Reports*

The Water Rights Panel shall be responsible for reporting to the Court concerning Adjudicated Rights in the Basin, including any and all of the following:

- Groundwater extractions;
- Exchange Pool operation;
- Violations of this Amended Judgment and corrective action taken or sought;
- Change of ownership of an Adjudicated Right;
- Assessments made by the Water Rights Panel and any costs incurred;
- Development of Material Physical Harm, or imminent threat of the development of Material Physical Harm; and
- Recommendations, if any.

(5) *Assessment*

The Water Rights Panel shall assess holders of Adjudicated Rights within the West Coast Basin an annual amount not to exceed one dollar ($1.00) per acre-foot of Adjudicated Rights, by majority vote of the members of the Water Rights Panel. The Water Rights Panel may assess a higher amount, subject to being overruled by Majority Protest. If an assessment is assessed in excess of one dollar ($1.00) per acre-foot, the assessment shall only be applied for that

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Administrative Year. The assessment is intended to cover any costs associated with any Amended Judgment enforcement action, the reporting to the Court pursuant to Section XI.2.B(1), and the review of Storage Projects as a component of the Storage Panel, as provided herein. It is anticipated that this body will rely on the Administrative Body's staff for most functions, but the Water Rights Panel may engage its own staff if required in its reasonable judgment and in accordance with the Watermaster Rules. The Water Rights Panel shall prepare and maintain financial statements and budgets in accordance with generally accepted accounting principles (GAAP) for state and local governments in order to meet this requirement. Every other year, the Water Rights Panel shall cause a Review of its Financial Statements by a certified public accountant. The Water Rights Panel shall, each year after a review is completed, certify within three (3) months after end of the Administrative Year that no expense was part of the budget or paid for by the budget contrary to the Amended Judgment. As a condition of approving a Regional Storage Project or a Water Augmentation Project, the Storage Panel will require any Party participating in such a Project who does not hold an Adjudicated Right to pay a reasonable portion of the Water Rights Panel's budget consistent with the amount of water that can be stored by the Regional Storage Project relative to the total amount of Adjudicated Rights.

(6) *Notices*

The Water Rights Panel shall, to the extent practical, hold regular meetings on a quarterly basis or more often as needed. Notices of meetings of the Water Rights Panel shall be provided as required under Section XI.2.A(2).

C. <u>The Storage Panel</u>

The Storage Panel of the Watermaster shall be a bicameral body consisting of (i) the West Coast Basin Water Rights Panel and (ii) the Board of Directors of WRD. Action by the Storage Panel shall require separate action by each of its constituent bodies provided, however, that action can be taken by each constituent body at a joint hearing. The Storage Panel shall have the duties and responsibilities specified with regard to the provisions for the storage and extraction of Stored Water as set forth in Section V and elsewhere within this Amended Judgment.

D. Capacity As Court-Appointed Watermaster

In performing any duty not required by any other law or regulation, specifically set forth within this Amended Judgment and in conformance with all requirements for said duty therein for the Administrative Body, the Water Rights Panel or the Storage Panel then those bodies shall be deemed to act solely as the Court's appointed Watermaster and not in any other capacity.

3. Limitations on Powers and Duties of the Watermaster and its Constituent Bodies

A. Use of Facilities and Data Collected by Other Governmental Agencies

Where practicable, the three bodies constituting the Watermaster should not duplicate the collection of data relative to conditions of the West Coast Basin which is then being collected by one or more governmental agencies, but where necessary each constituent body of the Watermaster may collect supplemental data. Where it appears more economical to do so, the Watermaster and its constituent bodies are directed to use such facilities of other governmental agencies as are available to it at either no cost or cost agreements with respect to the data collection, receipt of reports, billings to Parties, mailings to Parties, and similar matters.

B. Limitations on WRD's Leasing Authority

WRD shall not engage in a lease of Adjudicated Rights, Stored Water or any other water within the Basin to or from any Party or third party, provided, however, that the foregoing prohibition shall (i) not apply during any emergency declared pursuant to Section VII of this Judgment, (ii) not be interpreted to restrict WRD's ability or authority to lease in water from any source or entity for purposes of replenishment of the Basin or for water quality activities, and (iii) not apply to any reclaimed, recycled or remediated water that may be developed by WRD pursuant to its replenishment authority under WRD's enabling act (California Water Code Section 60000 *et seq.*).

C. Wasted and Nonchargeable Production Authorized By Watermaster

(1) In the event there is a rapid increase in the salinity of water produced from a well within the Basin and the Party producing the water has reason to believe that such increased salinity is the result of or potentially relates to sea water intrusion into the

Basin, a Party may petition the Administrative Body, acting on behalf of the Watermaster, for its consent to make various changes in the operation of said well and waste the production therefrom during such changed conditions, in an effort to identify the reason for the rapid increase in salinity of the water produced from such well and to attempt to discover a method of operation for said well which will decrease the salinity of the water produced therefrom to such an extent that the well may be used in the future as part of the potable water supply of said Party.

(2) Upon receipt of such petition, the Administrative Body shall consult with the Los Angeles County Flood Control District and may consult with others, as needed, to determine whether such increased salinity in the water produced from said well potentially relates to sea water intrusion into the Basin. After such consultation, should the Administrative Body determine that the higher saline water produced from said well potentially relates to sea water intrusion, the Administrative Body may issue a written approval that authorizes the production and waste of water from said well in a manner which seeks to analyze and find a method of well operation for correction of the increased salinity of the water produced therefrom (a "Salinity Pumping Approval"). Such authorized water production and the waste thereof shall not be charged to the production right of such producing Party and shall be exempt from WRD's Replenishment Assessment.

(3) Regardless of the number of applications therefor, the Administrative Body may authorize a maximum aggregate of 100 acre feet per fiscal year of pumping and water wasting activities authorized under Salinity Pumping Approvals.

(4) If, during such authorized water production and waste thereof, such produced water becomes potable or is used by such producer, the Administrative Body shall immediately issue an order terminating the Salinity Pumping Approval.

(5) The results of all such Salinity Pumping Approvals shall be made available to any party herein upon request therefor to the Watermaster.

