



## Chino Basin Desalter Authority

### 2015 Urban Water Management Plan

Karen E. Johnson, Water Resources Planning

June 2016

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**Prepared With Assistance From:**  
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Date of Public Hearing:	June 2, 2016
Plan Adoption Date:	June 2, 2016
Resolution Number:	2016-04
Plan Submitted to Department of Water Resources:	by July 1, 2016
The water supplier is a:	Special District – wholesaler
Utility services provided by the water supplier include:	Water
Public Water System Number:	3610075/3310083
Is the agency a Bureau of Reclamation Contractor?	No
Is the agency a State Water Project Contractor?	No
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**San Bernardino County, California**

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# **Chino Basin Desalter Authority**

## ***2015 Urban Water Management Plan***

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## ACRONYMS AND ABBREVIATIONS

Act	Urban Water Management Planning Act
AFY	acre feet per year
Basin	Chino Groundwater Basin
BMP	Best Management Practice
CBWM	Chino Basin Watermaster
CDA	Chino Basin Desalter Authority
CII	Commercial/Industrial/Institutional
CUWCC	California Urban Water Conservation Council
Delta	Sacramento River-San Joaquin River Delta
DMM	Demand Management Measures
DWR	California Department of Water Resources
DYY	Dry Year Yield
IEUA	Inland Empire Utilities Agency
IX	ion exchange
JCSD	Jurupa Community Services District
MCL	Maximum Contaminant Level
mgd	million gallons per day
mg/L	milligrams per liter
MOU	Memorandum of Understanding
MWD	Metropolitan Water District of Southern California
OBMP	Optimum Basin Management Program
RO	Reverse Osmosis
RUWMP	Regional Urban Water Management Plan
RWQCB	Regional Water Quality Control Board
SARWC	Santa Ana River Water Company
SAWPA	Santa Ana Watershed Project Authority
SWP	State Water Project
TDS	total dissolved solids
UWMP	Urban Water Management Plan
VOC	volatile organic compounds or chemicals
Watermaster	Chino Basin Watermaster
WFA	Water Facilities Authority
WMWD	Western Municipal Water District
WSAP	MWD's Water Supply Allocation Plan



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## Executive Summary

The Chino Basin Desalter Authority (CDA or Authority) 2015 Urban Water Management Plan was prepared by CDA in cooperation with its member agencies. CDA is a Joint Exercise of Powers Agency formed between the cities of Chino, Chino Hills, and Ontario, located in San Bernardino County and all entirely within the boundaries of IEUA, a wholesale water provider; and Jurupa Community Services District, Santa Ana River Water Company, and City of Norco located in Riverside County and all within the Western Municipal Water District (WMWD) which is both a wholesale and retail water provider. Both IEUA and WMWD member agencies are members of the Metropolitan Water District of Southern California with responsibility to provide wholesale imported water to the retail agencies within their respective service areas.

The CDA removes salts from brackish groundwater extracted from the lower Chino Basin with the Chino I and II Desalter facilities and distributes the drinking water to member agencies. The Chino I Desalter commenced operation in 2001 and was expanded in 2005. The Chino II Desalter became operational in 2006, and is currently undergoing an expansion which is estimated to add an extra 10.5 million gallons per day capacity to the current facility. The total capacity is expected to be operational by the end of calendar year 2016 with the completion of other Phase 3 Expansion project components.

In June 2000, the Optimum Basin Management Program (OBMP) was adopted by Chino Basin Watermaster and approved by the Superior Court to address water quality problems within the Chino groundwater basin and to increase and improve the water supply available from this source. The OBMP identifies groundwater recovery in the southern portion of the basin as a way to improve basin water supplies.

Groundwater in the southern portion of the Chino Basin is high in salts and nitrates. The "Maximum Benefit" plan for managing the Chino Groundwater Basin was approved by the Santa Ana Regional Water Quality Control Board in February 2004 as part of the Santa Ana River Basin Plan update. It provided that "hydraulic control" and groundwater quality improvement projects could be implemented to prevent degradation of downstream Santa Ana River flows into Orange County. The lower Chino Basin area was identified as the area needing recovery and treatment of brackish groundwater with the intent to control and manage outflow of groundwater high in salts and nitrates from the Chino Basin into the Santa Ana River.

The two groundwater treatment desalination systems include 22 groundwater extraction wells; pumps and pipelines that produce and convey 40,000 acre-feet per year (AFY) of raw water to treatment facilities; and the advanced treatment facilities that include processes for pretreatment, filtration, air stripping of volatile organic compounds, ion exchange for removal of



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nitrates, and reverse osmosis for removal of salts. This resulting 35,200 AFY of product water (treated water) is then blended and disinfected to produce high quality drinking water delivered to its member agencies. The waste process water of 4,800 AFY is composed of concentrated brine from the reverse osmosis process and the ion exchange process. The waste process water is discharged to the Inland Empire Brine Line as non-reclaimable water and conveyed to the Orange County Sanitation District for treatment and ultimate disposal to the Pacific Ocean. This brine disposal process will eventually export over 54,000 tons of salt out of Chino Basin each year. In the event of an emergency and/or water shortages, the Chino desalters serve as a stable and reliable potable water supply.

The main benefits of the CDA water supply are:

1. It represents a reliable, local source of drinking water produced by desalination;
2. Improves water supply reliability through enhanced local supplies reducing dependency on Metropolitan Water District's imported supplies;
3. Salt and nitrates are removed from the groundwater basin to clean up the Chino Basin; and,
4. Hydraulic control of groundwater is enhanced by the location of groundwater extraction wells. This helps prevent groundwater that is high in salinity and nitrates from "spilling over" the Chino Basin southern barrier into the Santa Ana River.

Each of the six retail members of CDA, and Western Municipal Water District as a retail and wholesale member, has contractual commitments to purchase water produced by CDA. These commitments total 35,200 AFY in 2015 in accordance with the OBMP. The members of CDA have other sources of water (ground, surface, recycled, and imported water) in addition to the recovered groundwater produced by CDA.

This UWMP describes the particular uniqueness of CDA's role as a wholesaler. Its primary authority is to desalinate brackish groundwater for its member agencies. The supply is 100 percent reliable under all water year types because pumping is in response to the OBMP to remove salts and nitrates from the basin and prevent highly saline groundwater from reaching the Santa Ana River. No water shortages are anticipated due to the mandate to continually pump 40,000 AFY from the basin. Because its authority is focused on groundwater recovery for basin water quality improvement, CDA does not take on other responsibilities for its member agencies such as supply planning or conservation outreach. IEUA and WMWD provide water use efficiency outreach for their member agencies, including all CDA member agencies, to ensure widespread and consistent messaging and promote conservation savings.

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## Chapter 1 – Introduction and Overview

### 1.1 UWMP Background

This Urban Water Management Plan (UWMP) was prepared by Chino Basin Desalter Authority (CDA or Authority) in response to the Urban Water Management Planning Act (Act), Water Code Sections 10610 through 10657, which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984 with several amendments since that time. The Act requires that every urban water supplier providing water for municipal purposes directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually prepare and adopt an UWMP every five years. CDA, as a wholesaler, supplies more than 3,000 acre-feet of water annually to its member agencies and the member agencies serve over 3,000 customers.

Amendments to the Act since the 2010 UWMP include new requirements involving standardized mandatory tables, electronic submittal of table data, and a water loss analysis using the American Water Works Association (AWWA) template. Sections of this UWMP that specifically correspond to the Act are summarized in a California Department of Water Resources (DWR) UWMP Checklist located in Appendix A. Although not required to look beyond 20 years, the Authority included data to the year 2040.

A consultant – Karen E. Johnson, Water Resources Planning – prepared this 2015 UWMP with CDA staff. The format of the UWMP has changed since the 2010 UWMP to succinctly integrate DWR mandatory tables into the text. The report was reformatted consistent with DWR’s updated *Guidebook for Urban Water Suppliers* to aid DWR in its review.

### 1.2 Coordination with Other Planning Efforts

The 2015 UWMP was prepared by utilizing relevant planning documents prepared by CDA and other entities within region. These include the Chino Basin Optimum Basin Management Plan, dated August 19, 1999, draft UWMPs of member agencies, and Metropolitan Water District of Southern California (MWD) draft 2015 RUWMP. In preparing the UWMP, DWR’s *Guidebook for Urban Water Suppliers* and related required tables were utilized, along with other references listed in Appendix B.

### 1.3 Strategic Groundwater Management Objective

The principal drainage for the Chino groundwater basin (Basin or Chino Basin) is the Santa Ana River. It flows 69 miles across its watershed from its origin in the San Bernardino Mountains in the east, to the Pacific Ocean to the west, as shown in Figure 1-1. The Santa Ana River enters the

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Basin at the Riverside Narrows and flows along the southern Chino Basin boundary to the Prado Flood Control Reservoir. After being discharged through the Prado Dam spillway, the river winds its way through Orange County until it drains in the ocean near Huntington Beach. Several intermittent streams in the Chino Basin drain to the river. Year-round flow occurs along the Santa Ana River from surface inflows at Riverside Narrows, discharges from municipal water recycling facilities to the Santa Ana River above Prado Dam, and rising groundwater.

Groundwater in the southern portion of Chino Basin is high in salts and nitrates. The “Maximum Benefit” concept for managing Chino Basin was approved by the Santa Ana Regional Water Quality Control Board (RWQCB) in the 2004 Santa Ana River Basin Plan update. It concluded that hydraulic control and groundwater quality improvement projects could be implemented to prevent degradation of adjacent downstream water supplies, in particular, the Santa Ana River. The lower basin area was identified to control and manage outflow of groundwater high in salts and nitrates from Chino Basin into the Santa Ana River.

To manage the outflow, 40,000 acre-feet of groundwater is to be extracted from the lower basin each year by CDA. This is done through a series of well fields along an east-west line at the south end of the basin. The contaminated water is treated for potable use through desalination, thus providing a reliable water supply. In addition, pumping 40,000 AFY will help to mitigate the degradation of water quality while providing hydraulic control in the south end of Chino Basin.

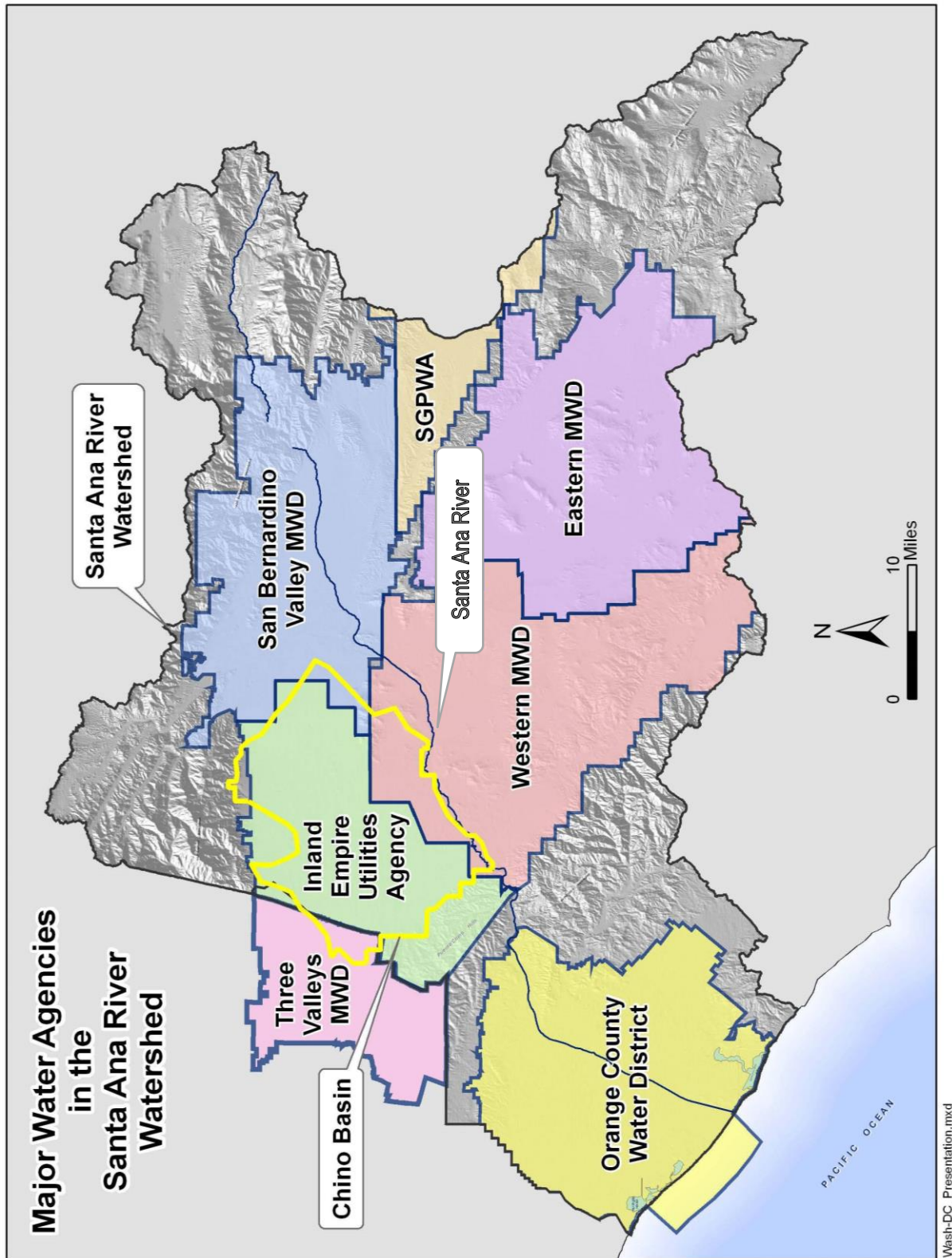


Figure 1-1. Chino Basin and the Santa Ana River



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## Chapter 2 – Plan Preparation

### 2.1 Basis for the Plan

CDA is a public water system regulated by the State Water Resources Control Board, Division of Drinking Water. CDA member agencies serve over 3,000 customers and CDA, as a wholesaler, supplies more than 3,000 acre-feet of water annually to its member agencies, therefore is required to prepare an UWMP. The member agencies, using multiple sources of water, provide water service directly to their customers. CDA is strictly a wholesale entity managing the groundwater basin water quality by pumping, treating, and delivering water to its member agencies.

The CDA was formed under a Joint Exercise of Powers Agreement (JPA) on September 25, 2001 (see Appendix C) by a group of seven local agencies. The Jurupa Community Services District (JCSD), Santa Ana River Water Company (SARWC), cities of Chino, Chino Hills, Norco, and Ontario, and Inland Empire Utilities Agency (IEUA) are original members of the CDA. Western Municipal Water District (WMWD) was formally admitted to the CDA membership by the CDA Board of Directors in 2009 bringing the total number of member agencies to eight. An eight member Board of Directors, representing the member agencies, governs the CDA; each director is designated and appointed by the governing body of the entity that he or she represents. IEUA's representative serves as an ex-officio member. General characteristics of each CDA member agency are summarized in Table 2-1.

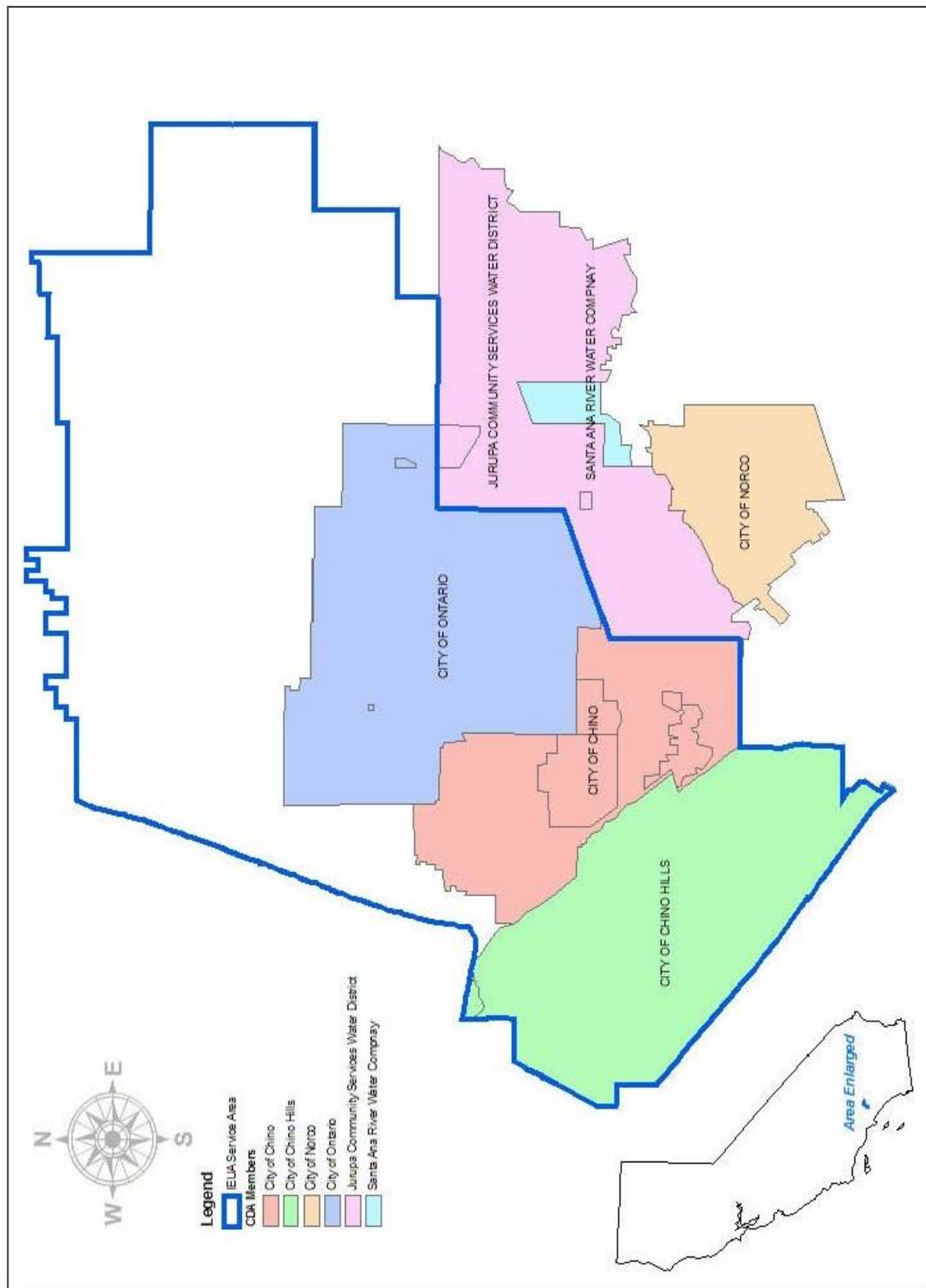
Both IEUA and WMWD are members of MWD with responsibility to provide wholesale imported water to the retail agencies within their respective service areas. Figure 1-1 in Chapter 1 presents the IEUA and WMWD boundaries in relation to the major wholesale water agencies in the Santa Ana River watershed, and the Chino Basin. Figure 2-1 presents the service areas of the CDA member agencies.