D. Material Physical Harm

The Storage Panel shall consider any reasonable concern that a Storage Project, Water Augmentation Project or New Storage Facility either individually or cumulatively is causing or is

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reasonably likely to cause an imminent threat of Material Physical Harm made pursuant to a report or request for hearing received pursuant to Section XI.2.A(8) of this Amended Judgment. The Storage Panel shall act on that matter in accordance with Section V,13(B) of this Amended Judgment. Any Party objecting to the Storage Panel's decision may file a motion with the Court pursuant to Section XI.4.D of this Amended Judgment.

4. Appeal from Watermaster Decisions Other Than With Respect to Budget

A. The provisions of this Section shall not apply to budgetary matters, as to which the appellate procedure is provided in Section XI.2.A(6).

B. Any Party who objects to any rule, determination, order or finding made by the Watermaster, or any constituent body of the Watermaster, may, but is not required to, object in writing delivered to the Administrative Body within thirty (30) days after the date the constituent body of Watermaster mails written notice of the making of such rule, determination, order or finding.

C. Within thirty (30) days after such delivery, the Watermaster, or the affected constituent body thereof, shall consider said objection and shall amend or affirm the ruling, determination, order or finding and shall give notice thereof to all Parties.

D. Within sixty (60) days from the date of said notice of a final ruling, determination, order or finding of a constituent body of the Watermaster, any objecting Party may file with the Court its objection to such final rule, determination, order or finding, and may bring the same on for hearing before the Court at such time as the Court may direct, after first having served said objection upon all other Parties. The Court may affirm, modify, amend or overrule any such rule, determination, order or finding. Any factual determinations made by the Watermaster or any constituent body thereof, shall be reviewed by the Court based on substantial evidence in light of the whole record, and any questions of law shall be reviewed de novo.

E. Any objection under this paragraph shall not stay the rule, determination, order or finding of a constituent body of the Watermaster. However, the Court, by ex parte order, may provide for a stay thereof on application of any interested Party on or after the date that any such Party delivers to the pertinent constituent body of the Watermaster any written objection.

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XII. RESERVED AND CONTINUING JURISDICTION OF COURT

The Court hereby reserves continuing jurisdiction and, upon application of any Party hereto having an Adjudicated Right or upon its own motion, may review: (1) its determination of the safe yield of the Basin, or (2) the Adjudicated Rights, in the aggregate, of all of the Parties as affected by the abandonment or forfeiture of any such rights, in whole or in part, and by the abandonment or forfeiture of any such rights by any other person or entity, and, in the event material change be found, to adjudge that the Adjudicated Right of each Party shall be ratably changed; provided, however, that notice of such review shall be served on all Parties hereto having Adjudicated Rights or any other right under this Amended Judgment to extract groundwater at least thirty (30) days prior thereto. Except as provided herein, and except as rights decreed herein may be abandoned or forfeited in whole or in part, each and every right decreed herein shall be fixed as of the date of the entry hereof.

XIII. JUDGMENT MODIFICATIONS AND FURTHER ORDERS OF COURT

A. The Court further reserves jurisdiction so that at any time, upon its own motion or upon application of any Party hereto having an Adjudicated Right, and upon at least thirty (30) days' notice to all such Parties, to make such modifications of or such additions to, the provisions of this Amended Judgment, or make such further order or orders as may be necessary or desirable for the adequate enforcement, protection or preservation of the Basin and of the rights of the Parties as herein determined.

B. This Amended Judgment does not determine nor affect the determination of whether WRD's adoption of a Replenishment Assessment complied with applicable laws in the event that any Replenishment Assessment is challenged in a legal action.

XIV. RESERVATION OF RIGHTS

All Parties retain all rights not specifically determined herein, including any right, by common law or otherwise, to seek compensation for damages arising out of any act or omission of any person. WRD retains any rights, powers or privileges that it may now have or may hereafter have by reason of provision of law, including but not limited to the WRD Act, provided that WRD shall perform any express duty or obligation specifically imposed on it, either in its

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capacity as the Administrative Body or its statutory capacity, by this Amended Judgment. Further, this Amended Judgment shall not excuse any Party from complying with any applicable law, regulation or order.

XV. DESIGNEES OF PARTIES FOR FUTURE NOTICE AND SERVICE

A. Service of this Amended Judgment on those Parties who have executed and filed with the Court "Agreement and Stipulation for Judgment" or otherwise have named a designee, filed the same herein and have therein designated a person thereafter to receive notices, requests, demands, objections, reports, and all other papers and processes in this cause, shall be made by first class mail, postage prepaid, addressed to such designees (or their successors) and at the address designated for that purpose.

B. Each Party who has not heretofore made such a designation shall, within thirty (30) days after the Amended Judgment herein shall have been served upon that Party or its designee, file with the Court, with proof of service of a copy thereof upon the Watermaster, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon that Party or delivered to that Party, are to be so served or delivered.

C. A later substitute or successor designation filed and served in the same manner by any Party shall be effective from the date of such filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that Party.

D. Delivery to or service upon any Party by the Watermaster, by any other Party, or by the Court, of any item required to be served upon or delivered to a Party under or pursuant to this Amended Judgment, may be by deposit in the mail, first class, postage prepaid, addressed to the latest designee and at the address in said latest designation filed by that Party.

E. Parties hereto who have not entered their appearance or whose default has been entered and who are adjudged herein to have an Adjudicated Right, and who have not named a designee for service herein, shall be served with all said future notices, papers and process herein, and service herein shall be accomplished, by publication of a copy of such said

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notice, paper or process addressed to, "Parties to the West Coast Basin Adjudication"; said publication shall be made once each week for two successive weeks in a newspaper of general circulation, printed and published in the County of Los Angeles, State of California, and circulated within the West Coast Basin Area; the last publication of which shall be at least two weeks and not more than five weeks immediately preceding the event for which said notice is given or immediately preceding the effective date of any order, paper or process; in the event an effective date other than the date of its execution is fixed by the Court in respect of any order, paper or process, said last publication shall be made not more than five weeks following an event, the entry of an order by the Court, or date of any paper or process with respect to which such notice is given.