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**Table 2-1: Member Agency Characteristics**

<b>CDA Members in San Bernardino County and Inland Empire Utilities Agency Service Area</b>	
<b>City of Chino</b>	The City of Chino serves water to approximately 74,000 residents of the City and some unincorporated areas of San Bernardino County.
<b>City of Chino Hills</b>	The City of Chino Hills provides water to approximately 78,000 residents of the City.
<b>City of Ontario</b>	The City of Ontario supplies water to approximately 169,000 residents of the City and some unincorporated areas of San Bernardino County. The City of Ontario also serves a small portion of the City of Rancho Cucamonga.
<b>Inland Empire Utilities Agency</b>	IEUA serves as an ad-hoc member of the CDA Board and provides assistance with financial commitments, seeking grant funds, loans, etc. IEUA has a population of approximately 850,000 served by its member agencies: cities of Chino, Chino Hills, Ontario, and Upland; Cucamonga Valley Water District, Fontana Water Company, Monte Vista Water District, and Santa Antonio Water Company. IEUA is a wholesale water agency and does not receive product water from the CDA.
<b>CDA Members in Riverside County and Western Municipal Water District Service Area</b>	
<b>City of Norco</b>	The City of Norco supplies water to approximately 26,000 residents of the City. Norco also receives water from the Arlington Desalter and can exchange CDA and Arlington supplies with WMWD.
<b>Santa Ana River Water Company</b>	Santa Ana River Water Company provides water to a population of 8,000 in northwestern Riverside County.
<b>Jurupa Community Services District</b>	Jurupa Community Services District provides water to a population of 102,000 residents in its service area of Jurupa Valley and Eastvale, plus portions of the City of Norco.
<b>Western Municipal Water District</b>	Western Municipal Water District is a wholesale and retail water provider, with a population of approximately 94,000 in its retail service area and 880,000 residents in its wholesale area. WMWD provides supplemental water and/or water resources management to the cities of Norco, Corona, and Riverside and the water agencies of JCSD, SARWC, Box Springs Mutual, Eagle Valley Mutual, Elsinore Valley, Lee Lake, and Rancho California, and unincorporated areas of El Sobrante, Eagle Valley, Temescal Creek, Woodcrest, Lake Mathews, and March Air Reserve Base.

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**Figure 2-1. CDA Member Agency Service Areas**



## 2.2 Regional Planning

As presented in Table 2-2, this UWMP is an individual plan. Although CDA member agencies are a part of IEUA and WMWD's regional alliances, CDA is strictly a wholesale provider of treated water to its member agencies, thus not subject to SB X7-7 baselines and target water use.

Table 2-2: Plan Identification			
Select Only One	Type of Plan		Name of RUWMP or Regional Alliance <i>if applicable drop down list</i>
<input checked="" type="checkbox"/>	Individual UWMP		
	<input type="checkbox"/>	Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/>	Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)		
NOTES:			

CDA is a wholesale agency, as noted in Table 2-3. This UWMP presents water production and distribution data in fiscal years ending with June 30, 2015. The quantities presented in this document are consistently presented in acre-feet (AF).

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
<input checked="" type="checkbox"/>	Agency is a wholesaler
<input type="checkbox"/>	Agency is a retailer
Fiscal or Calendar Year (select one)	
<input type="checkbox"/>	UWMP Tables Are in Calendar Years
<input checked="" type="checkbox"/>	UWMP Tables Are in Fiscal Years
07/01	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

CDA worked with its member agencies, presented in Table 2-4, to provide consistency in its exchange of data and information. The six CDA voting agencies plus WMWD and IEUA, are involved in water management within the lower Chino Basin. Except for SARWC, each of these agencies prepared their own UWMP that describes the water supplies and urban development occurring within their respective service areas. Other agencies involved with supply projects in the region include Chino Basin Watermaster, Santa Ana Watershed Project Authority (SAWPA), and MWD. The Chino Basin Optimum Basin Management Plan, dated August 19, 1999, guides the development of local water resources in the area. Compliance with all coordination, noticing, and reporting requirements of the Act for this UWMP is presented in Chapter 10.

Table 2-4 Wholesale: Water Supplier Information Exchange	
<input type="checkbox"/>	Supplier has informed more than 10 other water suppliers of water supplies available in accordance with CWC 10631. Completion of the table below is optional. If not completed include a list of the water suppliers that were informed.
<input checked="" type="checkbox"/>	Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with CWC 10631. <b>Complete the table below.</b>
Water Supplier Name	
	Inland Empire Utilities Agency
	Western Municipal Water District
	City of Chino
	City of Chino Hills
	City of Ontario
	City of Norco
	Jurupa Community Services District
	Santa Ana River Water Company
NOTES:	



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## Chapter 3 – System Description

### 3.1 General Facilities Description

The CDA removes salts from brackish groundwater (referred to as raw water in this document) which is extracted from lower Chino Basin with the Chino I and II Desalter facilities and distributes the drinking water to its member agencies for retail distribution to its customers. The SAWPA served as the initial contracting entity for the construction of Chino I Desalter and drilled the initial eleven extraction wells. When CDA was first organized on September 25, 2001, the CDA contracted with IEUA to take over the operation of the facility. IEUA currently operates/maintains the Chino I Desalter and the associated groundwater extraction wells, while JCSD operates/maintains the Chino II Desalter and maintains the associated groundwater extraction wells.

The Chino I Desalter was constructed in 2000 and expanded in 2005. Chino II Desalter, located in the Mira Loma neighborhood of Jurupa Valley, was constructed in 2006 and expanded in 2016. This expansion will increase the total desalted product water available to its member agencies from 24,600 to 35,200 AFY and extract an estimated 54,000 tons of salt from Chino Basin annually. The raw water supply (groundwater from Chino Basin) is 40,000 AFY; the difference between raw water and product water is waste process water. Physical facilities of the Desalter program are described here. Management of the Basin is described in Chapter 6, Water Supplies.

#### 3.1.1 Chino I Desalter

Chino I Desalter, located in Chino, was the beginning component of the innovative Chino Basin Desalter Program. When Chino I was commissioned and began operations in the summer of 2000, it had a capacity of 9,000 AFY. The initial 11 extraction wells delivered brackish water to Chino I Desalter. The reverse osmosis (RO) system treats 76 percent of the well extraction, producing 6.7 million gallons per day (mgd) of permeate (product) water, which is then blended with up to 4.9 mgd of ion exchange effluent (also product water), and approximately 2 mgd of well water treated for volatile organic compounds (VOCs), producing approximately 14,200 AFY of potable water that is delivered to the cities of Chino and Chino Hills and JCSD.

Concentrated brine from the RO process, discharged to the Inland Empire Brine Line as non-reclaimable water, is conveyed to the Orange County Sanitation District for treatment and ultimate disposal in the Pacific Ocean. Brine disposal currently removes over 10,000 tons per year of salt from the Basin.

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The initial treatment processes employed at Chino I includes the following.

1. Pretreatment
2. Filtration
3. Reverse osmosis
4. Disinfection
5. Disposal of concentrated brine
6. Blending of product water

Chino I was expanded in 2005. This expansion also increased the Inland Empire Brine Line discharge to 1.92 mgd. After plant upgrades were completed, the system now includes the following.

7. Ion Exchange technologies (IX)
8. VOC removal by air stripping
9. Raw water blending

To meet the overall goal of pumping 40,000 AFY from the Basin, contracted water deliveries were increased for the cities of Chino Hills, Chino, and Ontario. The IX treatment system and VOC stripping towers were added to increase the Chino I product water production from 9,000 AFY to 15,900 AFY.

The initial treatment process included blending of low TDS well water (bypass wells) with the RO treated well water that reduced the high nitrates (40 mg/L as N) and TDS (1,080 mg/L) to acceptable potable water levels. With the expansion, stripping towers for removal of VOCs were added to treat water from low TDS wells. In 2007, new vessels were added to the existing RO trains bringing the total facility name plate capacity to 14,200 AFY. In addition to the 14 extraction wells, there are monitoring wells, raw water pipelines, reservoirs, product water pipelines, pump stations, brine disposal lines and other offsite facilities that make up the system.

### **3.1.2 Chino II Desalter**

The Chino II Desalter was initiated by CDA to provide water deliveries to JCSD, City of Ontario, City of Norco, and SARWC. The Chino II Desalter is located adjacent to JCSD headquarters in Mira Loma, California. The Desalter was constructed and began operation in 2006. Groundwater from the eight wells in Mira Loma are treated using RO and IX treatment systems. The plant production capacity consists of 6.0 mgd RO permeate blended with 4.0 mgd of IX effluent and 2.0 mgd of bypassed well water. Chino II has treatment capacity to produce 11,820 AFY of potable product water. The water is pumped to the desalter transmission system for delivery to CDA member agencies.

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An expansion to Chino II Desalter is currently taking place and is anticipated to be completed in 2016. The expansion will increase Chino II capacity to 21,000 AFY of product water. There are eight Chino II Desalter wells known as the Chino Creek Well Field.

The most recent expansion aimed to maximize the production capacity of the entire CDA facilities and reach the pumping goal of 40,000 AFY from the Basin. The plan is to maintain Chino I at existing capacity and expand Chino II to 21,000 AFY with a concentrate reduction. The location of Chino I and Chino II Desalter facilities are presented in Figure 3-1.

## 3.2 Climate

The member agency service areas are in a semi-arid environment with mild winters, hot summers, and moderate rainfall of 14.8 inches as measured near Ontario. Precipitation occurs primarily between November and April. The annual mean is 66 degrees Fahrenheit. Temperatures vary greatly in the summer with maximum temperatures in the mid 90's and lows in the low 60's.

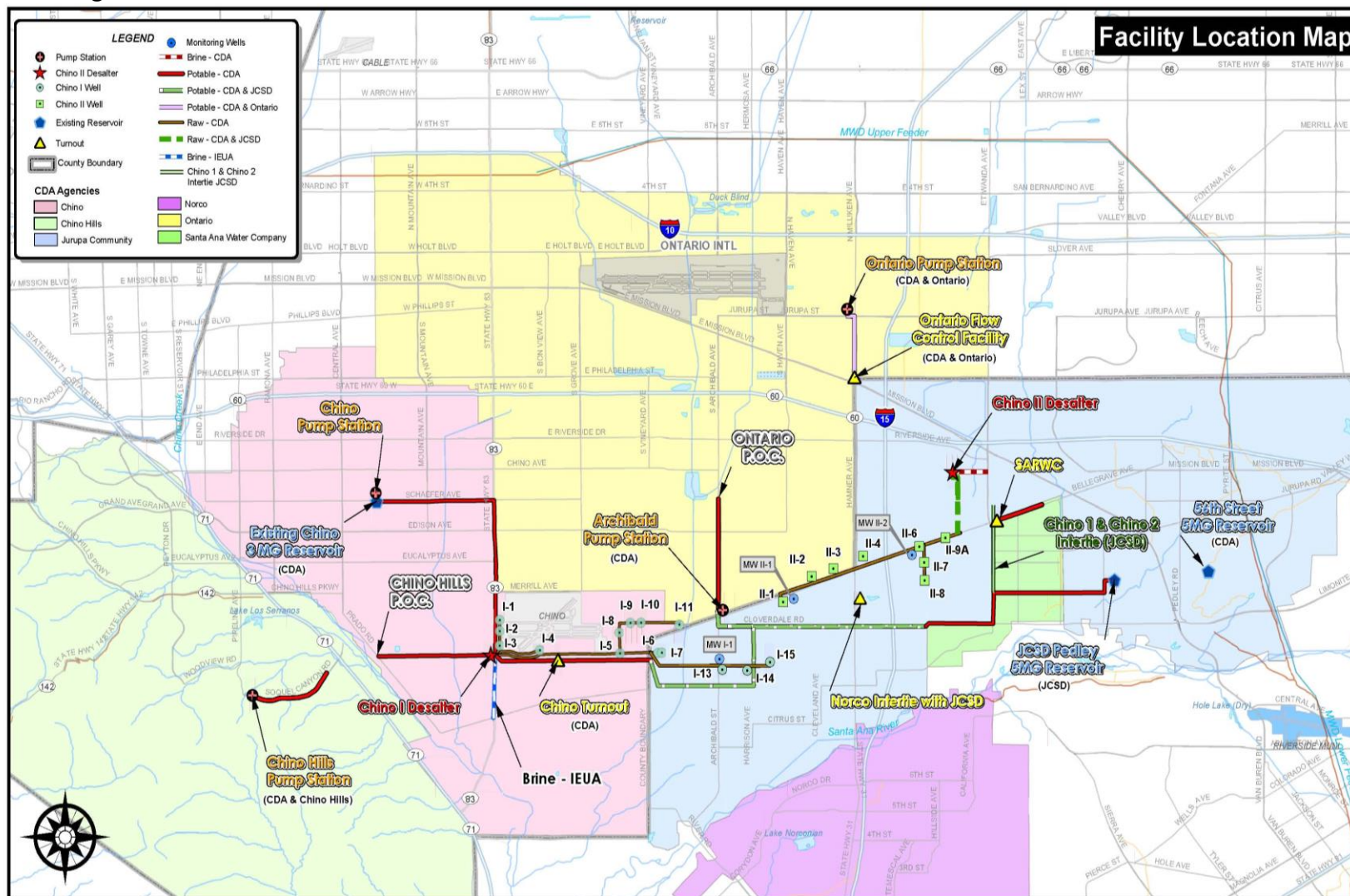
## 3.3 Population and Demographics

The service areas and characteristics of each of the CDA retail and wholesale water agencies are described in detail in each agency's individual UWMP. The estimated current population of each member agency is totaled and presented in Table 3-1. It is important to note however, that this total population estimate is not entirely served by the CDA supply directly. Rather, only a portion of each agency's population is actually served by the CDA Desalters as it provides one supply source among many that the member agencies manage.

There has been no attempt to quantify what proportion of the member agencies' service area population currently receives CDA water supply as it fluctuates daily depending on each agencies' supply sources. Accordingly, the function of the CDA, and the construction and operation of the existing and future Chino Basin Desalters, is not a traditional scenario of water demands driving the need for the new supply, but is a function of water quality management and hydraulic control to prevent low groundwater quality from migrating out of Chino Basin and surfacing in the Santa Ana River. However, the result is a highly reliable water supply for each agencies' supply portfolio.

Table 3-1 Wholesale: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040
	568,590	615,542	675,309	743,955	833,849	945,323
NOTES: Data provided from its member agencies except SARWC, provided by WMWD.						

### Figure 3-1 Location of Facilities





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## Chapter 4 – System Water Use

The Chino I and II Desalters are owned by CDA and serve the dual purpose of providing a reliable water supply and managing groundwater quantity and quality in the region. To make the Desalter projects financially viable, each CDA member agency agreed to purchase a minimum amount of production. Rather than being demand driven, these minimum purchase commitments form a fixed, reliable portion of the water supply portfolios of each of the retail CDA member agencies.

### 4.1 Water Demands

Table 4-1 presents the demands on the CDA system in 2015. In addition to the member agency entitlements which are product (treated) water purchases, another demand is the waste process water, or brine waste, which is a non-recoverable byproduct of the treatment process. Losses include system losses plus a small amount of unauthorized consumption, totaling a 2015 demand of 29,502 AF.

Table 4-1 Wholesale: Demands for Potable and Raw Water - Actual			
Use Type	2015 Actual		
	Additional Description (as needed)	Level of Treatment When Delivered	Volume
Sales to other agencies	Sales to member agencies	Drinking Water	25,629
Other	Waste process water	Raw Water	3,484
Losses		Drinking Water	389
<b>TOTAL</b>			<b>29,502</b>
NOTE: Waste process water is a non-recoverable brine waste. Losses include 379 AF losses plus 10 AF unauthorized consumption.			

### 4.2 Water Demand Projections

Table 4-2 presents water purchase commitments and waste process water projections as future “demands” on the system. Future demands reflect the expansion of facilities in 2016 to be able to meet the 40,000 AFY pumpage goal. Actual supplies provided to each retail agency will vary annually depending on the quantity of product water produced each year. For example, product water provided in 2010 and 2015 exceeded the goal of 24,600 AFY as CDA produced more water to make up for lower pumping levels in previous years. There were no sales to agencies other than the member retail agencies.



Table 4-2 Wholesale: Demands for Potable and Raw Water - Projected						
Use Type	Additional Description	Projected Water Use <i>Report To the Extent that Records are Available</i>				
		2020	2025	2030	2035	2040
Sales to other agencies		35,200	35,200	35,200	35,200	35,200
Losses	Waste process water	4,800	4,800	4,800	4,800	4,800
<b>TOTAL</b>		40,000	40,000	40,000	40,000	40,000
NOTE: Demand projections reflect member agency entitlements. Waste process water is non-recoverable brine waste and includes system losses.						

Table 4-3 presents the summary of water demands aggregated from Tables 4-1 and 4-2.

Table 4-3 Wholesale: Total Water Demands						
	2015	2020	2025	2030	2035	2040
Potable and Raw Water <i>From Tables 4-1 and 4-2</i>	28,502	40,000	40,000	40,000	40,000	40,000
Recycled Water Demand <i>From Table 6-4</i>	0	0	0	0	0	0
<b>TOTAL WATER DEMAND</b>	28,502	40,000	40,000	40,000	40,000	40,000
NOTES:						

### 4.3 Water Losses

Losses included in Tables 4-1 and 4-2 reflect the physical water losses from the waste process water and conveyance transmission to member agency turnouts. Water losses are typically determined by calculating the difference between water production and billed consumption. However, for CDA the losses include the waste process water which is a significant amount: 4,800 AFY, or 12 percent of total pumped. New technology is being researched that could increase the

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percentage recovery to greater than the existing 88 percent in the future, which would result in additional high quality drinking water.

Water losses have been quantified by CDA in accordance with a water system balance methodology developed by American Water Works Association. This analysis reflects the most recent 12 month period available consistent with the calendar year reporting of 2015; results are presented in Table 4-4. Because CDA facilities are relatively new, the actual losses associated with conveyance to the member agency turnouts, is negligible. Future losses in five year increments in Table 4-2 were based on the current estimate of waste process water and system losses.

The estimate of 2015 distribution system water losses provided in Table 4-4 is required for the 2015 UWMPs. For the 2020 UWMP, CDA will report losses for each of the years 2016 through 2020.

Table 4-4 Wholesale: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	379
<i>* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.</i>	
NOTES:	



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## Chapter 5 – Baselines and Targets

The DWR Guidebook for Urban Water Suppliers describes the Water Conservation Act of 2009, also known as SB X7-7 and its reporting requirements (DWR, 2016). The driver behind the legislation is to reduce Statewide urban water use by 20 percent by the year 2020. Each retail urban water supplier, including CDA retail member agencies, determines its baseline water use then establishes a reduced target water use for the years 2015 and 2020. Because CDA is a wholesale agency, it does report compliance with SB X7-7.



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## Chapter 6 – System Supplies

Both local and imported water supplies are used by the CDA retail water agencies. Local sources include groundwater, surface water, recycled water, and recovered groundwater treated by the CDA Desalters. Imported State Water Project (SWP) water is available to these areas through wholesale distribution to local retail agencies within the IEUA and WMWD service areas. By emphasizing local water supply development within the area, CDA member agencies have developed and will continue to develop cost-effective supplies that reduce the dependence on imported supplies. Information on these member agency efforts to diversify supplies can be found in their individual UWMPs and the regional UWMP prepared by IEUA and WMWD.

### 6.1 Purchased or Imported Water

CDA does not purchase or import water supplies, but its member agencies purchase water from MWD through IEUA and WMWD. The source of MWD's imported water used in Chino Basin is only from the SWP; this source is used because of RWQCB salinity restrictions that prohibit the use of Colorado River water in Chino Basin. Watermaster purchases imported water from IEUA to replenish Chino Basin. In addition, as a member of MWD, IEUA provides wholesale SWP water to the Water Facilities Authority (WFA) that operates a water treatment plant in Upland. Three CDA entities are member/owners of the WFA (cities of Chino, Chino Hills, and Ontario) and receive treated SWP water from WFA.

As a member of MWD, WMWD provides wholesale treated Colorado River water to its retail operations and to the City of Norco, through the City of Corona's potable water distribution system. The City of Norco also has access to water from the Arlington Desalter, located in Riverside.

### 6.2 Groundwater Resources

The Chino I and II Desalters exclusively use groundwater from the southern portion of the Chino Basin. Within the entire Basin, approximately 145,000 AFY is pumped for municipal and industrial purposes. In addition, 300 to 400 agricultural users pump about 40,000 AFY from the Basin. Accordingly, total groundwater production from Chino Basin is approximately 180,000 AFY. After the CDA's Phase 3 expansion is completed in 2016, the two desalters will pump around 40,000 AFY with an 88 percent recovery, or approximately 35,200 AFY which will be produced as product drinking water. The physical facilities of the desalter program are described in Chapter 3, System Description.