XVI. INTERVENTION OF SUCCESSORS IN INTEREST AND NEW PARTIES

Any person who is not a Party herein or successor to such Party and who proposes to produce or store and produce water from the Basin may seek to intervene in this Amended Judgment in accordance with applicable law, including, but not limited to, the California Code of Civil Procedure, or through a Stipulation for Intervention entered into with the Water Rights Panel. The Water Rights Panel may execute said Stipulation on behalf of the other Parties herein, but such Stipulation shall not preclude a Party from opposing such intervention at the time of the court hearing thereon. Said Stipulation for Intervention must thereupon be filed with the Court, which will consider an order confirming said intervention following thirty (30) days' notice thereof to the Parties, served as herein provided. Thereafter, if approved by the Court, such Intervenors shall be a Party herein, bound by this Amended Judgment and entitled to the rights and privileges accorded under the physical solution imposed herein.

XVII. JUDGMENT BINDING ON SUCCESSORS

Subject to the specific provisions hereinbefore contained, this Amended Judgment and all provisions thereof are applicable to, binding upon and inure to the benefit of not only the Parties, but as well to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys-in-fact of any such persons.

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THE CLERK WILL ENTER THIS AMENDED JUDGMENT FORTHWITH.

DATED: DEC 0 5 2014

KENNETH R. FREEMAN

Judge of the Superior Court

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APPENDIX F

SUPPLY CAPABILITY AND PROJECTED DEMANDS FOR SINGLE-DRY YEAR, MULTIPLE-DRY YEAR, AND AVERAGE CONDITIONS FROM 2015 METROPOLITAN URBAN WATER MANAGEMENT PLAN

Table 2-4
Single Dry-Year
Supply Capability[1] and Projected Demands
Repeat of 1977 Hydrology
(Acre-feet per year)

Forecast Year	2020	2025	2030	2035	2040
Current Programs					
In-Region Supplies and Programs	693,000	774,000	852,000	956,000	992,000
California Aqueduct[2]	691,000	712,000	723,000	749,000	749,000
Colorado River Aqueduct					
Total Supply Available[3]	1,451,000	1,457,000	1,456,000	1,455,000	1,454,000
Aqueduct Capacity Limit[4]	*1,200,000*	*1,200,000*	*1,200,000*	*1,200,000*	*1,200,000*
Colorado River Aqueduct Capability	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Capability of Current Programs	**2,584,000**	**2,686,000**	**2,775,000**	**2,905,000**	**2,941,000**
Demands					
Total Demands on Metropolitan	1,731,000	1,784,000	1,826,000	1,878,000	1,919,000
IID-SDCWA Transfers and Canal Linings	274,000	282,000	282,000	282,000	282,000
Total Metropolitan Deliveries[5]	**2,005,000**	**2,066,000**	**2,108,000**	**2,160,000**	**2,201,000**
Surplus	**579,000**	**620,000**	**667,000**	**745,000**	**740,000**
Programs Under Development					
In-Region Supplies and Programs	43,000	80,000	118,000	160,000	200,000
California Aqueduct	20,000	20,000	198,000	198,000	198,000
Colorado River Aqueduct					
Total Supply Available[3]	155,000	125,000	75,000	25,000	25,000
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**63,000**	**100,000**	**316,000**	**358,000**	**398,000**
Potential Surplus	**642,000**	**720,000**	**983,000**	**1,103,000**	**1,138,000**

[1] Represents Supply Capability for resource programs under listed year type.
[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
[3] Colorado River Aqueduct includes programs, IID-SDCWA transfer and exchange and canal linings conveyed by the aqueduct.
[4] Maximum CRA deliveries limited to 1.20 MAF including IID-SDCWA transfer and exchange and canal linings.
[5] Total demands are adjusted to include IID-SDCWA transfer and exchange and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

Table 2-5
Multiple Dry-Year
Supply Capability[1] and Projected Demands
Repeat of 1990-1992 Hydrology
(Acre-feet per year)

Forecast Year	2020	2025	2030	2035	2040
Current Programs					
In-Region Supplies and Programs	239,000	272,000	303,000	346,000	364,000
California Aqueduct[2]	664,000	682,000	687,000	696,000	696,000
Colorado River Aqueduct					
Total Supply Available[3]	1,403,000	1,691,000	1,690,000	1,689,000	1,605,000
Aqueduct Capacity Limit[4]	*1,200,000*	*1,200,000*	*1,200,000*	*1,200,000*	*1,200,000*
Colorado River Aqueduct Capability	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Capability of Current Programs	**2,103,000**	**2,154,000**	**2,190,000**	**2,242,000**	**2,260,000**
Demands					
Total Demands on Metropolitan	1,727,000	1,836,000	1,889,000	1,934,000	1,976,000
IID-SDCWA Transfers and Canal Linings	274,000	282,000	282,000	282,000	282,000
Total Metropolitan Deliveries[5]	**2,001,000**	**2,118,000**	**2,171,000**	**2,216,000**	**2,258,000**
Surplus	**102,000**	**36,000**	**19,000**	**26,000**	**2,000**
Programs Under Development					
In-Region Supplies and Programs	36,000	73,000	110,000	151,000	192,000
California Aqueduct	7,000	7,000	94,000	94,000	94,000
Colorado River Aqueduct					
Total Supply Available[3]	80,000	75,000	50,000	25,000	25,000
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**43,000**	**80,000**	**204,000**	**245,000**	**286,000**
Potential Surplus	**145,000**	**116,000**	**223,000**	**271,000**	**288,000**

[1] Represents Supply Capability for resource programs under listed year type.

[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.

[3] Colorado River Aqueduct includes programs, IID-SDCWA transfer and exchange and canal linings conveyed by the aqueduct.

[4] Maximum CRA deliveries limited to 1.20 MAF including IID-SDCWA transfer and exchange and canal linings.