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### 6.2.1 1978 Chino Basin Judgment

Chino Basin Watermaster was established in 1978 under a Judgment entered in the Superior Court of the State of California for the County of San Bernardino. The Judgment adjudicated the groundwater rights in Chino Basin and required that the Basin be operated in accordance with the provisions of the Judgment under the direction of a court-appointed Chino Basin Watermaster (Watermaster). The Judgment is provided in Appendix D. The 1978 Judgment and subsequent agreements, ensure adequate water supplies in times of severe drought. In addition, basin-wide groundwater recharge capability, enhanced storage of higher quality water, and increased pumping capacity to extract the groundwater are critical elements to Basin management. The extraction of saline groundwater in the south portion of the Chino Basin is a key element of the groundwater management strategy. The Judgment mandated that Watermaster develop the Optimum Basin Management Program (OBMP).

### 6.2.2 Optimum Basin Management Program

In June 2000, the OBMP was adopted by Watermaster and approved by the member agencies to address water quality problems within Chino Basin and to increase and improve the water supply available from this source. Links to the OBMP Phase I and II Reports can be found in Appendix E and F, respectively. The safe yield of the basin is currently 140,000 AFY (as described in the Judgment.) The safe yield is allocated among three pools: 1) Overlying Agricultural Pool; 2) Overlying Non-Agricultural Pool; and 3) Appropriative Pool. CDA Member Agencies (except for IEUA and WMWD) are part of the Appropriative Pool.

Four primary management goals for the OBMP address the issues, needs, and interests of the water producers in Chino Basin.

#### **Goal No. 1 - Enhance Basin Water Supplies**

This goal applies not only to local groundwater, but also to all sources of water available for the enhancement of the Chino Groundwater Basin.

#### **Goal No. 2 - Protect and Enhance Water Quality**

This goal will be accomplished by implementing activities that capture and dispose of contaminated groundwater, treat contaminated groundwater for direct high priority beneficial uses, and encourage better management of waste discharges that impact groundwater.

#### **Goal No. 3 - Enhance Management of the Basin**

This goal will be achieved by implementing activities that lead to optimal management of Chino Basin.

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## **Goal No. 4 - Equitably Finance the OBMP**

This goal establishes an equitable financing plan among the groundwater producers for each individual project required in the OBMP.

### **6.2.3 Peace Agreement**

As part of the development of the OBMP, a historic Chino Basin Peace Agreement (Peace Agreement), provided in Appendix G, between all affected stakeholders in the basin was finalized in June 2000. In Chapter 1, Article VII of the Peace Agreement, terms and conditions were established for the construction and operation of Chino Basin desalters and a general template for the purchase and sale of desalted water. With finalization of the Peace Agreement, Watermaster developed the Chino Basin Recharge Master Plan to identify and prioritize opportunities for groundwater recharge within the Basin. In response to this, IEUA completed a Recycled Water Feasibility Study in 2002 and Recycled Water Implementation Plan, followed by a Business Plan (updated in 2015) to fully integrate its recycled water program into Watermaster goals and objectives for the OBMP and the Chino Basin Recharge Master Plan. A Final Peace Agreement was entered on October 25<sup>th</sup>, 2007, titled “Party Support for Watermaster’s OBMP Implementation Plan”.

To administer the construction, management, and operation of the desalters, CDA was formed under a JPA, creating the Chino Basin Desalter Authority on the September 25, 2001. In January 2004, the RWQCB amended the Basin Plan so that the Basin is operated under the RWQCB’s “Maximum Benefit” concept; hydraulic control must be achieved and demonstrated.

### **6.2.4 Maximum Benefit and Hydraulic Control**

The “maximum benefit” concept of groundwater quality management is included as part of the 2004 Basin Plan update. Watermaster and IEUA proposed that the TDS and nitrate-nitrogen objectives in the Chino North Management Zone be established based on “maximum benefit” and not on anti-degradation. Accordingly, RWQCB required proof that raising the TDS objective to 420 milligrams per liter (mg/L) and the nitrate-nitrogen objective to 5 mg/L will not adversely impact the quality of the Santa Ana River for downstream beneficial uses. Demonstrating “hydraulic control” will show that downstream beneficial uses are not impaired by management activities in the Chino North Management Zone.

The Hydraulic Control Program established in the 2004 Basin Plan Update is being implemented through CDA, IEUA, and Watermaster. These agencies fine tune groundwater production and recharge in the Basin to maximize yield and prevent outflow. The water supply wells for Chino I and II Desalters provide for hydraulic control in the lower Chino Basin, as described in Chapter 3.



Figure 6-1 presents the Basin and Maximum Benefit Management Zones. The Desalter wells are shown on Figure 6-1 in relation to the management zones. A more thorough discussion of Chino Basin groundwater management is contained in the State of the Basin reports produced every two years. The last update was 2014 (Watermaster, 2014). See Appendix B References for the link to Watermaster reports and other documents.

### 6.2.5 Groundwater Recently Pumped

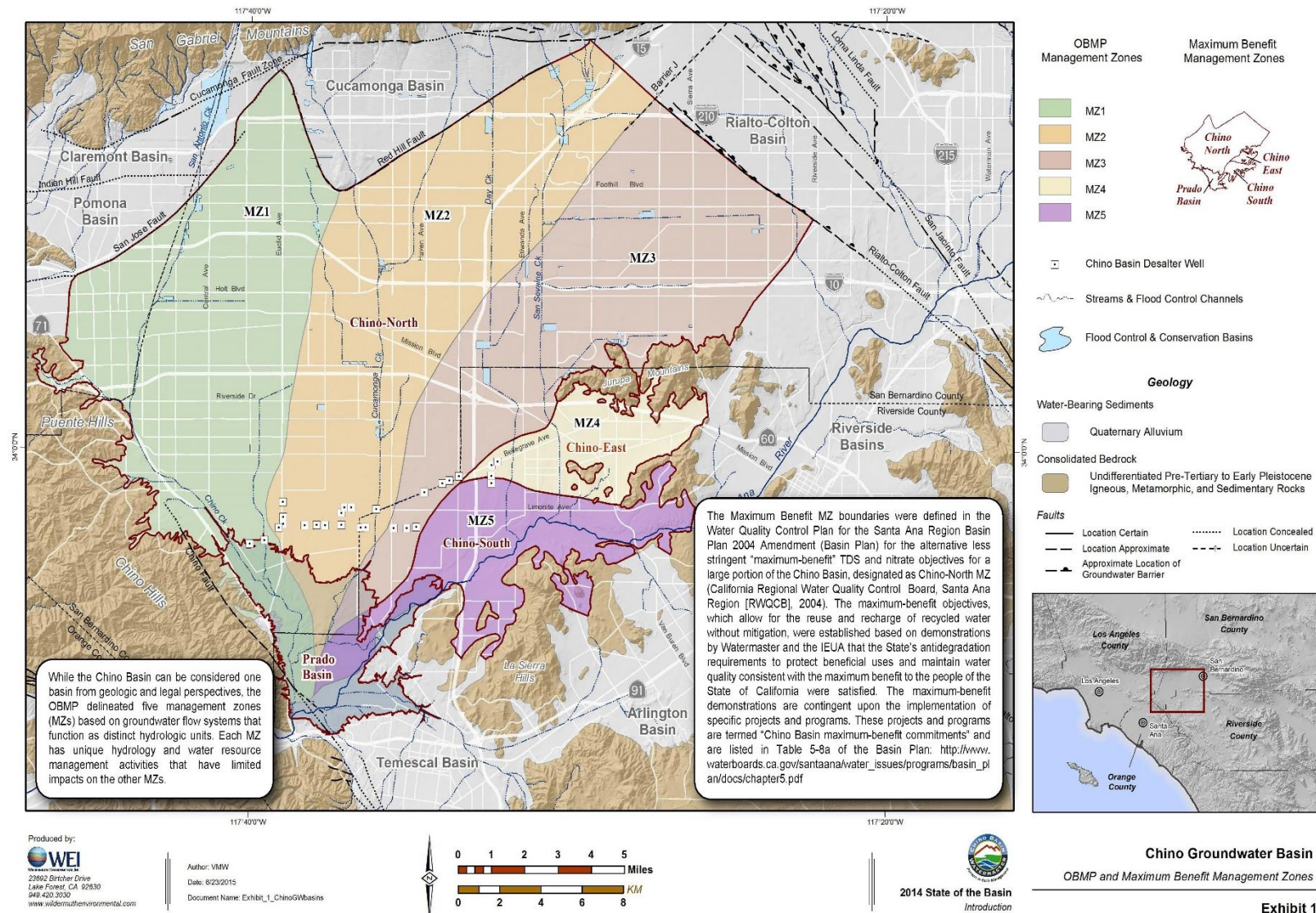
Table 6-1 presents the amount of groundwater pumped over the previous five years. Since the implementation of OBMP in 2000, desalter pumping has commenced and has progressively increased. The objective is to pump 40,000 AFY.

Table 6-1 Wholesale: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type	Location or Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	Chino Basin	29,106	28,471	27,820	29,932	29,502
<b>TOTAL</b>		29,106	28,471	27,820	29,932	29,502
NOTES:						

### 6.2.6 Groundwater Projected to be Pumped

Total groundwater projected to be pumped starting in 2016 through year 2040 averages 40,000 AFY. The brine waste is a significant quantity reducing total production of potable water to 35,200 AFY.

**Figure 6-1. Chino Groundwater Basin**



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### **6.3 Surface Water**

Surface water is not available to CDA.

### **6.4 Stormwater**

Stormwater is not available to CDA. However, the region has implemented and continues to develop programs to increase stormwater recharge in the Basin.

### **6.5 Wastewater and Recycled Water Opportunities**

Recycled water is not available to CDA as noted in Tables 6-2 and 6-3. Recycled water provides a reliable and drought proof water source which is currently supplied in the region to reduce reliance on imported supplies. Recycled water from the IEUA Regional Water Recycling facilities produces Title 22 quality that is suitable for all water needs except direct potable use; this valuable commodity is now available to many of the CDA member agencies.

Table 6-2 (DWR Table 6-3 Wholesale): Wastewater Treatment and Discharge Within Service Area in 2015										
<input checked="" type="checkbox"/>	Wholesale supplier neither distributes nor provides supplemental treatment to recycled water. The supplier will not complete the table below.									
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
Total							0	0	0	0
NOTES:										

Table 6-3 (DWR Table 6-4 Wholesale): Current and Projected Retailers Provided Recycled Water Within Service Area							
<input checked="" type="checkbox"/>	Recycled water is not directly treated or distributed by the supplier. The supplier will not complete the table below.						
Name of Receiving Supplier or Direct Use by Wholesaler	Level of Treatment	2015	2020	2025	2030	2035	2040 (opt)
Add additional rows as needed							
Total		0	0	0	0	0	0
NOTES:							

As presented in Table 6-4, CDA's 2010 UWMP did not include a projection of recycled water use.

Table 6-4 (DWR Table 6-5 Wholesale): 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual		
<input checked="" type="checkbox"/>	Recycled water was not used or distributed by the supplier in 2010, nor projected for use or distribution in 2015. The wholesale supplier will not complete the table below.	
Name of Receiving Supplier or Direct Use by Wholesaler	2010 Projection for 2015	2015 actual use
<i>Add additional rows as needed</i>		
	0	0
<b>Total</b>	0	0
NOTES:		

## 6.6 Desalinated Water Opportunities

Desalinated water is not available to CDA.

## 6.7 Exchange or Transfer Opportunities

Exchanges and transfers are not available to CDA because CDA simply produces water for its members, but its members can transfer water. The OBMP and the Peace Agreement provide for interagency transfer of water. Watermaster accounts for transfers of stored water between agencies.

Although CDA does not have the ability to exchange or transfer water, it could sell "excess" product water. With interconnections at the respective desalters, CDA has the capability of transferring "excess" water produced by the desalters. CDA is required by the JPA to produce a minimum of 35,200 AFY of desalted product water, however, surplus water available from the desalters may be sold by CDA. The price of desalted water delivered from the facilities is a uniform per acre-foot amount for all CDA members (Purchasers), and will be set to recover all fixed and variable cost incurred by CDA. Also, there are no additional costs for wheeling or transportation of water made available by CDA to each Purchaser's designated point of delivery.

The price of desalted water sold to entities which are not Purchasers and which have not become members of the CDA shall be determined by the sole discretion of the CDA Board. Thus, water wheeled to outside agencies is accomplished by the CDA Board and not by an individual CDA member. Members of the Watermaster Appropriative Pool and the State of California have the first priority right to purchase "excess" desalted water developed by Chino II Desalter and the

Chino I Expansion on an equal basis, pursuant to a water supply contract. The terms and conditions for the purchase or sale of water from the Chino I Desalter are provided through separate agreement.

## 6.8 Future Water Projects

### 6.8.1 CDA Projects

No new water projects or supply programs are being considered for CDA implementation at this time, as presented in Table 6-5. New technology is being researched that could increase the desalter waste recovery from 88 percent to 99.6 percent in the future, creating additional high quality drinking water up to 4,600 AFY, but the technology has not yet been developed. IEUA and WMWD are pursuing regional water supply projects and programs to increase the reliability of imported supplies and augment supplies with more regional projects.

Table 6-5 (DWR Table 6-7 Wholesale): Expected Future Water Supply Projects or Programs						
<input checked="" type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?	Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency	
<i>Add additional rows as needed</i>						
NOTES:						

### 6.8.2 Regional Agency Projects

There are no regional agency projects that directly pertain to the CDA Desalters. The IEUA and WMWD 2015 UWMPs discuss a number of water supply opportunities they are considering or are pursuing to enhance supplies in the region, including transfers and exchanges, further uses of local recycled and stormwater supplies, and recharge projects that enhance the conjunctive use capabilities of Chino Basin.



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## 6.9 Climate Change Impacts to Regional Supplies

Climate change and or greenhouse gas emissions are considered in city and county general plans, California Environmental Quality Act documents, and integrated regional water management plans. By considering potential water supply impacts resulting from climate changes in its UWMP, CDA integrates this UWMP with these documents and supports water management functions.

Because climate change is such a gradual process, it can be difficult to distinguish the changes described below from the usual variability in supplies and demands. However, MWD is increasing its water supply options to compensate for SWP and Colorado River reductions.

### 6.9.1 Imported Supply Impacts

According to the Public Policy Institute of California,

“...Air temperatures are projected to increase throughout the state over the coming century. Sea level is expected to rise 39 to 55 inches by 2100, and the frequency of extreme events such as heat waves, wildfires, floods, and droughts is expected to increase. Higher temperatures will result in more rain and less snow, diminishing the reserves of water held in the Sierra Nevada snowpack.”(PPIC, 2011)

The following impacts are anticipated to impact the region’s imported supply, resulting in reduced SWP deliveries and supply outages. MWD is anticipating these impacts and is diversifying its supply portfolio and increasing groundwater banking to compensate for reduced SWP deliveries. CDA members IEUA and WMWD contract with MWD for SWP supplies.

- An increase in average surface temperatures of 5.5 to 10.4 degrees Fahrenheit is anticipated by the end of the century, resulting in up to four times as many heat wave days in urban centers.
- Heat waves will increase in frequency, magnitude, and duration.
- Longer, drier, and more frequent periods of droughts anticipated with up to 2.5 times the number of critically dry years by the end of the century. Modest changes in precipitation can have a large impact on runoff. Lower inflows will make it more difficult to repel salinity in the Sacramento River - San Joaquin River Delta (Delta).
- About 25 to 40 percent of the Sierra snowpack may be lost by 2050. Higher temperatures increase the ratio of rain to snow, accelerate the rate of spring snowmelt, and shorten the overall snowfall season, leading to more rapid and earlier seasonal runoff.
- Over 55 percent increase in risk of large wildfires is anticipated. Fires result in changes in vegetation and eventually a reduction in water supply and storage capacity in the Sierras.

- 
- More severe (e.g., frequency, intensity) and warmer winter storms are likely to occur, increasing runoff and flooding which could cause Delta levee failure.
  - Increased tidal salinity intrusion to the Delta from sea level rise, lower inflows, and Delta levee failures. Without major changes to in-Delta facilities, more fresh water will be needed to repel seawater and maintain water quality standards, especially during drier years.
  - Degraded water quality of Delta supplies is anticipated due to changing temperatures, flows, runoff rates and timing, and the ability of watersheds to assimilate wastes and pollutants. Lower Delta inflows during certain times of the year will degrade water quality by increasing temperatures and minimizing the dilution effects of runoff and wastewater discharges. Warmer water can accelerate some biological and chemical processes, increasing growth of algae and microorganisms. Higher winter flows will increase contaminant loadings from nonpoint sources. Intense rainfall following wildfires can degrade water quality. (Santa Barbara, 2009)

Since winter snowpack in the Sierra Nevada functions as a major water storage system, this will have serious consequences to annual supply availability in all systems that rely on the runoff. These impacts to statewide water supplies originating from the Delta watershed, as well as current flood control practices on Sierra Nevada reservoirs, will reduce MWD's supplies from the SWP. In addition, flooding in the Delta could have devastating impacts on the reliability of Delta exports with supply outages anticipated for up to one year.

WMWD contracts with MWD for Colorado River imported supplies. Colorado River flows are anticipated to decrease by 5 to 20 percent in the next 40 years, according to Brad Udall, director of the University of Colorado Western Water Assessment. Earlier runoff and lower flows from the Rocky Mountains later in the year are also anticipated (Zeilinski, 2010).

### **6.9.2 Groundwater Supply**

The conjunctive use management of the Basin will take on even greater importance under climate change conditions. Increased quantities of surface water may be needed to recharge the Basin, and with more frequent and more intense heat waves and extended dry periods, resources will be depleted with an increase in demands for those resources. With the reduced Sierra snowpack, groundwater storage throughout the state will be more important as early thaws will require new storage facilities.



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## 6.10 Summary of Existing and Planned Sources of Water

Table 6-6 presents the groundwater supply utilized by CDA in 2015. Table 6-7 presents the groundwater supply available to CDA in the future.

Table 6-6 (DWR Table 6-8 Wholesale): Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
		Actual Volume	Water Quality	Total Right or Safe Yield ( <i>opt</i> )
Groundwater		29,502	Drinking Water	40,000
<b>Total</b>		29,502		40,000
NOTES:				

Table 6-7 (DWR Table 6-9 Wholesale): Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply <i>Report To the Extent Practicable</i>									
		2020		2025		2030		2035		2040	
		Reasonably Available Volume	Total Right or Safe Yield <i>(opt)</i>	Reasonably Available Volume	Total Right or Safe Yield <i>(opt)</i>	Reasonably Available Volume	Total Right or Safe Yield <i>(opt)</i>	Reasonably Available Volume	Total Right or Safe Yield <i>(opt)</i>	Reasonably Available Volume	Total Right or Safe Yield <i>(opt)</i>
Groundwater	Chino Basin	40,000		40,000		40,000		40,000		40,000	
Total		40,000		40,000		40,000		40,000		40,000	
NOTES:											



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## Chapter 7 - Water Supply Reliability Assessment

During the past decade, Southern Californians have faced significant challenges to their water supply. Water supply reliability for CDA is discussed here.

### 7.1 Constraints on Water Sources

Most water supplies are influenced by legal, environmental, water quality, and climatic factors. The Chino Basin Desalter supply is not influenced by these factors because the program's primary purpose is to maximize the extraction of poor quality water from the lower basin and treat it, for water quality management purposes.

Groundwater in the lower Chino Basin historically has exceeded California Code of Regulations, Title 22 mandated objectives for TDS (salinity or salt) and nitrogen (nitrate). In addition to TDS and nitrates, VOCs have also been detected in Basin groundwater. The purpose of the CDA facilities is to remove this groundwater from the basin and treat it with advanced water treatment processes and produce potable water for delivery to its member agencies.