[5] Total demands are adjusted to include IID-SDCWA transfer and exchange and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

Table 2-6
Average Year
Supply Capability[1] and Projected Demands
Average of 1922-2012 Hydrologies
(Acre-feet per year)

Forecast Year	2020	2025	2030	2035	2040
Current Programs					
In-Region Supplies and Programs	693,000	774,000	852,000	956,000	992,000
California Aqueduct[2]	1,555,000	1,576,000	1,606,000	1,632,000	1,632,000
Colorado River Aqueduct					
Total Supply Available[3]	1,468,000	1,488,000	1,484,000	1,471,000	1,460,000
Aqueduct Capacity Limit[4]	*1,200,000*	*1,200,000*	*1,200,000*	*1,200,000*	*1,200,000*
Colorado River Aqueduct Capability	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Capability of Current Programs	**3,448,000**	**3,550,000**	**3,658,000**	**3,788,000**	**3,824,000**
Demands					
Total Demands on Metropolitan	1,586,000	1,636,000	1,677,000	1,726,000	1,765,000
IID-SDCWA Transfers and Canal Linings	274,000	282,000	282,000	282,000	282,000
Total Metropolitan Deliveries[5]	**1,860,000**	**1,918,000**	**1,959,000**	**2,008,000**	**2,047,000**
Surplus	**1,588,000**	**1,632,000**	**1,699,000**	**1,780,000**	**1,777,000**
Programs Under Development					
In-Region Supplies and Programs	43,000	80,000	118,000	160,000	200,000
California Aqueduct	20,000	20,000	268,000	268,000	268,000
Colorado River Aqueduct					
Total Supply Available[3]	5,000	25,000	25,000	25,000	25,000
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**63,000**	**100,000**	**386,000**	**428,000**	**468,000**
Potential Surplus	**1,651,000**	**1,732,000**	**2,085,000**	**2,208,000**	**2,245,000**

[1] Represents Supply Capability for resource programs under listed year type.

[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.

[3] Colorado River Aqueduct includes programs, IID-SDCWA transfer and exchange and canal linings conveyed by the aqueduct.

[4] Maximum CRA deliveries limited to 1.20 MAF including IID-SDCWA transfer and exchange and canal linings.

[5] Total demands are adjusted to include IID-SDCWA transfer and exchange and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

APPENDIX G

ORDINANCE NO. 15-02, "AN ORDINANCE OF THE CITY OF INGLEWOOD, CALIFORNIA AMENDING SECTION 5-110 OF ARTICLE 7 OF CHAPTER 5 AND ADDING AN ARTICLE 19 TO CHAPTER 10 (PUBLIC WORKS) TO ESTABLISH A WATER CONSERVATION AND WATER SUPPLY SHORTAGE PROGRAM," ADOPTED ON OCTOBER 21, 2014

ORDINANCE NO. 15-02

AN EMERGENCY ORDINANCE OF THE CITY OF INGLEWOOD, CALIFORNIA, AMENDING SECTION 5-110 OF ARTICLE 7 OF CHAPTER 5 AND ADDING AN ARTICLE 19 TO CHAPTER 10 (PUBLIC WORKS) TO ESTABLISH A WATER CONSERVATION AND WATER SUPPLY SHORTAGE PROGRAM

WHEREAS, the City receives its water supply from two sources: 80% from Metropolitan Water District, through the West Basin Municipal Water District (surface water from Colorado River and Northern California), and 20% from local groundwater produced from City wells; and

WHEREAS, both surface water and ground water supply is continuously depleting due to dry weather conditions requiring reduction in consumption; and

WHEREAS, City well production capacity has substantially depleted due to age of the four (4) existing wells (2 wells drilled in 1974 and one in 1990); and

WHEREAS, the City will be primarily dependent on surface water supply because it will be 2-3 years before the City drills two new wells and improves its local water supply; and

WHEREAS, on January 17, 2014, the Governor issued a proclamation of a state of emergency under the California Emergency Services Act based on drought conditions; and

WHEREAS, on April 25, 2014, the Governor issued a proclamation of a continued state of emergency under the California Emergency Services Act based on continued drought conditions; and

WHEREAS, the drought conditions that formed the basis of the Governor's emergency proclamations continue to exist; and,

WHEREAS, the present year is critically dry and has been immediately preceded by two or more consecutive below normal, dry, or critically dry years; and,

WHEREAS, the drought conditions will likely continue for the foreseeable

future and additional action by both the State Water Resources Control Board and local water suppliers will likely be necessary to further promote conservation; and,

WHEREAS, wasteful use of water is detrimental to the long-term water supplies of the City of Inglewood; and,

WHEREAS, the long-term health, safety, and prosperity of the community depends upon having a reliable long-term supply of potable water; and,

WHEREAS, the State Water Resources Control Board adopted Article X. Prohibition of Activities and Mandatory Actions During Drought Emergency at its July 15, 2014, meeting, which became effective August 1, 2014, whose Section X.1 prohibits certain activities in promotion of water conservation; and

WHEREAS, urban water suppliers that violate the mandatory actions approved by the State Water Resources Control Board could be subject to cease and desist orders for violating emergency regulations with fines up to $10,000 per day; and,

WHEREAS, the California Water Code Section 10632 requires that stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF INGLEWOOD, CALIFORNIA, DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1

The City Council of the City of Inglewood finds that aforementioned recitals are true and incorporated herein. Furthermore, the Inglewood City Council finds that amending Section 5-110, of Article 7 of Chapter 5 and that creating Article 19 (Water Conservation and Water Supply Program) of Chapter 10 (Public Works) is hereby needed and therefore added to the Inglewood Municipal Code to read as follows:

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Article 7. WATER CONSERVATION

Section 5-110, Use Restrictions, is deleted in its entirety and replaced with the following:

"Section 5-110, Use Restrictions.

It shall be unlawful for any person to violate the following restrictions concerning the use of water:

(a) With respect to irrigation practices:

(1) Except as provided below, lawn watering and landscape irrigation with potable water is permitted only as specified in Sections 10-208, 10-209 and 10-210.

(2) Irrigation with reclaimed water is permitted on any day in accordance with the water-efficient landscape criteria of Section 5-111 through 5-118."

Article 19. WATER CONSERVATION AND WATER SUPPLY SHORTAGE PROGRAM

Section 10-204. Title

This Article shall be entitled the "City of Inglewood Water Conservation and

Water Supply Shortage Program" and shall be known as such throughout this Code.

Section 10-205. Purpose and Intent:

(1) The purpose of this Article is to establish a water conservation and water supply shortage program that will reduce water consumption within the City of Inglewood through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City of Inglewood to avoid and minimize the effect and hardship of water shortage to the greatest extent possible.

(2) This Article establishes permanent water conservation standards intended to alter behavior related to water use efficiency at all times and further establishes three levels of water supply shortage response actions to be implemented during times of declared water shortage or declared water shortage emergency, with increasing restrictions on water use in response to worsening drought or emergency conditions and decreasing supplies.