### 7.2 Reliability by Type of Year

Climatological data in California has been recorded since the year 1858. During the twentieth century, California experienced four periods of severe drought: 1928-34, 1976-77, 1987-92, and 2012-current. The 2012-current event is the driest four-year period of statewide precipitation, with climate records set for average temperatures. The 1976-77 drought is considered to be the driest year of record in the Four Rivers Basin by DWR. These rivers flow into the Delta and are the source waters for the SWP, thus 1976-77 was MWD's selection as the single driest base year. However, Southern California sustained few adverse impacts from the 1976-77 drought, due in large part to the availability of Colorado River water and groundwater stored in the Basin. The 1987 to 1992, 2000 to 2003, 2007 to 2009, and 2012-current droughts had a greater impact on Southern California and the Inland Empire.

To analyze the variability of reliability due to climate, hydrologic conditions that define year types were determined. Year 2014, identified in Table 7-1, reflects all these year types: average, single dry year, and multiple dry years because of the 100 percent reliability of the groundwater supply. Reliability is based on the OBMP goal of extracting 40,000 AFY from the Basin for water quality management purposes.

Table 7-1 Wholesale: Basis of Water Year Data			
Year Type	<b>Base Year</b> <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP.
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2014	40,000	100%
Single-Dry Year	2014	40,000	100%
Multiple-Dry Years 1st Year	2014	40,000	100%
Multiple-Dry Years 2nd Year	2014	40,000	100%
Multiple-Dry Years 3rd Year	2014	40,000	100%
NOTES: Base year of 2014 for all year types based on the OBMP goal of extracting 40,000 AFY from the lower basin for water quality management purposes.			

## 7.3 Supply and Demand Assessment

An assessment of CDA's water supply reliability during each of the water year types for the next twenty-five years is presented here. CDA is capable of meeting its member agencies' purchase requests in all hydrologic year types through 2040.

### 7.3.1 Authority Capabilities: Normal Year

Average water year availability for the CDA Desalters was compared to projected demands (product water plus brine waste) through 2040 and is presented in Table 7-2. The average year supplies summarized in Table 7-1 indicate that supplies will be available to meet District demands during a normal water year.

Table 7-2 Wholesale: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply totals (autofill from Table 6-9)	40,000	40,000	40,000	40,000	40,000
Demand totals (autofill from Table 4-3)	40,000	40,000	40,000	40,000	40,000
Difference	0	0	0	0	0
NOTES:					

### 7.3.2 Authority Capabilities: Single Dry Year

Supplies and demands for the CDA Desalter were analyzed to determine impacts associated with a single dry year. The projected single dry year water supply presented in Table 7-3 is based on 100 percent availability of the groundwater. Table 7-3 indicates that the region can provide a reliable water supply for the Desalters under the single driest year hydrology.

Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply totals	40,000	40,000	40,000	40,000	40,000
Demand totals	40,000	40,000	40,000	40,000	40,000
Difference	0	0	0	0	0
NOTES:					

### 7.3.3 Authority Capabilities: Multiple Dry Years

Supplies and demands for the CDA Desalters were analyzed to determine impacts associated with multiple consecutive dry years. The projected multiple dry year water supply is based on 100 percent availability of the source, as discussed under the single dry year scenario. The groundwater supply total for the 25 year period is presented in Table 7-4 for the multiple dry year scenario. A comparison is provided of projected multiple dry year supply availability to the multiple dry year water demands on the Desalter. Table 7-4 demonstrates that the region can provide reliable water supplies to the CDA Desalter under the multiple dry year hydrology.

Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040
First year	Supply totals	40,000	40,000	40,000	40,000	40,000
	Demand totals	40,000	40,000	40,000	40,000	40,000
	Difference	0	0	0	0	0
Second year	Supply totals	40,000	40,000	40,000	40,000	40,000
	Demand totals	40,000	40,000	40,000	40,000	40,000
	Difference	0	0	0	0	0
Third year	Supply totals	40,000	40,000	40,000	40,000	40,000
	Demand totals	40,000	40,000	40,000	40,000	40,000
	Difference	0	0	0	0	0
NOTES:						

## 7.4 Regional Supply Reliability

One of the Authority's purposes is to produce a local water supply which reduces the need for imported water into the region. As discussed previously, various water management tools and options are being implemented by CDA member agencies and IEUA and WMWD as wholesalers. These tools and options are intended to maximize the use of local water resources and minimize the need for imported water in the region.

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## Chapter 8 – Water Shortage Contingency Planning

Groundwater is a relatively stable source of supply that is not as impacted by climate or other causes of potential water shortage which are common to surface water supplies. Although Chino Basin could be impacted by climatic factors discussed in Chapter 7, CDA's purpose is to pump for Basin water quality benefits, therefore serving as a base load and a very reliable water source for CDA member agencies. For example, during June 2004, imported water deliveries were interrupted when there was an unplanned shutdown of the Rialto Feeder pipeline for repairs. The Chino I Desalter was in full operation, producing 8 mgd. The CDA member agencies Chino and Chino Hills did not suffer a water shortage. Retail agencies in the northern Chino Basin did experience a water shortage. CDA member agencies curtailed their overall water usage as directed by the wholesale agencies (IEUA and WMWD) because of the reduction in other supplies.

Because of the highly reliable groundwater source and the need to continue pumping salts and nitrates from the basin, CDA has not needed to adopt a water shortage contingency plan to respond to emergencies or other external events. Table 8-1 reflects this unique situation. The wholesale member agencies of IEUA and WMWD have approved water shortage programs with stages of action, mandatory prohibitions, consumption reduction methods, penalties or charges for excessive use, revenue and expenditure impacts, and mechanisms to determine actual reductions, which are outlined in each of their UWMPs.

Table 8-1 Wholesale: Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Supply Reduction <sup>1</sup>	Water Supply Condition (Narrative description)
Permanent	0%	Year Round
Level 1 Alert	0%	Shortage or threat of supply shortage
Level 2 Warning	0%	Shortage or threat of supply shortage
Level 3 Emergency	0%	Shortage or threat of supply shortage
<sup>1</sup> One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES: Because the groundwater supply continues to be pumped during shortages for basin water quality management (including years with a surface water shortage of 50%), there is no curtailment of supply. These rationing stages are managed by the wholesale agencies of IEUA and WMWD as described in their UWMPs.		



---

## **8.1 Stages of Action**

Stages of action to identify shortage triggers are provided by IEUA and WMWD. There is no curtailment of CDA supply during dry years, including very dry years and years with a surface water shortage of 50 percent. This is because the groundwater supply will continue to be pumped for basin water quality management. Rationing stages during shortages are managed by the wholesale agencies of IEUA and WMWD, as described in their UWMPs.

## **8.2 Consumption Reduction Methods**

Consumption reduction methods, in the most restrictive stages of a shortage, to be used to reduce water demands within the member agencies' service areas are identified and implemented by IEUA and WMWD. Information on these methods can be found in their respective UWMPs. The CDA does not have a water shortage contingency plan because of its unique role as desalter of groundwater for water quality management purposes.

## **8.3 Determining Water Shortage Reductions**

IEUA and WMWD will determine the triggers of shortages and methods to measure the reduction of water use within their member agency's service areas. CDA is not involved in how each member agency measures water savings; its product water supply is provided based on a contractual amount, not based on agency demands.

## **8.4 Revenue and Expenditure Impacts**

There are no shortages of CDA produced water supply anticipated as a result of the implementation of other agency water supply contingency plans. Because the member agencies have "take or pay" agreements for their entitlement to desalter product water, the revenues are constant, as are the expenditures.

Only a catastrophic interruption of water supplies would have an effect on CDA's expenditures because of the highly reliable supply it produces. Expenditures may increase as damage to the desalter system requires emergency repairs. Expenditures may also go down as less water is pumped so power costs are lower, and water treatment chemicals and operational costs are reduced because less water is treated.

## **8.5 Regional Shortage Planning**

In February 2008, in anticipation of possible water supply shortages, the MWD Board of Directors adopted the Water Supply Allocation Plan (WSAP). The WSAP provides guidance for allocating limited water supplies to MWD member agencies should the need arise. MWD continues to closely monitoring water supply conditions.

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IEUA and WMWD developed Drought Plans for the purpose of implementing the WSAP within the IEUA and WMWD service areas, in a manner that is fair and equitable to their member agencies. The IEUA and WMWD Drought Plans are consistent with and supplement the WSAP for specific IEUA/WMWD service area drought planning issues. All WSAP definitions, policies, principals, and program provisions are incorporated here by reference and are considered to be a part of the IEUA and WMWD Drought Plans. For example, if IEUA is not imposed a penalty from MWD then IEUA would not impose a penalty on a member agency within IEUA's service area. In addition, MWD does not allow resale or "marketing" of WSAP allocation credits and IEUA will not allow IEUA Drought Plan credits to be sold internally within IEUA's service area or externally without IEUA's approval. The adopted Drought Plans and WSAP are provided in IEUA and WMWD's 2015 UWMPs.

IEUA and WMWD Drought Plans are consistent with and contribute to the existing IEUA/WMWD imported water policies and programs. For example, both plans encourage development and full utilization of local water resources, such as recycled water and conservation measures. The IEUA Drought Plan also address MWD's Chino Basin Groundwater Storage Dry Year Yield (DYY) program and the need for best management of DYY program "shift" obligations concurrent with WSAP reductions of imported water supplies to IEUA/WMWD.

## **8.6 Resolution or Ordinance**

CDA does not have a water shortage contingency plan ordinance or resolution due to its unique role as a desalter of impaired groundwater.

## **8.7 Catastrophic Supply Interruption**

The most likely event triggering a catastrophic supply interruption would be a regional power outage, or damage associated with an earthquake. The District can work around both planned and unplanned power outages. In the event of an unplanned power outage affecting one or both of the desalters, backup generators would be utilized to restore power on a temporary basis. The mobile generators that CDA owns or can obtain quickly from neighboring agencies would be transported to key locations to allow for water to be pumped, treated, and delivered to the agencies.

The Chino Desalters serve as a major potable water backup source in the Basin. With the CDA Agreement of September 21, 2001 and the Mutual Aid Agreement of April 21, 2004, water can also be wheeled to agencies outside the CDA service area.

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### **8.7.1 MWD Interruption**

Southern California's three imported water supplies (SWP, Colorado River Aqueduct, and the Los Angeles Aqueduct) cross the San Andreas Fault. Many other fault lines bisect major water facilities throughout the region. Experts consider it likely that one or more of these supplies will be disrupted in the event of a major earthquake.

MWD estimates that restoring service on any of these facilities following a catastrophic outage could take up to six months. This, in turn, could reduce annual deliveries by up to 50 percent for MWD supplied water. The UWMP Act requires agencies to consider the effect of a 50 percent cutback in water supplies. This corresponds approximately to the degree of cutback contemplated by MWD's earthquake disruption scenario.

In 2000, IEUA updated its 1996 emergency response plan for its service area. IEUA expects to meet emergency demands within the region through extraordinary conservation and groundwater pumping measures. Multiple sources of power exist within the service area, making any electrical shortages a temporary disruption (see IEUA 2015 UWMP for details on its Water Shortage Contingency Plans).

WMWD participated in the Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) for the Riverside Operational Area to identify and plan for local hazards. Identified hazards include earthquakes, flooding, hazardous material incidents, power losses, extreme weather, and terrorism. Using knowledge through the Local Hazard Mitigation Plan, WMWD then adopted its Emergency Response and Recovery Plan in January, 2005. This document is designed to prepare WMWD for a planned response to emergency situation as associated with natural disasters, technological incidents, and national security emergencies in, or affecting, and water/wastewater utility facility in its service area (see WMWD 2015 UWMP for additional details).

### **8.7.2 Mutual Aid**

According to the Mutual Aid Agreement between IEUA and Regional Contracting Agencies, signed April 21, 2004, the cities of Chino, Chino Hills, Fontana, Montclair, Ontario, and Upland, and Cucamonga Valley Water District and IEUA agreed that, in the event of any disruption or damage to the ability of either the IEUA or Regional Contracting Agencies to continue to serve the public or its customers with water service, sewage service, or sewage treatment service, the other party will cooperate to the maximum extent possible (as determined in its discretion) to provide mutual aid assistance as requested.

This Agreement provides for mutual aid assistance when requested by an agency or agencies in the event of any disruption or damage to any agency's infrastructure. This includes even the

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delivery of water from one agency's system to another under catastrophic conditions or during drought periods. See Appendix H for additional information.

WMWD developed a similar mutual aid agreement with the retail agencies in its service area. When an agency determines that it cannot meet its needs on its own, it can request assistance from other agencies. The assistance needed could be equipment, materials, or personnel. Each agency will participate at its discretion; however, no agency shall be required to deplete unreasonable amounts of its own resources, facilities, and services in furnishing such mutual aid.

## 8.8 Minimum Supply Next Three Years

Table 8-4 presents CDA's minimum supply availability for the next three years under the multiple dry year scenario. The groundwater supply is considered to be 100 percent reliable, as discussed in Chapter 7.

Table 8-2 (DWR Table 8-4 Wholesale): Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	40,000	40,000	40,000
NOTES: From Table 7-4 for 2020 multiple dry year scenario.			



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## Chapter 9 - Demand Management Measures

### 9.1 Demand Management Measures

CDA is in a unique situation: its purpose is to produce a desalinated product water for its member agencies. The member agencies then deliver it to their customers through their individual retail distribution systems. Producing this supply removes salts and nitrates from the groundwater basin and prevents highly saline groundwater from reaching the Santa Ana River. In exchange, the member agencies receive a highly reliable drinking water supply and reduce their dependence on MWD's imported supplies.

In addition to being a member of CDA, the retail member agencies are also a member of one of two wholesale water agencies: IEUA or WMWD. Together they provide conservation and other outreach services for their member agencies and the region. Demand management measures (DMMs) are implemented by these two wholesale agencies, as well as by the individual retail agencies. CDA does not have a conservation program because conservation activities are being planned and implemented by IEUA and WMWD's regional water use efficiency and outreach programs that enhance retail agency programs.

Conservation is an important component of water resources management for the member agencies. A variety of specific programs and educational approaches have been undertaken by IEUA and WMWD to encourage greater participation and awareness of the need for conservation and to help retail water agencies meet their water management goals. The various programs include ultra-low flush toilet exchange, high efficiency appliances rebates, commercial rebates, landscape audits, water awareness and education, weather based irrigation controller programs, among others. Detailed information regarding these programs are summarized in their 2015 UWMPs.

IEUA and WMWD are signatories to the Best Management Practices (BMP) Memorandum of Understanding (MOU) regarding Urban Water Conservation in California and are members of the California Urban Water Conservation Council (CUWCC). IEUA and WMWD have made the CUWCC BMPs the cornerstone of their respective conservation programs and a key element in the overall water resource management strategy for the region.

Members of CUWCC are required to provide BMP Activity Reports every two years. These reports provide specific details of IEUA and WMWD's efforts to implement each particular BMP. The Act allows an agency to provide the BMP Activity Report in-lieu of describing the DMMs. Therefore, IEUA and WMWD have both included their most recent BMP Activity Reports in their respective 2015 UWMPs.

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The CDA member agencies, along with IEUA and WMWD, have developed a strong working accord over the past ten years and accomplished the following as a result of the planning process.

- Agreement on a regional strategy to focus on landscape water use efficiency as well as a portfolio of regional programs;
- Completion of a documented plan that provides the implementation steps necessary to launch the programs as well as clearly defined roles/responsibilities between IEUA, WMWD, and the retail agencies; and,
- Commitment from IEUA and WMWD to administer the regional programs with retail agencies responsible for implementing and possibly augmenting programs within their individual service areas.

The DWR Guidelines require, for a wholesale UWMP, a narrative description of the following subjects.

#### **9.1.1 Metering**

The District meters the product water supply at each member agency turnout.

#### **9.1.2 Public Education and Outreach**

Public education and outreach programs are administered by IEUA and WMWD for its member agencies which include CDA's member agencies. This ensures thorough coverage and consistent messaging.

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

CDA does not have water conservation program staff. IEUA and WMWD, as well as their member agencies which include CDA member agencies, each have water conservation program staff administering the extensive programs.

#### **9.1.4 Other Demand Management Measures**

The implementation of demand management measures are administered by IEUA and WMWD for its member agencies which include CDA member agencies.

#### **9.1.5 Asset Management**

The Authority manages its assets long term through the Capital Improvement Program. Renewal and replacement activities are anticipated and budgeted. Short term asset management is handled through preventive and corrective maintenance programs for the desalters.

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### **9.1.6 Wholesale Supplier Assistance Programs**

Wholesale supplier assistance programs are administered by IEUA and WMWD for its member agencies, which include CDA's members. Over the years, IEUA and WMWD member retail agencies have dramatically increased local conservation programs from a minimal ultra-low flush (ULF) toilet distribution program.

## **9.2 Implementation over the Past Five Years**

CDA has not implemented any DMMs during the past five years due to its single role as a desalted water wholesaler, providing water to its member agencies. The member agencies are implementing demand management measures.

## **9.3 California Urban Water Conservation Council**

IEUA and WMWD are signatories to the BMP MOU as described in Section 9.1. As signatories, IEUA and WMWD will continuously develop new conservation programs over the next 25 years to meet the requirements of each of the BMPs. In 2008, WMWD adopted a Water Use Efficiency Master Plan and IEUA regularly updates its Regional Water Use Efficiency Business Plan, both of which plan for the expansion of programs within their service areas. Developing technology, opportunities, and funding will dictate the direction of these programs in both service areas. Additional information on water conservation outreach and efforts is contained in the IEUA UWMP, WMWD UWMP, and each CDA retail agency UWMP.



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## **Chapter 10 – Plan Adoption, Submittal, and Implementation**

This chapter discusses the UWMP adoption, submittal, and implementation process. It is organized to reflect the 2015 UWMP Guidebook sections and requirements to aid DWR in its review.

### **10.1 Inclusion of 2015 Data**

Data provided in this UWMP reflects fiscal years ending June 30 or each year. Data utilized is current through the end of the last full year – June 30, 2015.

### **10.2 Notice of Public Hearing**

To provide the public opportunities to participate in the UWMP process, CDA provided notification of the preparation of the updated document and public noticing of the public hearing, as described here. These steps were consistent with all California Water Code requirements for notification of availability of this document in its draft and final forms.

#### **10.2.1 Notice to Cities and Counties**

During the preparation of this UWMP, CDA notified cities and counties and water suppliers, of its UWMP preparation and public hearing date, 60 days prior to the public hearing. The public hearing was held June 2, 2016 at a special Board of Directors meeting. A draft version of the UWMP was sent to the cities and counties listed below approximately 30 days prior to the public hearing for review and comment. Both notifications included the time and place of the public hearing.

Table 10-1 provides a list of the cities and counties that received the 60 day as well as the public hearing notification. The cities of Chino, Chino Hills, Norco, and Ontario are also CDA member agencies. The cities of Eastvale and Jurupa Valley and the counties of San Bernardino and Riverside are not members.

Table 10-1 Wholesale: Notification to Cities and Counties (select one)		
<input type="checkbox"/>	Supplier has notified more than 10 cities or counties in accordance with CWC 10621 (b) and 10642. <b>Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.</b>	
	Provide the page or location of this list in the UWMP.	
<input checked="" type="checkbox"/>	Supplier has notified 10 or fewer cities or counties. <b>Complete the table below.</b>	
City Name	60 Day Notice	Notice of Public Hearing
Chino	X	X
Chino Hills	X	X
Eastvale	X	X
Jurupa Valley	X	X
Norco	X	X
Ontario	X	X
County Name	60 Day Notice	Notice of Public Hearing
San Bernardino County	X	X
Riverside County	X	X
NOTES: City Managers and County Administrators were notified.		

In addition to the cities and counties within the member agency retail service areas, Table 10-2 identifies other agencies notified of the preparation of this UWMP and the public hearing. Those entities include the member agencies and other interested parties.