Section 10-206 Application

(1) The provisions of this Article apply to any Person in the use of any Potable Water provided by the City of Inglewood.

(2) The provisions of this Article do not apply to uses of water necessary to protect public health and safety or for essential government services, such as police, fire, and other similar emergency and water quality maintenance services.

(3) The provisions of this Article do not apply to the use of Recycled Water.

(4) The provisions of this Article do not apply to the use of water by commercial nurseries and commercial growers to sustain plants, trees, shrubs, crops or other vegetation intended for commercial sale.

(5) This Article is intended solely to further the conservation of Potable Water. It is not intended to implement any provision of Federal, State, or Local Statutes, Ordinances, or Regulations relating to protection of water quality or control of drainage or Runoff. Refer to the local jurisdiction or the Los Angeles

Regional Water Quality Control Board for information on any storm-water ordinances and storm water management plans.

Section 10-207 Definitions

The words used in this article have the meaning set forth below:

"Application rate" means the depth of water applied to a given area, usually measured in inches per hour.

"Emitter" means a drip irrigation emission device that delivers water slowly from the system to the soil.

"Infiltration Rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

"Local Water Purveyor" means any entity, including a public agency, city, county, or private water company that provides retail water service.

"Person" means any natural person or persons, corporation, public, or private entity, governmental agency or institution, including all agencies and departments of City of Inglewood, or any other user of water provided by the City or Local Water Purveyor.

"Potable Water" means water, which is suitable for drinking.

"Recycled Water or reclaimed water" means treated or recycled wastewater of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

"Runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, Runoff may result from water that is applied at too great a rate (Application Rate exceeds Infiltration Rate) or when there is a steep slope.

"Single Pass Cooling Systems" means equipment where water is circulated only once to cool equipment before being disposed.

"Station" means an area served by one valve or by a set of valves that operate simultaneously.

Section 10-208. Permanent Water Conservation Requirements

The following water conservation requirements are effective at all times and are permanent. Violations of this Article will be considered waste and an unreasonable use of water.

(1) Limits on Watering Hours: Watering or irrigating of lawn, landscape or other vegetated area with Potable Water is prohibited between the hours of 9:00 a.m. and 4:00 p.m. Pacific Standard Time, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

(2) Limit on Watering Duration: Watering or irrigating of lawn, landscape or other vegetated area with Potable Water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen (15) minutes watering per day per Station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no Emitter produces more than two (2) gallons of water per hour and weather based controllers or stream rotor sprinklers that meet a 70% efficiency standard.

(3) No Excessive Water Flow or Runoff: Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or Runoff onto an adjoining sidewalk, driveway, street, alley, gutter, ditch or adjacent property is prohibited.

(4) No Washing Down Hard or Paved Surfaces: Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-

off device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom.

(5) Obligation to Fix Leaks, Breaks or Malfunctions: Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than three (3) days of receiving notice from the City of Inglewood, is prohibited.

(6) Recirculating Water Required for Water Fountains and Decorative Water Features: Operating a water fountain or other decorative water feature that does not use recirculated water is prohibited.

(7) Limits on Washing Vehicles: Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility.

(8) Drinking Water Served Upon Request Only: Eating or drinking establishments, including but not limited to a restaurant, hotel, cafe, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any Person unless expressly requested.

(9) Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services: Hotels, motels and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood language.

(10) No Installation of Single Pass Cooling Systems: Installation of Single Pass Cooling Systems is prohibited in buildings requesting new water service.

(11) No Installation of Non-re-circulating Water Systems in Commercial Car Wash and Laundry Systems: Installation of non-re-circulating water systems is prohibited in new commercial conveyor car wash and new commercial laundry systems.

(12) Restaurants Required to Use Water Conserving Dish Wash Spray Valves: Food preparation establishments, such as restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

(13) Commercial Car Wash Systems: Effective on September 1, 2015, all commercial conveyor car wash systems must have installed operational re-circulating water systems, or must have secured a waiver of this requirement from the City of Inglewood.

Section 10-209. Determination & Notification of Water Supply Shortage

Declaration and Notification of Water Supply Shortage: The existence of a Level 1, Level 2, or Level 3 Water Supply Shortage condition or the retraction of a Level 1, Level 2, or Level 3 Water Supply Shortage condition, may be declared by resolution of the City of Inglewood adopted at a regular or special public meeting held in accordance with State law. Such declared Level controls over any inconsistent, ambiguous or contrary language of Section 10-208. The mandatory conservation requirements applicable to Level 1, Level 2, or Level 3 conditions will take effect on the fifteenth (15) day after the date the shortage level is declared. Within seven (7) days following the declaration of a shortage level, the City of Inglewood must publish a copy of the resolution in a newspaper used for publication of official notices. If the City of Inglewood activates a water allocation process, it must provide notice of the activation by including it in the regular billing statement or by any other mailing to the address to which the City of Inglewood customarily mails the billing statement for fees or charges for on-going water service. A water allocation will be effective on the eighth day following the date of mailing or at such later date as specified in the notice. The retraction of mandatory conservation

requirements applicable to Level 1, Level 2, or Level 3 conditions will take effect immediately upon City Council action.

Section 10-210. Level of Water Shortage:

(1) Level 1 Water Supply Shortage

(a) A Level 1 Water Supply Shortage exists when the City of Inglewood determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the City of Inglewood of a Level 1 Water Supply Shortage condition, the City of Inglewood will implement the mandatory Level 1 conservation measures identified in this section.

(b) Additional Water Conservation Measures: In addition to the prohibited uses of water identified in Section 10-208, the following water conservation requirements apply during a declared Level 1 Water Supply Shortage:

(i) Limits on Watering Days: Watering or irrigating of lawn, landscape or other vegetated area with Potable Water is limited to three (3) days per week during the months of April through October on a schedule established and posted by the City of Inglewood. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with Potable Water is limited to no more than two (2) days per week on a schedule established and posted by the City of Inglewood. This provision does not apply to watering or irrigating by use of recycled, reclaimed or storm-water, landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no Emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short

periods of time for the express purpose of adjusting or repairing an irrigation system.

(ii) Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the plumbing or distribution system must be repaired within seventy-two (72) hours of notification by the City of Inglewood unless other arrangements are made with the City of Inglewood.