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**Table 10-2: Notification to Other Entities**

Other Entities Contacted	60 Day Notice	Notice of Public Hearing
City of Chino Public Works	X	X
City of Chino Hills Public Works	X	X
City of Norco Public Works	X	X
City of Ontario Public Works	X	X
Inland Empire Utilities Agency	X	X
Jurupa Community Services District	X	X
Santa Ana River Water Company	X	X
Western Municipal Water District	X	X
NOTES: Member agencies and others were notified in addition to those listed in Table 10-1.		

### 10.2.2 Notice to the Public

CDA encouraged public participation in the UWMP development process through the noticing of the public hearing and by encouraging the review of the draft document. Availability of the draft UWMP and a legal notice of the public hearing was provided prior to the June 2, 2016 public hearing held at a Board of Director's meeting. The public hearing notice provided the time and place of the hearing as well as the location where the UWMP was available for public review (Authority headquarters) during normal business hours. This notice was published in the Inland Valley Daily Bulletin and Press Enterprise on May 2, 2016 and May 9, 2016 (once a week for two consecutive weeks with at least five days between each notice.)

### 10.3 Public Hearing and Adoption

The public hearing was held at a special Board of Director's meeting on June 2, 2016 at 6:00 p.m. located at the City of Ontario City Council chambers. The adoption of the plan occurred following the public hearing at the same meeting.

Documentation of the letters notifying the public and agencies, along with public notices of the hearing encouraging the involvement of various community groups, letters of correspondence, and the adoption resolution are included in Appendix I.

---

## **10.4 Plan Submittal and Availability**

The draft UWMP was made available for public review before the public hearing; the adopted plan was made available for public review during normal business hours for at least 30 days following adoption. The adoption resolution is provided in Appendix I.

The final 2015 UWMP was provided electronically to DWR, California State Library, the cities and counties listed in Table 10-1, CDA member agencies and others listed in Table 10-2. The report was provided within 30 days after adoption. DWR received the adopted UWMP text and the data tables electronically through the WUEdata online submittal tool that DWR developed. CDA submitted a CD of the adopted 2015 UWMP to the California State Library within 30 days of adoption.



# SAN ANTONIO WATER COMPANY

## 2015 URBAN WATER MANAGEMENT PLAN

JUNE 2016



PREPARED BY

*Celebrating*  
**30 Years**  
1986 - 2016

**CIVILTEC**  
engineering inc.



# **San Antonio Water Company 2015 Urban Water Management Plan**

PREPARED FOR

SAN ANTONIO WATER COMPANY  
139 N. EUCLID AVENUE  
UPLAND, CA 91786

JUNE 2016

PREPARED BY



CIVIL AND ENVIRONMENTAL ENGINEERING  
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# **San Antonio Water Company 2015 Urban Water Management Plan**

PREPARED FOR

SAN ANTONIO WATER COMPANY  
139 N. EUCLID AVENUE  
UPLAND, CA 91786

JUNE 2016



Under the Supervision of:

A handwritten signature in blue ink, appearing to read "C. Shem Hawes", written over a horizontal line.

C. SHEM HAWES, P.E.

69578  
C.E.





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<sup>1</sup> Appendices are under a separate cover:  
San Antonio Water Company 2015 Urban Water Management Plan, Volume 2 – Appendices



## **PREPARER AND COMPANY CONTACT INFORMATION**

**Date UWMP was adopted by San Antonio Water Company:** June 21, 2016

**Date UWMP was submitted to Department of Water Resources:** June 30, 2016

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## EXECUTIVE SUMMARY

### Background

This Urban Water Management Plan (UWMP) for the San Antonio Water Company (SAWCo) has been prepared in accordance with the California Urban Water Management Planning Act and the California Water Conservation Act as mandated in the California Water Code for urban water suppliers.

In addition to compliance with State mandate, this UWMP is a living document whose contents fulfill a variety of planning, informational and legal requirements. It will serve as a primary source for integrated water and land use planning at the purveyor, city and county levels per compliance with SB 610 and SB 221 related to water assessment and procurement of water supplies prior to construction of new development. The accuracy, clarity, completeness and usefulness of this UWMP is defensible and representative of SAWCo's best understanding of the state of water management at the time of adoption. To that end, all aspects of water management as they pertain to SAWCo have been delineated in order to provide developers, planners, government agencies and its shareholders with the tools they need to fulfill their individual missions and interests.

The State believes that the responsibilities of a water wholesaler and a water retailer are significantly different with respect to water use efficiency since only the water retailer deals directly with end users and can more easily leverage this relationship to encourage the changes in behavior necessary to prevent water waste and to promote water conservation. SAWCo serves as both a retailer and wholesaler; however, the State obligates each water supplier to declare its status on this matter. The State has developed the following threshold for urban retail water suppliers: any water supplier that provides water to more than 3,000 end users or supplies more than 3,000 acre-feet per year (AFY) at retail is classified as an urban retail water supplier. In SAWCo's case and by definition, neither the number of retail accounts nor the volume of retail deliveries exceeds this threshold; therefore, the status of "urban wholesale water supplier" has been adopted for purposes of complying with the Water Code. A legal opinion was provided to this effect by Nossaman, LLP in concurrence with this determination by **CIVILTEC Engineering, Inc. (Civiltec)**, the consultant responsible for the preparation of this UWMP.

It should be noted that classification as an "urban wholesale water provider" is a departure from the preparation of SAWCo's 2005 UWMP, and SAWCo has taken steps to make this status known, specifically to the California Urban Water Conservation Council (CUWCC), the Inland Empire Utilities Agency (IEUA), the various water retailers who are SAWCo shareholders and ultimately the California Department of Water Resources (DWR) through submittal of this UWMP. The specific requirements for SAWCo are more narrowly defined than for retail water suppliers and include certain exemptions as reflected in the presentation of this UWMP. Nonetheless, the disposition of SAWCo's retail and wholesale shareholders are described in detail since such delineation fulfills the planning and informational aspects of this UWMP.



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An exemption of note is that SAWCo is not required to prepare a water use reduction plan for compliance with those portions of the California Water Conservation Act aimed at improving water use efficiency through the calculation of baseline per capita water use and interim and compliance per capita water use targets. This is fortuitous since SAWCo delivers water on a per share basis and not on a per capita basis. The direct responsibility for implementation of per capita water use efficiency has been deferred to those shareholders who provide retail service. SAWCo is not exempted from using water efficiently, only from providing formal reporting and planning on the efficient use of water by end users.

Care was taken to present SAWCo as a corporation which functions according to, and is bound by, its Bylaws. The Bylaws, and their implementation, considered to be the most pertinent to preparing the various aspects of this UWMP are as follows:

*SAWCo Bylaws §1.0: The specific purpose of the corporation is to develop, distribute, supply, and deliver water to its shareholders for irrigation, domestic, and all other useful purposes, in proportion to the number of shares of stock held by them respectively, at actual cost, and is not organized for the private gain of any person.*

*SAWCo Bylaws §10.01: No water shall be supplied by company to anyone who is not a shareholder, and all water shall be supplied at cost. ...each shareholder shall be entitled to receive such part of the entire water of the company that is available for distribution as the number of shares of stock held by him bears to the number of shares outstanding.*

The Bylaws go on to specify the service area as being made up of a Basic Area and an Extended Area.

The Basic Area generally coincides with the community of San Antonio Heights which is located north of the City of Upland, in unincorporated San Bernardino County. SAWCo provides retail service to all end users who reside in the Basic Area.

The description of the Extended Area is considerably more vague, stated as “all lands not included in the Basic Area.” SAWCo has a limited number of retail customers in the extended area including the Upland Hills Golf Course, the Red Hill Golf Course, Holliday Rock Company and several grove irrigators. For purposes of this UWMP, all other water deliveries made in the Extended Area are for large landscape irrigation, industrial use, agricultural use, and wholesale customers.

### Conclusions

There are 6,389 outstanding shares. SAWCo will issue no more shares; therefore, the number of shares is finite. The “entire water of the company” is equivalent to 16,573.85 AFY which represents a 10-year average established in 2005. SAWCo reduced the water entitlement in 2014 and 2015 in response to the drought conditions and back-to-back dry years. Entitlement was reduced by 18% in March 2014 to 13,589 AFY. The entitlement





## EXECUTIVE SUMMARY

### SAN ANTONIO WATER COMPANY

was reduced an additional 15% in March 2015, setting the annual entitlement to 11,552 AFY. Typical water suppliers must account for growth and the associated increase in water demand within their sphere of influence; however, SAWCo does not directly experience or react to growth based on such external influences. As such, water use projections related to population growth and density, land use, zoning, development and other typical indicators have no bearing on SAWCo supply.

Water is supplied based on entitlement only. Entitlement is based on the number of shares held. Although finite in number, shares are a commodity which may be divided or sold, and are not tied to the land. For this reason, even though the “entire water of the company” is known, the distribution of entitlement among the shareholders has an unpredictable nature due to the liquidity of the shares. The water, the company is able to produce, is prorated to each shareholder owner. SAWCo believes the level of analysis required to project the distribution of entitlement over the specified planning horizon is beyond the scope of the intent of the Urban Water Management Planning Act. Therefore, projected supply has been presented in terms of total entitlement in AFY and AFY per share rather than in terms of the entitlement currently held by individual shareholders.

Water supply for SAWCo is a mixture of surface water from San Antonio Creek and groundwater from the San Antonio Tunnel and three adjudicated basins: Chino Basin, Cucamonga Basin and Six Basins.

The current and future development of SAWCo’s water supplies is limited to increasing the efficient management and capture of SAWCo’s existing surface water and groundwater rights. The State has determined that the development of recycled water is required to meet the overall goals of the California Water Conservation Act and has mandated that all water suppliers describe their efforts on this front. To that end, SAWCo does not have the sewer treatment facilities to provide recycled water but is encouraging the use and development of recycled water sources through coordination with the IEUA and its member agencies. Of note is the potential conversion to recycled water use of two golf courses, two rock companies and various agricultural water users. This will have the indirect impact of freeing up SAWCo supplies currently used by these shareholders for use elsewhere.

SAWCo must provide details on the reliability of its supplies under three conditions mandated by the State: normal-year, single-dry-year and multiple-dry-year. Analysis of these conditions based on historical data revealed that under normal-year and multiple-dry-year conditions, the current total entitlement of 11,552 AFY is reliable.

Demand Management Measures (DMMs), also known as Best Management Practices (BMPs) by the CUWCC, have been developed by the State as methods for the systematic implementation of water conservation. As a signatory to the CUWCC Memorandum of Understanding regarding Urban Water Conservation in California, SAWCo refers to their adopted Best Management Practices (BMPs).





## CHAPTER ONE – INTRODUCTION

### 1.1 General Description of UWMP

The Urban Water Management Planning Act (Act) was adopted in 1983 and may be found in the California Water Code, §§10610-10656<sup>2</sup>. The San Antonio Water Company (SAWCo) is preparing and adopting this Urban Water Management Plan (UWMP) in the manner specified in the Act by virtue of meeting the statutory definition of an “urban wholesale water supplier”:

*§10608.12(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.*

SAWCo provides a current annual entitlement of 11,552 AFY including limited retail service to 1,220 accounts with an annual entitlement of 1,979 AFY as delineated in Table 1.

**Table 1 – Breakdown of Retail Entitlement**

Type of Retail Shareholder	Accounts	Entitlement (AFY)
Basic Area	1,210	1,139.11
Golf Courses	2	394.62
Rock Companies	1	246.81
Grove Irrigators	7	198.44
<b>Total Retail Entitlement</b>	<b>1,220</b>	<b>1,979</b>

The California Water Code provides the following definition of an “urban retail water supplier”:

*§10608.12(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.*

By definition, neither the number of retail accounts nor the volume of retail deliveries exceeds the threshold for classification as an “urban retail water supplier”; therefore, the status of “urban wholesale water supplier” has been adopted for purposes of complying with the Water Code. Appendix B includes a legal opinion to this effect. As an “urban wholesale water provider”, the specific requirements for SAWCo are more narrowly defined than for retail water suppliers and include certain exemptions as reflected in the

<sup>2</sup> California Urban Water Management Planning Act (2010), Water Code §10610-10656



presentation of this UWMP. The concept of entitlement as it relates to SAWCo is defined in §2.1.2.

The Act, and elements of the California Water Conservation Act of 2009, require all urban water suppliers to report, describe, and in some cases evaluate:

- water deliveries and uses
- water supply sources
- efficient water uses
- implementation strategy and schedule for demand management measures
- baseline, interim and compliance daily per capita water use
- water supply availability to meet existing and future demands
- water shortage and drought contingency planning

### 1.2 Purpose of UWMP

This 2015 UWMP for the SAWCo has been prepared in fulfillment of the requirements of the California Urban Water Management Planning Act (Act) and in compliance with the *2015 Urban Water Management Plans Guidebook for Urban Water Suppliers* (Guidebook) as provided by the California Department of Water Resources (DWR). The UWMP must be prepared every 5 years and submitted to DWR.

The Guidebook provides guidance respective to the minimum requirements of the California Urban Water Management Planning Act and the recent legislative changes and amendments embodied in the California Water Conservation Act of 2009 and AB 1420 which more narrowly defines eligibility for water management grants and loans.

In addition to compliance with state mandate, this UWMP is a living document whose contents fulfill a variety of planning, informational and legal requirements. It will serve as a primary source for integrated water and land use planning at the district, city and county levels per compliance with SB 610 and SB 221 related to water assessment and procurement of water supplies prior to construction of new development. The accuracy, clarity, completeness and usefulness of this UWMP is defensible and representative of the SAWCo's best understanding of the state of water management at the time of adoption and/or amendment. To that end, all aspects of water management as they pertain to the SAWCo have been delineated in order to provide developers, planners, government agencies and its customers with the tools they need to fulfill their individual missions and interests.



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### SAN ANTONIO WATER COMPANY

The State Department of Finance (DOF) projects substantial growth in the State of California. The challenge facing water agencies, public agencies, planners, and project proponents is to identify and secure the sources of water needed for the inevitable increase in population. However, SAWCo has a fixed number of shares and is only obligated to distribute the water they are able to produce. From a water resources point of view, planning for such growth is addressed by SB 610, SB 221 and related jurisdictional General Plans.

Cities, counties, water districts, property owners, and developers will all be able to utilize the UWMP when planning for and proposing new projects. For certain “projects” meeting the definitions under SB 610 and/or SB 221, a city or county evaluating the environmental effects of that project must request a Water Supply Assessment (WSA) from the water provider or prepare the WSA on its own. A WSA can rely on an adopted and DWR-approved UWMP, making the UWMP a foundational document for compliance with both SB 610 and SB 221. Both of these statutes repeatedly identify the UWMP as a planning document that, if properly prepared, can be used by a water supplier to meet the standards set forth in both statutes. A thorough and complete UWMP will allow the SAWCo to use the UWMP as a foundation to fulfill the specific requirements of these two statutes.

SB 610 creates a strong link between water supply availability and land use by requiring cities and counties to consider water availability for certain development projects. It promotes collaboration between local water suppliers and cities/counties while recognizing the importance of local control and decision making regarding water availability.

SB 221 requires written verification of sufficient water supply from the water supplier prior the construction of residential subdivisions of greater than 500 dwelling units. A “sufficient water supply” includes assessment of the water supplier’s available projected water supplies for a 20-year period during normal years, single-dry years and multiple-dry years. This assessment must consider the subdivision’s water demands in addition to existing and planned future demands.

The Water Conservation Act of 2009 required retail urban water suppliers to report in their UWMPs their Base Daily per Capita Water Use (Baseline GPCD), 2015 Interim Urban Water Use Target, 2020 Urban Water Use Target, and Compliance Daily per Capita Water Use. These terms are defined in Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, DWR 2011 (Methodologies) consistent with SB X7-7 requirements. The Methodologies document can be found online at:

<http://www.water.ca.gov/urbanwatermanagement/uwmp2015.cfm>

The UWMP serves as an important source document for cities and counties as they update their General Plans. Conversely, General Plans are source documents as water suppliers update their UWMPs. These planning documents are linked and their accuracy and usefulness are interdependent. It is crucial that cities, counties and water suppliers work closely when developing and updating these planning documents.



### 1.3 Background

SAWCo, located in Upland, California, is a historically established Mutual Water Company incorporated in October 25, 1882. The Company has consistently provided water service to its active shareholders for over 130 years.

Since water is the business of SAWCo, it is important to note that the natural waters of this area were part of the 1839 land grant, known as ‘The Cucamonga Rancho’. This grant of land was a portion of the original territory granted to the San Gabriel Mission. In those 43 years between the land grant and the SAWCo’s incorporation, the social, economic and cultural changes in the inland valley lifestyle were substantial. The westward expansion and the transcontinental railroads facilitated most of the change, and changes continued after the SAWCo formation. Subsequent development of water rights and delivery services were initiated as the migration of people resulted in the development of agriculture, business and residency. The practice of irrigation by the ditch walkers (Zanjeros) has given way to automated systems fitting the changing style of life that people have enjoyed through the decades due to a sustained water supply.

### 1.4 Coordination

*§10620(d)(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.*

*§10621(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.*

*§10642 Every 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.*

*§10635(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.*

Notification of SAWCo’s intent to update this UWMP has been disseminated to all stakeholders. Table 2 provides a graphic summary of that effort and the level of coordination that ensued. Stakeholders and other agencies had the opportunity to comment



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and ask questions regarding the UWMP update during public hearing meeting that was held during the development of SAWCo's 2015 UWMP.

**Table 2 – Coordination with Appropriate Agencies**

Coordinating Agencies	Participated in developing the plan	Notified 2015 Preparation UWMP was in Progress	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not involved / No information
San Bernardino County		✓					✓	
City of Upland		✓					✓	
City of Ontario		✓					✓	
City of Pomona		✓					✓	
Monte Vista Water District		✓					✓	
Cucamonga Valley Water District		✓					✓	
Three Valleys Municipal Water District		✓					✓	
Inland Empire Utilities Agency		✓					✓	
State Water Resource Control Board							✓	
SAWCo Shareholders							✓	
General Public							✓	

In addition to direct contact with interested stakeholders as shown in Table 2, SAWCo maintains the following relationships and partnerships related to water management issues in the region:

- SAWCo is a current member of the California Urban Water Conservation Council and participates in the Best Management Practices (BMP) program.
- SAWCo participates in the bi-monthly regional conservation workgroup meetings with the Inland Empire Utilities Agency and its affiliates.
- SAWCo is participating in the development of a management plan for the Cucamonga Basin in coordination with the Cucamonga Valley Water District and the West End Consolidated Water Company.



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- SAWCo participates in the management of Six Basins and the Chino Basin through coordination with the respective Watermasters.
- SAWCo is a member of the San Antonio Canyon Watershed Committee in partnership with the City of Pomona, the City of Upland and other local water entities working together to monitor source water quality and protect the quality of life in the San Antonio watershed.

### 1.5 Organization

To assist the reader in understanding the legal mandates involved in the various aspects of this UWMP, relevant and applicable excerpts for the California Water Code (CWC) are provided immediately following each section heading. These excerpts are cited by CWC section designation and offset in italic print to differentiate them from other text.

In general, the chapters of this UWMP are laid out as presented in the Guidebook along with recommended tables and other content.

### 1.6 Type of Planning and Compliance

SAWCo will be doing an “Individual Reporting” for its 2015 UWMP. An agency develops an UWMP that reports solely on its service area. The individual UWMP addresses all requirements of the CWC. The agency notifies and coordinates with appropriate regional agencies and constituents.

### 1.7 Fiscal or Calendar Year and Units of Measurements

*§1608.20 (a)(1) Urban retail water suppliers...may determine the targets on a fiscal year or calendar year basis.*

SAWCo calculated actual demands, projected demands, and any water supply reliability quantities on a calendar year basis. All UWMP required tables were reported using a calendar year basis.

### 1.8 Abbreviations

Following is a list of commonly used abbreviations that may be found in this UWMP.

AB	Assembly Bill
Act	Urban Water Management Planning Act
AF	acre-feet
AFY	acre-feet per year
AWWA	American Water Works Association
Baseline	base daily per capita water use
BMP	best management practice
CBDA	California Bay-Delta Authority



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CCWRF	Carbon Canyon Wastewater Reclamation Facility
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CII	commercial, industrial, and institutional
CUWCC	California Urban Water Conservation Council
CVWD	Cucamonga Valley Water District
CWC	California Water Code
DBCP	dibromochloropropane
DMM	demand management measure
DPH	California Department of Public Health
DWR	California Department of Water Resources
GHG	greenhouse gas
GPCD	gallons per capita per day
IEUA	Inland Empire Utilities Agency
IRWM	Integrated Regional Water Management
IRWMP	Integrated Regional Water Management Plan
MOU	Memorandum of Understanding
MVWD	Monte Vista Water District
MWD	Metropolitan Water District of Southern California
OBMP	Optimum Basin Management Program
OSY	operating safe yield
PUSD	Pomona Utility Service District
SAWCo	San Antonio Water Company
SB	Senate Bill
SCAG	Southern California Association of Governments
State Water Board	State Water Resources Control Board
TVMWD	Three Valley Municipal Water District
UWMP	Urban Water Management Plan
VWS	Verification of Water Supply
WECWCo	West End Consolidated Water Company
WEI	Wildermuth Environmental, Inc.
WSA	Water Supply Assessment
WUEdata	DWR Water Use Efficiency online submittal tool





## CHAPTER TWO – SYSTEM DESCRIPTION

### 2.1 General Description

SAWCo is a corporation which functions according to, and is bound by, its Bylaws. Those Bylaws, and their implementation, pertinent to preparing the various aspects of this UWMP have been summarized here for subsequent reference.

#### 2.1.1 Purpose

*SAWCo Bylaws §1.01 The specific purpose of the corporation is to develop, distribute, supply, and deliver water to its shareholders for irrigation, domestic, and all other useful purposes, in proportion to the number of shares of stock held by them respectively, at actual cost, and is not organized for the private gain of any person.*

#### 2.1.2 Right to Service

*SAWCo Bylaws §10.01 No water shall be supplied by company to anyone who is not a shareholder, and all water shall be supplied at cost. ...each shareholder shall be entitled to receive such part of the entire water of the company that is available for distribution as the number of shares of stock held by him bears to the number of shares outstanding.*

There are 6,389 outstanding shares. SAWCo will issue no more shares; therefore, the number of shares is finite.

The “entire water of the company” is equivalent to 11,552 AFY, which is the current entitlement for 2015. This equates to an entitlement of 1.808 AFY per share. As such, water use projections related to population growth and density, land use, zoning, development, and other typical indicators have no bearing on supply.

Water is supplied based on entitlement only. Entitlement is based on the number of shares held. Although finite in number, shares are a commodity which may be divided or sold. Distribution of water is equally prorated among all outstanding share whether they are active or inactive. SAWCo believes the level of analysis required to project the distribution of entitlement over the specified planning horizon is beyond the scope of the intent of the Urban Water Management Planning Act. Therefore, projected supply will be presented in terms of AFY per share rather than in terms of the total entitlement of individual shareholders.





## 2.2 Service Area Description and Boundary Map

*§10631 (a) Describe the service area of the supplier...*

The bylaws of SAWCo specify the service area as being made up of a Basic Area and an Extended Area.

The Basic Area generally coincides with the community of San Antonio Heights which is located north of the City of Upland in unincorporated San Bernardino County as shown in Figure 1. The Basic Area is bounded on south by the City of Upland, on the north by the San Bernardino Mountains, on the west by the Los Angeles County Line and on the east by Cucamonga Creek. SAWCo provides retail service to all end users who reside in the Basic Area.

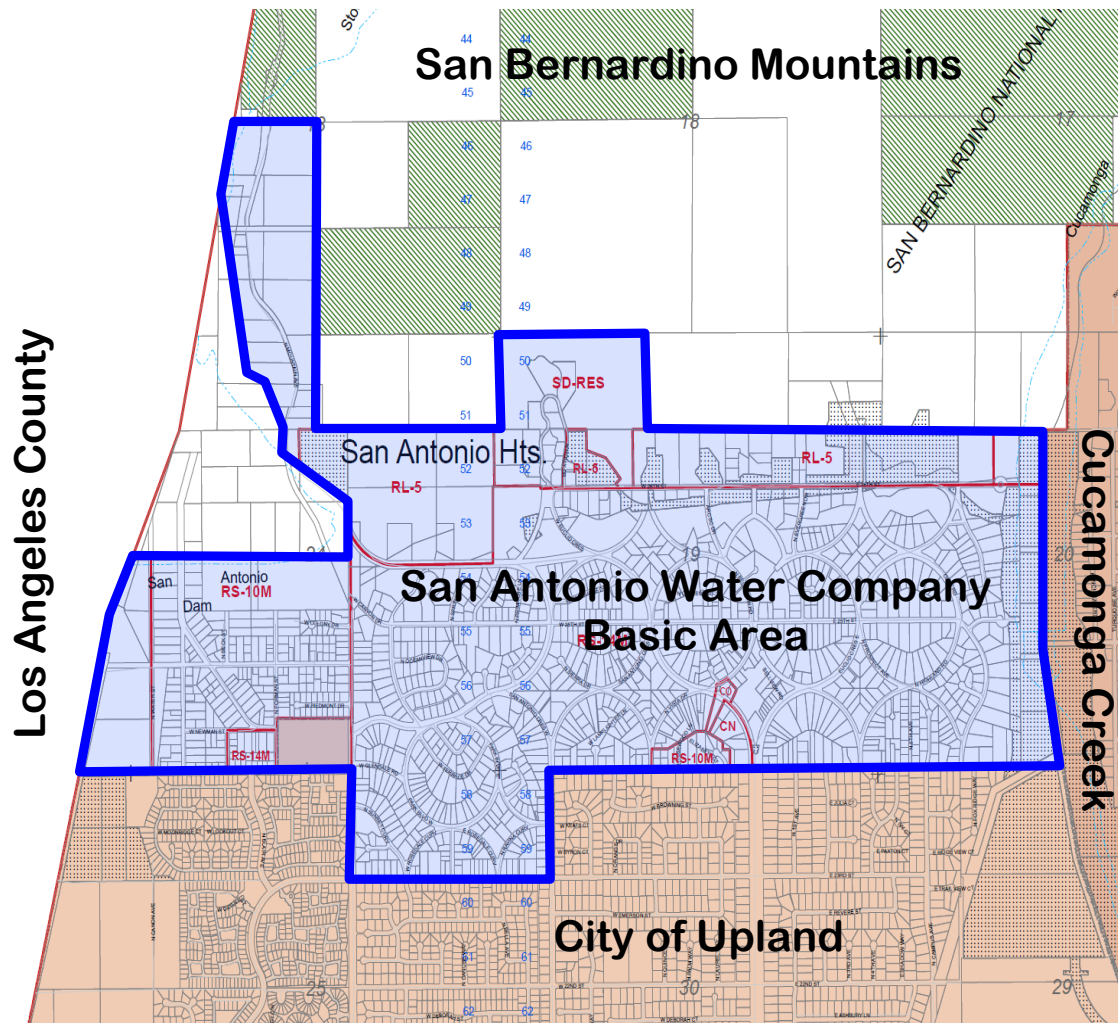
The description of the Extended Area is considerably more vague, stated as “all lands not included in the Basic Area.” SAWCo has a limited number of retail customers in the extended area including the Upland Hills Golf course, the Red Hill Golf Course, two rock companies and several grove irrigators. For purposes of this Urban Water Management Plan, all other water deliveries made in the Extended Area are considered to be to wholesale customers.



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Figure 1 – SAWCo Area



### 2.3 Service Area Climate

§10631 (a) Describe the service area of the supplier, including...climate...

Per the 2015 Six Basins Watermaster Annual Report Draft, precipitation at the San Antonio Dam in 2015 was measured at 9.4 inches; this is approximately 42% below the long-term average of 22.6 inches for the calendar years 1957 to 2015 period. The annual precipitation has ranged from a minimum of 7 inches to a maximum of 52 inches.



#### 2.4 Service Area Population

*§10631 Describe the service area of the supplier, including current and projected population ...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.*

Per the 2010 US Census, San Antonio Heights, which is coincident with the SAWCo Basic Area, had a population of 3,371. As of 2015, according to San Antonio Heights profile published by the Southern California Association of Governments (SCAG) in 2015, the current population is 3,396. Assuming that ultimate build-out occurs in 2035, and population annual growth rate is 0.34% during 2015-2020 as described in the San Antonio Heights profile summary, Table 3 provides the current and projected population for the Basic Area.

**Table 3 – Current and Projected Population**

Year	2015	2020	2025	2030	2035
Basic Area population	3,396	3,454	3,513	3,573	3,635

#### 2.5 Demographics of the Basic Area

*§10631(a) Describe . . . other demographic factors affecting the supplier's water management planning.*

The majority of SAWCo's boundary lie within the sphere of influence of San Antonio Heights. Per the 2014 American Community Survey, an ongoing statistical survey by the U.S. Census Bureau, the following demographics reflect the City of San Antonio Heights.

- ◆ Median Age: 45.5
- ◆ Median Household Income: \$95,250
- ◆ Housing Units: 1,294

The vast majority of San Antonio Heights is designated as RS-10M (single family residential with a minimum lot size of 10,000 square feet) and RS-14M (single family residential with a minimum lot size of 14,000 square feet) per the San Bernardino County General Plan; however, most lots are much larger than the prescribed minimum lot size due to the irregular layout of lot lines and right-of-ways, and the also due to the terrain, which becomes increasingly steep to the north. There are no schools, no industrial development and very limited commercial land use.



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### SAN ANTONIO WATER COMPANY

#### 2.6 Demographics of the Extended Area

SAWCo delivers large volumes of water to shareholders in the Extended Area for purposes of large landscape irrigation, industrial use, agricultural use, and wholesale. Land use and planning in the Extended Area are under the jurisdiction of numerous cities and San Bernardino County. There is no unifying demographic in the Extended Area and SAWCo defers such delineation to responsible agencies.



## CHAPTER THREE – SYSTEM WATER USE

### 3.1 General Description

Generally, demand may not exceed entitlement. Supply is provided to each shareholder based on their entitlement. If a shareholder exceeds their entitlement, they pay the tiered rate. The only water available to those who exceed their entitlement is from shareholders who do not use their entire entitlement. There is no carry-over of entitlement from year to year or month to month except under existing service agreements.

### 3.2 Water Uses by Sector

*§10631(e)(1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:*

- (A) Single-family residential.*
- (B) Multifamily.*
- (C) Commercial.*
- (D) Industrial.*
- (E) Institutional and governmental.*
- (F) Landscape.*
- (G) Sales to other agencies.*
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.*
- (I) Agricultural...*
- (2) The water use projections shall be in the same five-year increments described in subdivision (a).*

Actual past and current deliveries for 2010 and 2015 are included in Table 4.



## CHAPTER THREE – SYSTEM WATER USE

### SAN ANTONIO WATER COMPANY

**Table 4 – Actual Water Deliveries for 2010 and 2015**

Water Use Sectors		2010 (AFY)	2015 (AFY)
Basic Area	Single - Family Residential	1,287.00	1,073.95
	Multi - Family Residential	23.60	18.82
	Commercial	19.20	5.36
	Institutional and Governmental	11.25	15.96
	Landscape	0.01	0.00
Extended Area	Industrial	281.50	331.51
	Institutional and Governmental	1.07	1.91
	Landscape	12.48	12.34
	Agricultural	805.84	443.77
	Wholesaler	11,224.38	6,034.43
Total		13,666.33	7,938.05

For purposes of reporting water deliveries and to assist the reader in developing an understanding of the distribution of deliveries made by SAWCo, a distinction has been made between shareholders in the Basic Area and the Extended Area.

Table 5 includes all other past and current water uses for 2010 and 2015, specifically groundwater recharge and system losses. By definition, these water uses are not tied to an area designated for delivery to shareholders.

**Table 5 – Actual Groundwater Recharge and System Losses between 2010 and 2015**

Water Uses or Losses	2010 (AFY)	2015 (AFY)
Groundwater Recharge	3,999.40	903.11
System Losses	194.40	233.82
Total	4,193.80	1,136.93

### 3.3 Projected Water Demands

*§10631(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years 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*



## CHAPTER THREE – SYSTEM WATER USE

### SAN ANTONIO WATER COMPANY

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.*

Projected water use, as shown in Table 6, are based on the following assumptions:

- ◆ Single-family and multi-family residential, which is specific to the retail area, is based on the average of the last two years, which has been adjusted proportionally to population growth within the Basic Area per Table 3.
- ◆ Commercial, Institutional and Governmental, and Landscape water use specific to the Basic Area, is based on the average of the last two years and is anticipated to remain unchanged in the future.
- ◆ Deliveries in the Extended Area are based on the average of the last two years.
- ◆ All deliveries are assumed to decrease by 15%. Based upon the supply trends and the previous reductions in entitlement to meet supply, it is projected that entitlement will be reduced by 15% again.
- ◆ The volume of water attributed to inactive or underused shares represents the difference between the total entitlement of 9,819 AFY and the total projected water use by sector.
- ◆ Total deliveries are considered to be reduced by 15% of the current entitlement (11,552 AFY) and remain constant at 9,819 AFY.

**Table 6 – Projected Water Deliveries through 2035**

Water Use Sectors		2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
Basic Area	Single-family Residential	1,129.54	1,133.38	1,137.23	1,141.10
	Multi-family Residential	18.47	18.54	18.60	18.66
	Commercial	12.28	12.28	12.28	12.28
	Institutional & Governmental	13.61	13.61	13.61	13.61
	Landscape	0.01	0.01	0.01	0.01





## CHAPTER THREE – SYSTEM WATER USE

### SAN ANTONIO WATER COMPANY

Water Use Sectors	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
Inactive or Underused Shares	1,811.70	1,807.80	1,803.88	1,799.95
Extended Area	6,833.60	6,833.60	6,833.60	6,833.60
<b>Total Deliveries</b>	<b>9,819.21</b>	<b>9,819.22</b>	<b>9,819.21</b>	<b>9,819.21</b>

- Table 7: Groundwater recharge is dependent on the availability of surface water from San Antonio Canyon and nonuse or underuse of entitlement. The projection is based on a three-year average from 2013 to 2015.
- System losses are based on a three-year average from 2013 to 2015

**Table 7 – Projected Additional Uses and Losses through 2035**

Water Use or Losses		2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
Groundwater Recharge	Cucamonga Basin	648.65	648.65	648.65	648.65
	Six Basins	362.37	362.37	362.37	362.37
	Chino Basin	0.00	0.00	0.00	0.00
System Losses		235.71	211.10	211.10	211.10
<b>Total</b>		<b>1,222.12</b>	<b>1,222.12</b>	<b>1,222.12</b>	<b>1,222.12</b>

### 3.4 Distribution System Water Losses

*§10631(e)(1) Quantify, to the extent records are available, past and current water use over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:...*

*(J) Distribution system water loss*

*§10631(e)(3)(A) For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.*

*(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department 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.*





## CHAPTER THREE – SYSTEM WATER USE

### SAN ANTONIO WATER COMPANY

The American Water Works Association (AWWA) Free Audit Software was used to obtain the water audit data validity score of its system. SAWCo scored 80/100 as shown in Appendix C. The audit was limited to the Basic Area of the distribution system.

Distribution system losses are the physical water losses from the water distribution system and the supplier's storage facilities including customer consumption.

Using the AWWA software, the distribution system water losses were reported from the beginning of Jan 2015 through end of Dec 2015 and Table 8 provides a summary of the results of the software.

**Table 8 – Results from AWWA Free Water Audit Software**

Data	Quantity (AFY)
Water Supplied	2,047.301
Authorized Consumption	1,261.890
Water Losses	785.411
Apparent Losses	73.277
Real Losses	712.133
Water Audit Data Validity Score	80/100



## CHAPTER FOUR – BASELINES AND TARGETS

### 4.1 General Description

*§10608.12 "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.*

Wholesale water suppliers are not required to establish and meet baseline and targets for daily per capita water use, nor are wholesalers required to complete the SB X7-7 Verification Form. However, wholesale agencies are required to provide an assessment of their present and proposed future measures, programs and policies that will help the retail water suppliers in their wholesale service area achieve their SB X7-7 water use reduction targets.

### 4.2 Support for Water Demand Reduction

*§10608.36 Urban wholesale water suppliers shall include in the urban water management plans . . . an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.*

As of 2015, SAWCo is a member of the California Urban Water Conservation Council (CUWCC). In the *Need to include* future, SAWCo will be evaluating the possibly of establishing independent Best Management Practices.



## CHAPTER FIVE – SYSTEM SUPPLIES

### 5.1 General Description

Water supply for SAWCo is a mixture of surface water from San Antonio Creek, groundwater from the San Antonio Tunnel and three area basins: Chino Basin, Cucamonga Basin and Six Basins.

### 5.2 Water Sources

*§10631(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).*

Table 9 provides current and projected supply totals. No new sources of supply are anticipated to be developed over the planning horizon.

**Table 9 – Current and Projected Water Supplies**

Water Supply	2015 (AFY)	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
Groundwater	7,006.60	7,627.14	7,627.14	7,627.14	7,627.14
Surface Water	2,024.01	1,962.88	1,962.88	1,962.88	1,962.88
Total	9,030.61	9,590.02	9,590.02	9,590.02	9,590.02

### 5.3 Groundwater

*§10631(b) ...If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:*

*§10631(b)(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.*

*§10631(b)(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater...For basins that 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, (provide) 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.*

*§10631(b)(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*

*§10631(b)(4) (Provide 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.*

SAWCo utilizes various groundwater sources including the San Antonio Tunnel and groundwater wells in Chino Basin, Cucamonga Basin and Six Basins. All of these sources are adjudicated. SAWCo also engages in spreading operations that enhance the groundwater supply available to SAWCo. These groundwater sources are described in the following sections.

#### 5.3.1 San Antonio Tunnel

SAWCo has rights to water flowing in the San Antonio Tunnel, a deep rock 4-foot by 4-foot rectangular tunnel situated approximately 100 feet below the ground surface supported by redwood beams and solid rock.

The deep rock tunnel is fed by groundwater that naturally percolates through the subsurface. Tunnel flow is augmented by groundwater wells. Surface water from the San Antonio Canyon is also diverted to spreading grounds north of the tunnel.

#### 5.3.2 Six Basins

The Six Basins area is bounded to the south by the San Jose Hills, to the east by the Chino Basin, to the north by the San Gabriel Mountains, and to the west by the Main San Gabriel Basin. The Six Basins area consists of six interconnected groundwater basins, which includes the “Four Basins” (Canyon Basin, Upper Claremont Heights Basin, Lower Claremont Heights Basin, and Pomona Basin) and the “Two Basins” (Live Oak Basin and Ganesha Basin) as shown in Figure 2.

SAWCo operates groundwater wells overlying the Upper Claremont Heights Basin and owns rights to produce groundwater from the Four Basins area equivalent to 7.166% of the



## CHAPTER FIVE – SYSTEM SUPPLIES

### SAN ANTONIO WATER COMPANY

operating safe yield (OSY) of the Four Basins as set forth in the Six Basins Judgment<sup>3</sup>. Characteristics of the Judgment include the following actions:

- sets out the safe yield for Six Basins inclusive of active spreading and imported water return flows
- establishes procedure for setting annual operating safe yield for 4 of the 6 basins (Canyon, Upper and Lower Claremont Heights, and Pomona basins)
- allows overproduction but with obligation for replacement water
- establishes free annual surface water and groundwater production
- provides for storage and recovery beyond annual production rights
- establishes a watermaster
- allows portability of rights within the Four Basins subject to specified conditions
- sets out priorities for use of groundwater storage capacity

The OSY is determined annually by the Six Basins Watermaster and has ranged between about 16,500 and 24,000 AFY since 1999. The OSY for CY2015 was 16,500 AFY. Management of Six Basins and the duties of the Six Basins Watermaster were overseen by Three Valleys Municipal Water District (TVMWD) until April 2011 when those responsibilities were transferred to Wildermuth Environmental, Inc. (WEI). The Rules and Regulations of the Six Basins Watermaster are included in Appendix D.