(2) **Level 2 Water Supply Shortage**

(a) A Level 2 Water Supply Shortage exists when the City of Inglewood determines, in its sole discretion, that due to drought or other water supply conditions, a higher level of water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the City of Inglewood of a Level 2 Water Supply Shortage condition, the City of Inglewood will implement the mandatory Level 2 conservation measures identified in this section.

(b) Additional Conservation Measures: In addition to the prohibited uses of water identified in Section 10-208, the following additional water conservation requirements apply during a declared Level 2 Water Supply Shortage:

(i) Watering Days: Watering or irrigating of lawn, landscape or other vegetated area with Potable Water is limited to two (2) days per week during the months of April through October on a schedule established and posted by the City of Inglewood. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with Potable Water is limited to no more than one (1) day per week on a schedule established and posted by the City of Inglewood. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no Emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or

irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

(ii) Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the plumbing or distribution system must be repaired within forty-eight (48) hours of notification by the City of Inglewood unless other arrangements are made with the City of Inglewood.

(iii) Limits on filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage level under this ordinance.

(3) Level 3 Water Supply Shortage

(a) A Level 3 condition exists when the City of Inglewood declares a water shortage emergency and notifies its residents and businesses that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety. Upon the declaration of a Level 3 Water Supply Shortage condition, the City of Inglewood will implement the mandatory Level 3 conservation measures identified in this section.

(b) Additional Conservation Measures: In addition to the prohibited uses of water identified in Section 10-208, the following water conservation requirements apply during a declared Level 3 Water Supply Shortage Emergency:

(i) No Watering or Irrigating: Watering or irrigating of lawn, landscape or other vegetated area with Potable Water is prohibited. This restriction does not apply to the following categories of use, unless the City of Inglewood has determined that Recycled Water is available and may be applied to the use:

* Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self-closing water shut-off nozzle or device;
* Maintenance of existing landscape necessary for fire protection;
* Maintenance of existing landscape for soil erosion control;
* Maintenance of plant materials identified to be rare or essential to the well-being of protected species;
* Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, and school grounds, provided that such irrigation does not exceed two (2) days per week according to the schedule and time restrictions established in this Article;
* Actively irrigated environmental mitigation projects.

(ii) Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the plumbing or distribution systems must be repaired within twenty four (24) hours of notification by the City of Inglewood unless other arrangements are made with the City of Inglewood.

(iii) Limited Potable Water Service: Upon declaration of a Level 3 Water Supply Shortage, limited new Potable Water service will be provided, limited temporary meters or permanent meters will be provided, and no ability to serve or provide Potable Water service (such as, will-serve letters, certificates, or letters of availability) will be issued, except under the following circumstances:

- A valid, unexpired construction permit and/or building permit has been issued for the project; or
- The project is necessary to protect the public health, safety,

and welfare; or

- The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the City of Inglewood.

This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less.

(iv) Discontinue use of ornamental fountains or similar decorative water features unless Recycled Water is used.

(v) Swimming Pools and Spas: Filling of swimming pools and outdoor spas is prohibited.

Section 10-211. Hardship Waiver.

(1) Undue and Disproportionate Hardship: If, due to unique circumstances, a specific requirement of this Article would result in undue hardship to a Person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the Person may apply for a waiver to the requirements as provided in this section.

(2) Written Finding: The waiver may be granted or conditionally granted only upon a written finding of the existence of facts demonstrating an undue hardship to a Person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water use due to specific and unique circumstances of the user or the user's property.

(a) Application: Application for a waiver must be on a form prescribed by the City of Inglewood and accompanied by a non-refundable processing fee in an amount set by City of Inglewood resolution.

(b) Supporting Documentation: The application must be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.

(c) Required Findings for Waiver: An application for a waiver will be denied unless the Director of Public Works or his designee finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the City of Inglewood or its Agent, all of the following:

i. That the waiver does not constitute a grant of special privilege inconsistent with the limitations upon other residents and businesses;

ii. That because of special circumstances applicable to the property or its use, the strict application of this Article would have a disproportionate impact on the property or use that exceeds the impacts to residents and businesses generally;

iii. That the authorizing of such waiver will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the City of Inglewood to effectuate the purpose of this Article and will not be detrimental to the public interest; and

iv. That the condition or situation of the subject property or the intended use of the property for which the waiver is sought is not common, recurrent or general in nature.

(d) Approval Authority: The Director of Public Works or his designee must act upon any completed application no later than ten (10) days after submittal and may approve, conditionally approve, or deny the waiver. The applicant requesting the waiver must be promptly notified in writing of any action taken. Unless specified otherwise at the time a waiver is approved, the waiver will apply too the subject property during the period of the mandatory water supply shortage condition. The decision of the Director of Public Works or his designee shall be final.

Section 10-212 Penalties and Violations

(1) Misdemeanor: Any violation of this Article may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty (30) days, or by a fine not exceeding one thousand dollars ($1,000), or by both.

(2) Penalties: Penalties for failure to comply with any provisions of the ordinance are as follows:

(a) First Violation: The City of Inglewood will issue a written warning.

(b) Second Violation: A second violation within the preceding twelve (12) calendar months is punishable by a fine not to exceed one hundred dollars ($100).

(c) Third Violation: A third violation within the preceding twelve (12) calendar months is punishable by a fine not to exceed two hundred and fifty dollars ($250).

(d) Fourth and Subsequent Violations: A fourth and any subsequent violation is punishable by a fine not to exceed five hundred ($500).

i. Water Flow Restrictor: In addition to any fines, the City of Inglewood may install a water flow restrictor device of approximately one gallon per minute capacity for services up to one and one-half inch size and comparatively sized restrictors

for larger services after written notice of intent to install a flow restrictor for a minimum of forty eight (48) hours.

(ii) Discontinuing Service: In addition to any fines and the installation of a water flow restrictor, the City of Inglewood may disconnect a customer's water service for willful violations of mandatory restrictions in this Article.

(3) Cost of Flow Restrictor and Disconnecting Service: A Person or entity that violates this ordinance is responsible for payment of the City of Inglewood's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the City of Inglewood's schedule of charges then in effect. The charge for installing and/or removing any flow restricting device must be paid to the City of Inglewood before the device is removed. Nonpayment will be subject to the same remedies as nonpayment of basic water rates.