In 2006, SAWCo established a Storage and Recovery account with the Six Basins Watermaster that allows SAWCo to recharge at a rate not to exceed 1,000 AFY with a maximum limitation of 2,000 AFY for up to two years.

The Six Basin Judgment did not allocate any production rights from the Two Basins to SAWCo. In addition, rights are not transferable between Four Basins and Two Basins. However, rights may be transferable from within the Four Basins if certain conditions are met.

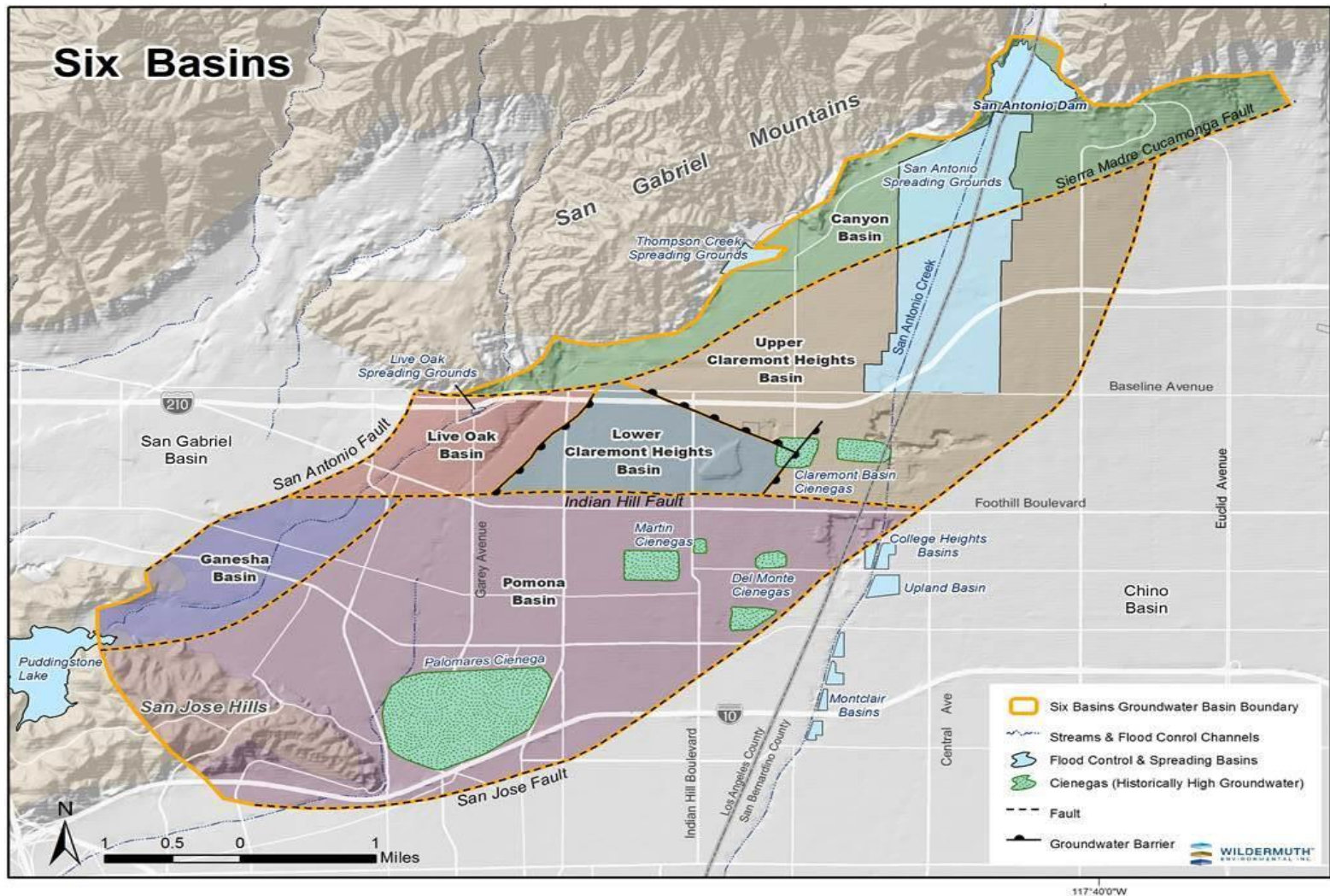
Appropriators like SAWCo, who are party to the Six Basins Judgment, are authorized to produce groundwater in addition to the allocated amounts within the Four Basins. Such extractions result in an assessment by the Six Basins Watermaster to pay for the administration of Four Basins. Water to replenish Four Basins is purchased from the Metropolitan Water District of Southern California (MWD) via TVMWD, inter-agency transfers, or the Inland Empire Utilities Agency in coordination with the Six Basins Watermaster.

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<sup>3</sup> Six Basin Judgment, Filed in 1998, Case No. KC029152



Figure 2 – Extent of Six Basins





#### 5.3.3 Cucamonga Basin

Cucamonga Basin is located east and north of the Red Hill Fault in the northeastern section of the City of Upland as shown in Figure 3. In 1958, a stipulated Cucamonga Basin Judgment<sup>4</sup> G allocated groundwater within the Cucamonga Basin to 24 stipulating parties, which today consists of SAWCo, West End Consolidated Water Company (WECWCo), and Cucamonga Valley Water District (CVWD).

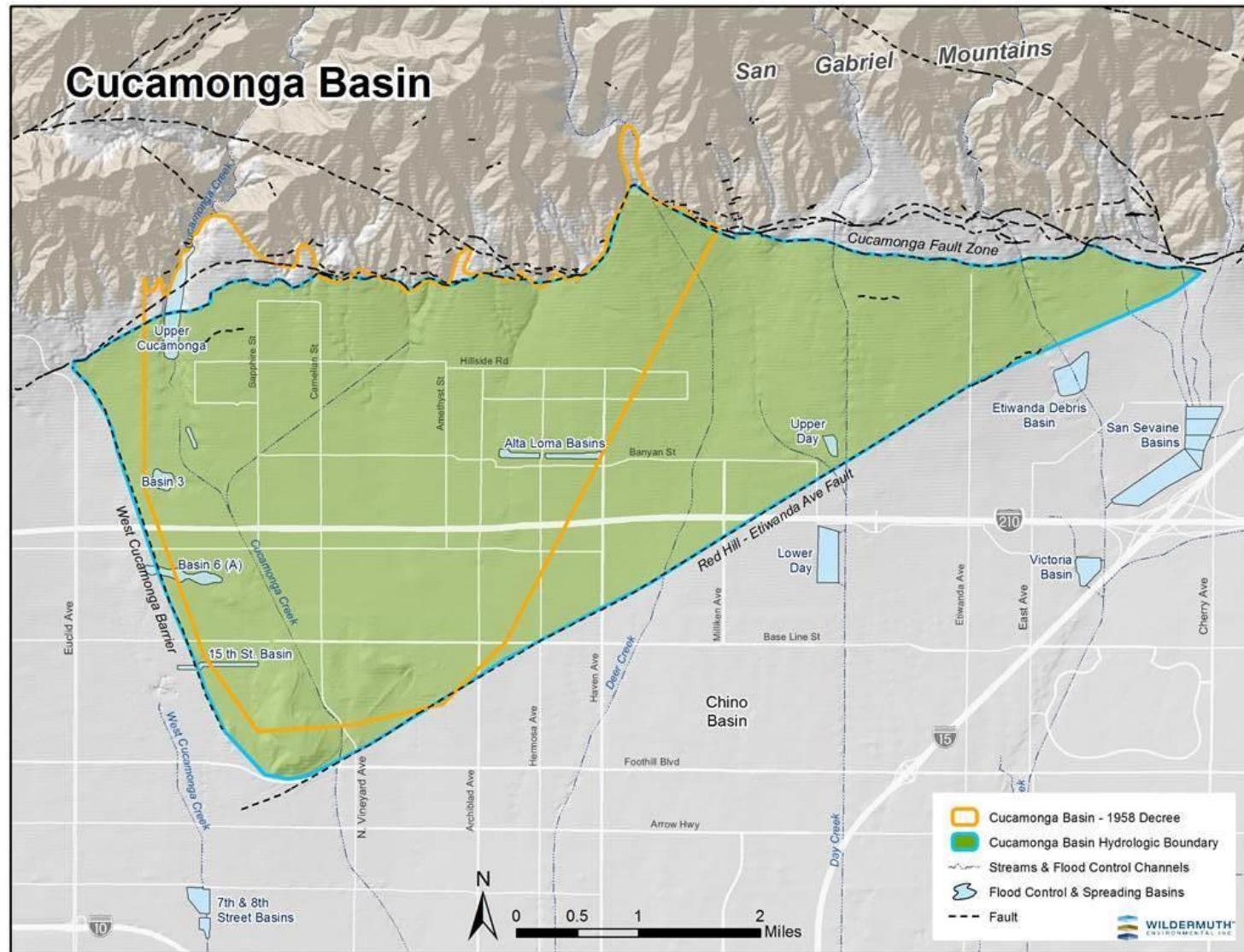
The Cucamonga Basin judgment stipulates SAWCo's water production as 6,500 AFY provided, SAWCo spreads an average 2,000 AFY of imported water from San Antonio Canyon into the Cucamonga Basin, based on a 10 year rolling average. However, if SAWCo's average annual spreading falls below 2,000 AFY there would be a diminution in SAWCo's annual rights, to a minimum total of 4,500 AFY. Conversely, if SAWCo's average annual spreading is in excess of 2,000 AFY, credit for 95% of the excess spreading would be allowed up to a maximum of 8,500 AFY.

The Judgment specifies water rights for individual groundwater producers and the amount that can be exported to non-overlying areas for use by individual producer. The Judgment specifies requirements for spreading. No annual report is currently prepared to document implementation of judgment requirements. There are currently discussions underway regarding revising the management of the Cucamonga Basin to modernize the Judgment.

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<sup>4</sup> Cucamonga Basin Judgment, Recorded in 1958, Case No. 92645

Figure 3 – Extent of Cucamonga Basin







#### 5.3.4 Chino Basin

SAWCo overlies the northwesterly portions of the Chino Basin as shown in Figure 4.

Water rights in the Chino Basin were adjudicated in January 1978, and the Chino Basin's safe yield was established as 140,000 AFY. The safe yield is defined in the Chino Basin Judgment<sup>5</sup> as "the long-term average annual quantity of groundwater (excluding replenishment of stored water but including return flow to the Basin from use of replenishment or stored water) which can be produced from the Chino Basin under conditions of a particular year without causing an undesirable result." The 1978 Chino Basin Judgment's allocation of the safe yield of the Chino Basin includes three separate Pools: The Overlying Agricultural Pool, Overlying Non-Agricultural Pool, and the Appropriative Pool. SAWCo is a member of the Appropriative Pool and has an appropriative right of 2.748 percent of the total appropriative rights in the Chino Basin. Although subject to change, the OSY of the Chino Basin has historically been 54,834 AFY, of which SAWCo is entitled to 1,506.888 AFY (includes sawco's portion of allowed overproduction until 2017).

Chino Basin Watermaster filed a motion on December 18, 2015 requesting to reset the Safe Yield of the Chino Basin from 140,000 acre-feet per year (AFY) to 135,000 AFY. The proposed change per the Safe Yield Reset Agreement (SYRA) will be heard in court on June 10, 2016. This change would reduce SAWCo's entitlement to 1,232 AFY.

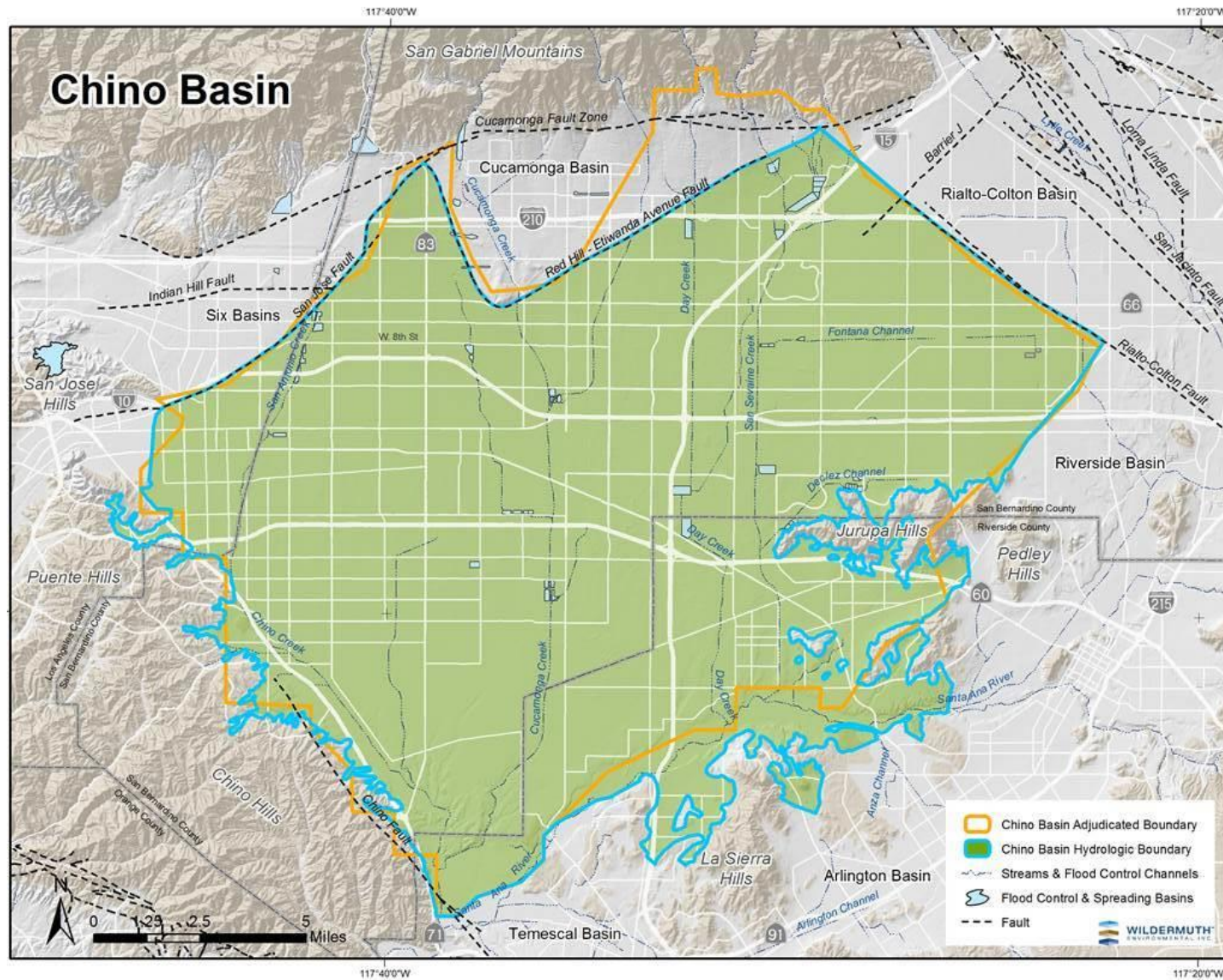
In addition, the Chino Basin Watermaster reallocates the unused portion of the Chino Basin safe yield from to the Overlying Agricultural Pool to the Appropriative Pool members as a supplement to the Appropriative Pool share of OSY rights in any year. These transfers are permanent if agricultural land has been converted to non-agricultural use, or temporary if agricultural pool extractions are less than their share of the safe yield. As agricultural production declines within the Chino Basin, the reallocation of water to the Appropriative Pool is expected to increase. Appropriators, like SAWCo, who are party to the Chino Basin Judgment are authorized to continue to produce groundwater while exceeding their water rights. Such extractions result in assessments by the Chino Basin Watermaster to pay for water to replenish the basin, through imported surface water recharge. Water to replenish the Chino Basin is purchased from MWD by Chino Basin Watermaster in coordination with the IEUA or from Appropriation Pool participants.

The Chino Basin Watermaster Thirty-Six Annual Report includes historical details on the management of the Chino Basin<sup>6</sup>. The Judgment appoints Chino Basin Watermaster to administer and enforce the Judgment and any subsequent instructions or orders of the Court. The Judgment provides numeric value for natural safe yield and allocates this natural safe yield among three pools of producers. The Judgment also provides for 5,000 AFY (200,000 AF of controlled overdraft averaged over 40 years). Pumping in excess of safe yield is allowed, but incurs a replenishment obligation. The Judgment expressly provides for groundwater storage and conjunctive use.

<sup>5</sup> Chino Basin Judgment, Filed in 1989, Case No. 164327

<sup>6</sup> Chino Basin Watermaster (2013), 36<sup>th</sup> Annual Report

Figure 4 – Extent of Chino Basin





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The Court directed the Watermaster to develop the Optimum Basin Management Program (OBMP) addressing enhancement of basin water supplies, protection and enhancement of water quality, enhancement of basin management, and equitable financing of the OBMP. The Chino Basin OBMP is provided in Appendix E. In 2004, the Water Quality Control Board, Santa Ana Region, incorporated the Maximum Benefit Basin Plan into its Water Quality Control Plan for the Santa Ana River Basin. The Watermaster and Chino Basin Desalter Authority completed the Chino Desalter Wellfields recently. This project has enabled the achievement of hydraulic control of the basin. The wellfield prevents groundwater discharge from Chino Basin to the Santa Ana River. The benefits of this project will be the elimination of losses to SAWCo's storage accounts and maintaining or enhancing the yield of the basin.<sup>7</sup>

### 5.3.5 Groundwater Summary

Table 10 provides a summary of groundwater production over the past five years.

**Table 10 – Groundwater Production for Last Five Year**

Groundwater Supply	2011 (AFY)	2012 (AFY)	2013 (AFY)	2014 (AFY)	2015 (AFY)
Chino Basin	220.93	1,091.60	1,086.27	1,548.18	1,143.84
Cucamonga Basin	6,061.68	7,629.60	8,818.85	6,210.22	4,427.94
Six Basin	1,173.88	1,471.83	1,163.10	935.75	738.02
San Antonio Tunnel	2,398.83	2,340.61	921.27	1,230.48	696.80
Total	9,855.32	12,533.64	11,989.49	9,924.63	7,006.60

Table 11 provides projected groundwater production. The projections are based on the following:

- ◆ Chino Basin is SAWCo's entitlement of the expected Operating Safe Yield
- ◆ Since SAWCo has been unable to meet the 2,000 AFY threshold for spreading into Cucamonga Basin, the projected supply was reduced to their minimum rights.
- ◆ Six Basins and San Antonio Tunnel were projected based upon the average production for the last three years

<sup>7</sup> "Achievement of Hydraulic Control of the Chino Basin," Chino Basin Watermaster Board Meeting



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**Table 11 – Projected Groundwater Supply**

Groundwater Supply	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
Chino Basin	1,232.00	1,232.00	1,232.00	1,232.00
Cucamonga Basin	4,500.00	4,500.00	4,500.00	4,500.00
Six Basin	945.62	945.62	945.62	945.62
San Antonio Tunnel	949.52	949.52	949.52	949.52
<b>Total</b>	<b>7,627.14</b>	<b>7,627.14</b>	<b>7,627.14</b>	<b>7,627.14</b>

#### 5.4 Surface Water

SAWCo has rights to surface flow from San Antonio Creek that are pre-1914 rights and over the years have been supported by Court Judgments per a confidential report entitled “Opinion Re Water Rights of San Antonio Water Company,” dated June 1993, prepared by the law firm of Lagerlof, Senecal, Drescher & Swift.

Table 12 provides a summary of production over the past five years from San Antonio Creek.

**Table 12 – Surface Water Production for Last Five Years**

Surface Water Supply	2011 (AFY)	2012 (AFY)	2013 (AFY)	2014 (AFY)	2015 (AFY)
San Antonio Creek	8,800.32	2,721.28	1,447.29	1,658.92	2,024.01

Table 13 provides projected surface water production. The projections are based upon the average production for the last four years.