(4) Separate Offenses: Each day that a violation of this ordinance occurs is a separate offense.

Section 213 Notice and Hearing

(1) The City of Inglewood will issue a Notice of Violation by mail or personal delivery at least ten (10) days before taking enforcement action. Such notice must describe the violation and the date by which corrective action must be taken. A customer may appeal the Notice of Violation by filing a written notice of appeal with the Director of Pubic Works no later than the close of business on the day before the date scheduled for enforcement action. Any Notice of Violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled before the Director of Public Works or his designee within twenty-one (21) calendar days, and the City of Inglewood will mail written notice of the hearing date to the customer at least ten (10) days before the date of the hearing.

(2) Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the City of Inglewood may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violations and the current declared water Level condition.

Section 10-214 Authority to Issue Violation and Enforce the Code

The Public Works Department and Code Enforcement Division shall have the duties of investigation and enforcement of this article. They both shall have the authority to issue citations for water conservation and water efficient landscape violations, and disconnect/reconnect services upon findings.

SECTION 2. The City Council hereby declares this ordinance an emergency ordinance affecting the public peace, health, safety, comfort, convenience and general welfare of the City of Inglewood, its citizens and the general public and specifically finds:

(a) The City receives its water supply from two sources: 80% from Metropolitan Water District, through West Basin Municipal Water District (surface water from Colorado River and Northern California), and 20% from local groundwater produced from City wells; and

(b) Both surface water and ground water supply is continuously depleting due to dry weather conditions requiring reduction in consumption; and

(c) City well production capacity has substantially depleted due to age of the four (4) existing wells (2 wells drilled in 1974 and one in 1990); and

(d) The City will be primarily dependent on surface water supply because it will be 2-3 years before the City drills two new wells and improves its local water supply; and

(e) There is a need for water conservation and regulations because there is a limited supply of water available to serve the residents and businesses of the City; and

(f) Careful water management that includes water conservation measures to ensure a reliable minimum supply of water to meet current and future water supply needs; and

(g) Article X, Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use, waste or unreasonable use of water should be prevented, and conservation of water should be fully exercised with a view to the reasonable and beneficial use thereof; and

(h) Article XI, Section 7 of the California Constitution declares that a city or county may make and enforce within its limits all local, police, sanitary and other ordinances and regulations not in conflict with general laws; and

(i) On January 17, 2014, the Governor issued a proclamation of a state of emergency under the California Emergency Services Act Based on drought conditions; and

(j) On April 25, 2014, the Governor issued a proclamation of a continued state of emergency under the California Emergency Services Act based on continued drought conditions; and

(k) The drought conditions that formed the basis of the Governor's emergency proclamations continue to exist; and

(l) The present year is critically dry and has been immediately preceded by two or more consecutive below normal, dry, or critically dry years; and

(m) The California State Water Resources Control Board adopted *Article X. Prohibition of Activities and Mandatory Actions*

During Drought Emergency at its July 15, 2014, meeting, which became effective August 1, 2014; and

(n) Urban water suppliers, like the City, that violate mandatory actions approved by the California State Water Resources Control Board could be subject to cease and desist orders for violating emergency regulations with fines up to $10,000 per day per violation. Or the matter could be referred to the Attorney General's Office for further action; and

(o) The California Water Code, Section 10632 requires that stages of action be undertaken by urban water suppliers in response to water supply shortages, including up to a 50 percent reduction in water supply; and

(p) The adoption and enforcement of this emergency ordinance is necessary to manage the City's Potable Water supply and to avoid or minimize the effects of drought and shortage within the City; and

(q) That this Ordinance and actions taken hereafter pursuant to it are exempt from the California Environmental Quality Act as specific actions necessary to prevent or mitigate an emergency pursuant to Public Resources Code Section 21080(b)(4) and the California Environmental Quality act Guidelines Section 15269(c).

SECTION 3. The City Council hereby declares that the provisions of this Ordinance are severable, and if for any reason a court of competent jurisdiction shall hold any sentence, paragraph or section of this ordinance to be invalid, or if any provision of this ordinance be invalidated by the enactment of a state or federal statute, such judicial decision or statute enactment shall not affect the validity of the remaining parts of this ordinance.

SECTION 4. This ordinance shall take effect and be in full force immediately upon the final passage and adoption thereof, as provided in the Inglewood City Charter.

SECTION 5. The City Clerk shall certify to the passage and adoption of this ordinance and to its approval by the City Council and shall cause the same to be published in accordance with the City Charter.

Passed, approved and adopted this 21st day of October, 2014.

James T. Butts, Jr.,
Mayor

ATTEST:

Yvonne Horton
City Clerk

N JALEWIS\Ordinances ORDINANCE - Water Conservation PW 9 14 2.doc

APPENDIX H

NOTICE OF PUBLIC HEARING AND RESOLUTION FOR PLAN ADOPTION

CITY OF INGLEWOOD

Public Works Department

Inglewood
All-America City
2009

Louis A. Atwell, P.E.
Public Works Director

May 31, 2016

Ms. Sachi A. Hamai
Chief Executive Officer
County of Los Angeles
500 W. Temple St.
Los Angeles, Ca. 90012

Dear Ms. Hamai:

Notice of Preparation
City of Inglewood 2015 Urban Water Management Plan

The City of Inglewood is currently preparing the 2015 Urban Water Management Plan (2015 UWMP) for its service area as required by the Urban Water Management Planning Act in the California Water Code section 10610. The final draft of the 2015 UWMP will be available for review on the City's website at www.cityofinglewood.org in September 2016.

The final draft will include all information that is required under the Act and will meet all of the requirements in the 2015 Final Guidebook issued by the California Department of Water Resources in March 2016. The public hearing and the adoption of the 2015 – City of Inglewood UWMP will be held at the City of Inglewood Council meeting on September 20, 2016. PDF copies and a CD of the final 2015 UWMP will be sent to your office following its adoption.

If you have any concerns, please contact Boytrese Osias, Senior Engineer, City of Inglewood Public Works Department at (310) 412 – 5333.

Sincerely,

Louis A. Atwell, P.E.
Director of Public Works

Notice of Public Hearing

NOTICE IS HERBY GIVEN that the City Council of the City of Inglewood, California will hold a public hearing on **Tuesday, October 4, 2016 at the hour of 2:00 p.m.**, in the City Council Chambers, Ninth Floor, Inglewood City Hall, One Manchester Boulevard, Inglewood, California **to consider the resolution of intent to adopt the City's 2015 Urban Water Management Plan (UWMP).**

All persons interested may appear before said Council and be heard with reference to this matter.

The City of Inglewood 2015 Urban Water Management Plan is prepared in compliance with the State of California, California Water Code 10610 which is known as Urban Water Management Planning Act of 1983 (Act). The Act requires urban water suppliers' providing water to more than 3,000 customers to adopt an Urban Water Management Plan (UWMP) every 5 years.

The primary goals of the Act are to encourage urban water suppliers to develop long range plans in an effort to ensure appropriate levels of reliability in their water services during normal, dry, and multiple dry water years. The goals also include management of urban water demands, maintaining and improving water quality and water conservation.

This notice is given by the order of the City Council of the City of Inglewood and is dated this 13rd day of September 2016.

Yvonne Horton, City Clerk
CITY OF INGLEWOOD, CALIFORNIA

If you will require special accommodations due to a disability, please contact the Office of the City Clerk at (310) 412-5280 or FAX (310) 412-5533, One Manchester Boulevard, 1st Floor, Inglewood, California 90301. All requests for accommodations must be received 48 hours prior to the day of the hearing.

"If you challenge the aforementioned public hearing in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, the public hearing."

In the event that the City Council meeting of October 4, 2016 is not held, or is concluded prior to this public hearing agenda item being considered, the public hearing will automatically be continued to the next regularly scheduled City Council meeting.

"Si no entiende esta noticia o si necesita mas informacion, favor de llamar a este numero (310) 412-5280."

Date of Publication: September 15, 2016 and September 22, 2016

INGLEWOODTODAY
WWW.INGLEWOODTODAY.COM

9111 S. LaCienega Blvd., Suite 100
Ph: 310 670-9600 Fax: 310 338-9130
www.inglewoodtoday.com
Email: itnetworks@msn.com

September 22, 2016

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

STATE OF CALIFORNIA
County of Los Angeles

I am a citizen of the United States and a resident of the County of Los Angeles; 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 and publisher of Inglewood Today, a weekly newspaper, published in the English language in the City of Inglewood and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of Los Angeles, State of California, under date of July 24, 2009, Case No. BS120491, that the notice of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following date(s): Sept 15, 22, 2016

Executed on: Sept 15, 2016
Inglewood, California

I certify (or declare) under penalty that the foregoing us true and correct.

xWillie Brown Jr.
Willie Brown, Publisher

Proof of Publication of

City Of Inglewood
One Manchester Blvd.
Inglewood, CA 90301

Notice Of Public Hearing, October 4, 2016
SEE ATTACHED

Notice of Public Hearing

NOTICE IS HERBY GIVEN that the City Council of the City of Inglewood, California will hold a public hearing on Tuesday, October 4, 2016 at the hour of 2:00 p.m., in the City Council Chambers, Ninth Floor, Inglewood City Hall, One Manchester Boulevard, Inglewood, California to consider the resolution of intent to adopt the City's 2015 Urban Water Management Plan (UWMP).

All persons interested may appear before said Council and be heard with reference to this matter.

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The primary goals of the Act are to encourage urban water suppliers to develop long range plans in an effort to ensure appropriate levels of reliability in their water services during normal, dry, and multiple dry water years. The goals also include management of urban water demands, maintaining and improving water quality and water conservation.

This notice is given by the order of the City Council of the City of Inglewood and is dated this 13rd day of September 2016.

Yvonne Horton, City Clerk
CITY OF INGLEWOOD, CALIFORNIA

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"If you challenge the aforementioned public hearing in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, the public hearing."

In the event that the City Council meeting of October 4, 2016 is not held, or is concluded prior to this public hearing agenda item being considered, the public hearing will automatically be continued to the next regularly scheduled City Council meeting.

"Si no entiende esta noticia o si necesita mas informacion, favor de llamar a este numero (310) 412-5280."

RESOLUTION NO.: 17-01

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INGLEWOOD, CALIFORNIA MAKING FINDINGS AND OVERRULING PROTESTS AND OBJECTIONS TO ITS INTENT TO ADOPT THE CITY OF INGLEWOOD 2015 URBAN WATER MANAGEMENT PLAN.

WHEREAS, on October 4, 2016, a public hearing was held and all persons desiring to be heard and all oral and written protests and objections, if any, were fully heard and the Inglewood City Council gave all persons present and opportunity to hear and be heard with respect to the adoption of the City of Inglewood 2015 Urban Water Management Plan.

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF INGLEWOOD, CALIFORNIA, DOES HEREBY RESOLVE AND DECLARE THAT:

SECTION 1. Pursuant to California Water code Section 10610 et seq., the Inglewood City Council on October 4, 2016, approves of and orders the adoption of the City of Inglewood 2015 Urban Water Management Plan (hereinafter referred to as the "Plan").

SECTION 2. The Plan requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, to prepare and adopt an Urban Water Management Plan every 5 years in years ending in five and zero.

SECTION 3. The City of Inglewood (hereinafter referred to as the "City") supplies water to a population of over 84,790.

SECTION 4. The conservation and efficient use of the City's water supplies are of citywide concern.

SECTION 5. A long-term, reliable supply of water is essential to protect the health of the City's residential customers and the productivity of its businesses and economic climate.

SECTION 6. As part of its long-range planning activities, the city is making every effort to ensure that sufficient levels of reliable water service exists to meet the needs of

its various categories of customers during normal, dry and multiple dry water years.

SECTION 7. In the event the City Council meeting of October 4, 2016, is not held, the aforementioned public hearing for interested persons to object to the proposed City of Inglewood 2015 Urban Water Management Plan shall be automatically rescheduled to occur at the next regularly scheduled City Council meeting at the same hour and location.

BE IT FURTHER RESOLVED, that the City Clerk shall certify to the adoption of this resolution and the same shall be in full force and effect immediately upon adoption.

Passed, approved, and adopted this 4th day of OCTOBER, 2016.

James T. Butts, Jr.,
Mayor

ATTEST:

Yvonne Horton,
City Clerk

N:\JALEWIS\Resolutions\(Public Works) - Adoption Urban Water Management Plan 2015 doc