**Table 13 – Projected Surface Water Supply**

Surface Water Supply	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
San Antonio Creek	1,962.88	1,962.88	1,962.88	1,962.88

#### 5.5 Stormwater

SAWCo’s water sources are limited to local surface water runoff and those groundwater basins that underlie the Basic Area.

#### 5.6 Recycled Water and SAWCo

*§10633 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*





## CHAPTER FIVE – SYSTEM SUPPLIES

### SAN ANTONIO WATER COMPANY

*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.*

*§10633(a) (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.*

*§10633(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.*

*§10633(c) (Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.*

*§10633(d) (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.*

*§10633(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 pursuant to this subdivision.*

*§10633(f) (Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.*

*§10633(g) (Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.*

SAWCo has sufficient supplies to meet all obligations to its shareholders through the planning horizon. SAWCo does not have the sewer treatment facilities to develop recycled water as a new source. Nonetheless, SAWCo encourages and supports the development of recycled water as a regional resource through its affiliation with the IEUA and member agencies. If a current shareholder's supply is converted to recycled water through his own efforts, the efforts of a local purveyor or in coordination with regional recycled water planning, SAWCo shares then held would be at the purview of the shareholder who may



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choose to lease, sell or render inactive those shares as provided by and in accordance with the SAWCo Bylaws.

SAWCo's 2010 UWMP projected zero recycled water use in 2015, and this assessment is still valid. No recycled water use is projected within the Basic Area through the planning horizon and any conversion to recycled water that occurs in the Extended Area will have no impact on entitlement.

#### 5.7 <sup>8</sup>Desalinated Water Opportunities

*§10631(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.*

SAWCo's water sources are limited to local surface water runoff and those groundwater basins that underlie the Basic Area. There are no opportunities for desalination in this region.

#### 5.8 Exchanges or Transfer Opportunities

*§10631(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.*

SAWCo maintains indirect connections to the Monte Vista Water District (MVWD) and the City of Ontario via the WFA, and direct connections to the City of Upland.

SAWCo leases groundwater rights to certain entities who hold SAWCo shares and operate production facilities in common basins. These include the Cities of Fontana, Ontario, Chino and Upland, and the Cucamonga Valley Water District, the Monte Vista Water District, the Jurupa Community Services Water District and TVMWD. The volume leased varies from year to year and is limited to storage supplies

**Table 14 – Existing Transfer Agreements**

Agency in Receipt of Transfer from SAWCo	Transfer or Exchange	Term	Proposed Volume (AFY)
City of Ontario	Transfer	2018	All or a portion of SAWCo entitlement (currently up to 545.157 AFY)

#### 5.9 Future Water Projects

*§10631(h) (Describe) 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*

<sup>8</sup> Inland Empire Utilities Agency 2010 UWMP



## CHAPTER FIVE – SYSTEM SUPPLIES

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*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.*

SAWCo has three types of future projects related to supply: (1) groundwater production, (2) groundwater recharge and (3) infrastructure enabling transfer and exchange. In general, these projects are not intended to increase supply; rather, they are intended to enhance groundwater production and distribution flexibility and improve long-term groundwater storage. The various projects are described in the following sections.

#### 5.9.1 Groundwater Production Projects

Well replacement projects are listed in Table 15. In general, these projects improve flexibility and redundancy for production operations.

**Table 15 – Future Groundwater Production Projects**

Project Description	Impact on Supply	Implementation
Well 19 Rehabilitation	Provide additional groundwater production capability	Feasibility Study is currently being completed

#### 5.9.2 Surface Water and Groundwater Recharge Projects

Surface Water projects are listed in Table 16. In general, these projects improve spreading capabilities.

**Table 16 – Future Effective Use of Surface Water Projects**

Project Description	Impact on Supply
Enhance capacity of the existing Edison Ponds and establish conservation levees.	Additional bulking flows from the San Antonio Creek will be desilted when available, rather than being diverted to San Antonio Dam, increasing SAWCo's capacity to capture existing water rights.
Agreement with City of Pomona to allow their portion of the 60/40 split for SAWCo when available to increase surface water capture from San Antonio Creek	The additional surface water would allow SAWCo to deliver surface water to the City of Upland's Treatment Plant and/or proposed future indirect connections to the WFA.



## CHAPTER FIVE – SYSTEM SUPPLIES

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Project Description	Impact on Supply
Cucamonga Creek Crosswalls project consists of desilting and repairing existing gabions	The project is intended to enhance groundwater recharge.
Cucamonga Basin 6 Desilting project	The project will improve the percolation ability of the basin to enhance groundwater recharge.

### 5.9.3 Transfer and Exchange Infrastructure Projects

There are three projects planned to improve opportunities and flexibility for transfer and exchange between SAWCo and its shareholders as shown in Table 17. The exact location, capacity and implementation schedule of these interconnection are under review.

These future connections will provide SAWCo and their partner agencies the ability to receive water in emergency conditions or in the event that a district is unable to produce water to meet the demands of the system. The connections will also provide partnering opportunities for the districts to transfer water between the districts when it is advantageous to both parties.

**Table 17 – Future Exchange and Transfer Infrastructure Projects**

Discharging Agency	Receiving Agency
SAWCo	City of Upland MVWD City of Ontario
SAWCo	CVWD

### 5.10 Summary of Existing and Planned Sources of Water

*§10631 (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 10631(a).*

*(4) (Provide 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.*

Please refer to the UWMP Tables located within Appendix K for the summary of the current existing and planned sources of water.





## CHAPTER SIX – WATER SUPPLY RELIABILITY

### 6.1 Reliability by Type of Year

*§10620(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.*

SAWCo’s Bylaws include a provision to adjust entitlement based on the reliability of its water sources per the following excerpt:

*SAWCo Bylaws §10.01 No water shall be supplied by company to anyone who is not a shareholder, and all water shall be supplied at cost. ...each shareholder shall be entitled to receive such part of the entire water of the company that is available for distribution as the number of shares of stock held by him bears to the number of shares outstanding.*

Entitlement, or “entire water”, was adjusted three times between 1999 to 2011. Due to the Drought Emergency and the back-to-back record of dry years, on February 17, 2015 the Board approved reducing entitlement by 15%. SAWCo reduced the water entitlement in 2014 and 2015 in response to the drought conditions and back-to-back dry years. Entitlement was reduced by 18% in March 2014 to 13,589 AFY. The entitlement was reduced an additional 15% in March 2015, setting the annual entitlement to 11,552 AFY as shown in the SAWCo Spring 2015 Newsletter (Appendix F).

Table 1 shows the breakdown of the accounts along with their associated entitlements. The historical adjustments to entitlement are indicated below in Table 18:

**Table 18 – Historical Adjustments to Entitlement**

Period	Total Entitlement (AFY)	Entitlement per Share (AFY per share)
November 1999 to September 2002	18,654	2.920
September 2002 to 2005	15,254	2.388
2005 to 2014	16,574	2.594
2014	13,591	2.126
2015 to present	11,552	1.808

Currently, the entitlement has been reduced to 11,552 AFY. The entitlement is expected to be reduced an additional 15% based upon the supply trends and the previous reductions in entitlement to meet supply. For that reason, all projected calculations will be based on a total entitlement of 9,819 AFY.



### 6.1.1 Summary of Historical Water Year Data

*§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.*

The SAWCo Bylaws define supply in terms of entitlement per the excerpt cited above in §6.1. For purposes of this section, supply is considered to be synonymous with entitlement. Entitlement is limited by SAWCo's groundwater and surface water rights and the capacity of SAWCo's production infrastructure.

Demand is considered to be all water that is delivered. Demand may vary from entitlement for the following reasons:

- ◆ Some shares may be inactive
- ◆ Some shareholders may use less than their entitlement
- ◆ Some shareholders may exceed their entitlement
- ◆ Larger shareholders may reject delivery during wet years

As a rule, there is no excess water produced by SAWCo. The difference between demand, per the reasons listed above, and entitlement is reconciled as follows:

- ◆ For shareholders who exceed their entitlement, the additional volume of water is considered to represent the entitlement of inactive share. If the volume of water associated with inactive shares is exceeded, SAWCo has created a fund to purchase additional water on the shareholders' behalf to be repaid at a higher tiered rate.
- ◆ For large shareholders, any rejected volume is used to recharge area groundwater basins.

Historical data bear out this difference between entitlement and demand. However, SAWCo's principle obligation is to provide 100% of its shareholders' entitlement. In other words, a projection of the number of inactive shares or the degree to which shareholders exceed or underuse their entitlement is not germane to the SAWCo's mission.



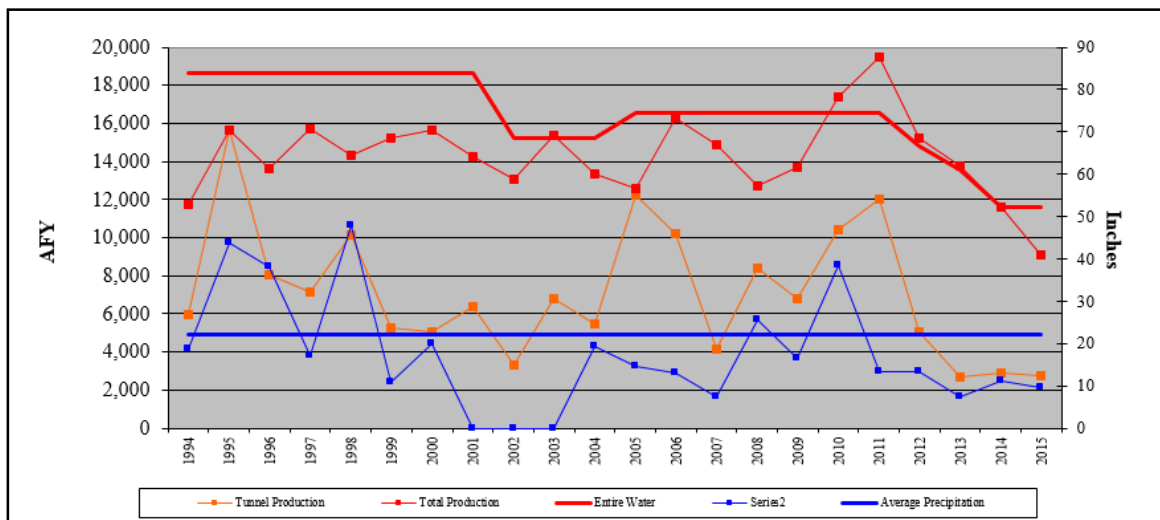
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Furthermore, there are administrative vehicles in place to account for the reconciliation of these variations in a manner that does not interfere with the SAWCo's principal obligation. Therefore, projected demand is equivalent to projected entitlement. There are currently no projected changes to entitlement. As such, current entitlement during normal years is determined to be constant for the planning horizon associated with this report.

Figure 5 was used to establish the single dry year and the multiple dry years. The thin red curve (Total Production) represents total annual production and the heavy red line (Entire Water) represents the total entitlement of between the years of 1994 through 2015. The orange curve (Tunnel Production) represents annual production from gravity sources whose trend is to be higher during wet years and lower during dry years. These three curves (Total Production, Entire Water and Tunnel Water) are read from the left vertical axis (AFY). The thin blue curve (Precipitation) represents the annual precipitation recorded at San Antonio Dam. The heavy blue line (Average Precipitation) represents the historical average precipitation. These two curves (Precipitation and Average Precipitation) are read from the right vertical axis (Inches). Historical precipitation data for 2001, 2002 and 2003 were incomplete.

**Figure 5 – Indication of Drought**



By observation, the Tunnel Production curve and the Precipitation curve have the same general shape. Periods of high precipitation (1995, 1998, 2010) coincide with high gravity production. Periods of low precipitation (1994, 1997, 1999, 2000, 2007, 2015 etc.) coincide with low gravity production. Due to the consistency of these data sets, 2015 has been chosen to represent the single dry year because it is the single worst year for production.

2015 represented the most severe recent single year drought that initiated the High Shortage Alert stage of their Water Shortage Contingency Plan.



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The multiple dry years are chosen as a three-year period from 2013 to 2015 because we anticipate more frequent drought conditions and that this may represent the new normal.

#### 6.1.2 Normal Year

The projected entitlement is expected to be reduced by 15% to 9,819 AFY. Given that there is a total number of 6,389 shares, the current entitlement is set at 1.537 AFY per share. The Normal Year Supply is considered to be equivalent to the projected entitlement.

**Table 19 – Normal Year Supply**

Item	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
<b>Total Entitlement</b>	9,819	9,819	9,819	9,819
<b>Entitlement per Share</b>	1.537	1.537	1.537	1.537

#### 6.1.3 Single Dry Year

SAWCo acknowledges that a significant drop in its ability to produce water may result in a review and respective reduction in entitlement, implementation of mandatory water conservation measures and purchase of imported water at a higher tiered rate. In 2015, the reduced supply necessitated SAWCo to make a downward adjustment to its total entitlement. For purposes of projecting the impact of a single dry year event, the projected 15% reduction in entitlement has been adopted as the single dry year supply for the planning horizon of this UWMP. Table 20 shows the single dry year supply through 2035 on a total entitlement and per share basis.

**Table 20 – Single Dry Year Supply**

Item	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
<b>Total Entitlement</b>	9,819	9,819	9,819	9,819
<b>Entitlement per Share</b>	1.537	1.537	1.537	1.537

#### 6.1.4 Multiple Dry Years

In each of the three years identified in §6.1.1 as the multiple dry years, SAWCo had a reduced entitlement. It is projected that a 15% reduction in entitlement will be in effect for all dry years.

Table 21 shows the multiple dry year supply through 2035 on a total entitlement and per share basis. Note that supply is constant regardless of the projected timeframe or the number of the year in the multiple dry year sequence.



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**Table 21 – Multiple Dry Year Supply**

Year	Item	2015 (AFY)	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
1	Total Entitlement	9,819	9,819	9,819	9,819	9,819
	Entitlement per Share	1.537	1.537	1.537	1.537	1.537
2	Total Entitlement	9,819	9,819	9,819	9,819	9,819
	Entitlement per Share	1.537	1.537	1.537	1.537	1.537
3	Total Entitlement	9,819	9,819	9,819	9,819	9,819
	Entitlement per Share	1.537	1.537	1.537	1.537	1.537

### 6.1.5 Assessment of Supply Availability during an Immediate Drought

*§10632(b) Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.*

Based on the historic availability of existing supplies and the impact of the 2013-2015 multiple-year drought, the minimum supply is estimated to be equivalent to the projected supply available in section 225.2. As required by SAWCo's Bylaws, the entitlement will be reduced to reflect the current available supply. The entitlement may vary in the future based upon their production capabilities.

**Table 22 – Minimum Supply Available**

2016 (AFY)	2017 (AFY)	2018 (AFY)
9,590	9,590	9,590

### 6.1.6 Assessment of Supply Reliability during Normal, Single Dry, and Multiple Dry Years

*§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.*



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According to SAWCo's Bylaws, total entitlement is equivalent to the water the company is able to produce:

*SAWCo Bylaws §10.01 No water shall be supplied by company to anyone who is not a shareholder, and all water shall be supplied at cost. ...each shareholder shall be entitled to receive such part of the entire water of the company that is available for distribution as the number of shares of stock held by him bears to the number of shares outstanding.*

Therefore, in this context, there is no difference between supply and demand rendering moot the reliability assessment described in §10635(a). For purposes of this UWMP, data contained in Table 19.

Table 20 and Table 21 shall serve as the projected supply and demand under normal year, single dry year and multiple dry year conditions, respectively.

### 6.2 Potential Supply Issues and Constraints

*§10631(c)(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.*

Planning documents inherently deal with uncertainties about the future. Uncertainty cannot be avoided; however, adequate documentation and applied reason ensure the defensibility of future supply claims as presented in the previous sections. The continued reliability of the diverse sources of supply at SAWCo's disposal is contingent upon the weather patterns, rainfall, and snowpack. The following steps have been employed, documented as necessary, to satisfy issues surrounding supply uncertainty as they pertain to development of this UWMP:

- ◆ Acknowledge the uncertainty
- ◆ Specify the conclusion and how the conclusion was reached
- ◆ Reference supporting evidence
- ◆ Evaluate the likelihood that the conclusion is incorrect based on existing conditions
- ◆ Provide an alternative in case the conclusion is proved incorrect
- ◆ Respond to comments regarding the conclusion
- ◆ Use the latest and best data available





- 💧 Meter replacement program
- 💧 Maximize capture of right in San Antonio Creek and Cucamonga Basin (Frankish Tunnel)
- 💧 Use interconnections with other water purveyors
- 💧 Prayed for rain

### 6.2.1 Six Basins Constraints

The major known constraint associated with production of groundwater extracted from Six Basins is reduced groundwater level and specific yield.

The largest current shareholder is the City of Upland. A portion of the infrastructure dedicated to extracting groundwater from Six Basins is configured to deliver water directly to the City of Upland without comingling that water with other sources. With the current ability to deliver water to the WFA on behalf of its entity shareholders that are a party to the WFA, SAWCo will be able to produce its entire rights in Six Basins which is predicated on the ability to produce based on groundwater levels.

There is a corresponding increase in the safe yield of the area basins as well as in the availability of surface water in San Antonio Creek/Canyon during wet years. As such, any lack of production of rights in Six Basins is offset by increased production from other sources. The inability to produce all rights in Six Basins due to the City of Upland rejecting delivery has never resulted in a water shortage, and no such shortage is anticipated in the future. In the event of a recurring pattern of rejection of delivery by the City of Upland resulting in a strain on overall supply, SAWCo may consider an engineering solution including increasing production elsewhere in Six Basins or reconfiguring existing transmission infrastructure to divert rejected production to other shareholders.

### 6.2.2 Cucamonga Basin Constraints

There are two known constraints associated with production of groundwater extracted from the Cucamonga Basin: (1) water quality, (2) aging production infrastructure.

#### Water Quality

DBCP and nitrates have been detected in production from four of the existing wells extracting groundwater from the Cucamonga Basin, Wells 2, 3, 24 and 31. Production from Wells 2, 3 and 24 is delivered to the City of Upland where it is blended with other sources at the City's disposal. Per the SAWCo Bylaws, deliveries from these sources are classified as "irrigation". Water quality standards for "irrigation" shares are less rigorous than for "domestic" shares. Blending or treatment of "irrigation" water to potable water standards is the purview of the City of Upland who currently has such infrastructure and facilities in place.



### Aging Production Infrastructure

Four of the existing wells extracting from the Cucamonga Basin, Wells 2, 3, 22, 24, are aging cable-tool wells that have been in use for over 60 years. Despite the age and condition of these wells, the 2010 Water System Master Plan concluded that there is adequate production redundancy for SAWCo to obtain all of its rights in the Cucamonga Basin. As a result, there were no recommendations to construct new wells in this basin. SAWCo monitors its wells on a continuous basis and replacement of the older Cucamonga Basin wells may be considered in the future.

#### 6.2.3 Chino Basin Constraints

The major known constraints associated with production of groundwater extracted from the Chino Basin is the limited operating safe yield and aging production infrastructure.

#### Limited Operating Safe Yield

SAWCo's opportunity to extract groundwater from the Chino Basin is limited by the Operating Safe Yield (OSY) which will be determined by the Court.

### Aging Production Infrastructure

SAWCo operates Chino Basin Well 15 which is an old cable tool utilizing a submersible pump due to the deviated column prohibiting the use of a more efficient vertical turbine. The 2010 Water Master Plan recommended replacing this well in order to increase production. Constraints for developing a new well on existing Water Company's 20<sup>th</sup> Street site places the well within the transition zone between Cucamonga & Chino Basin with limited production.

#### 6.2.4 San Antonio Tunnel Constraints

SAWCo is entitled to all water from the San Antonio Tunnel. However, SAWCo is not allowed to expand the existing tunnel. It is possible that tunnel production will diminish in the distant future due to the normal deterioration of the materials used to construct it. There is currently no indication of a reduction in capacity. Although expansion of the tunnel is not allowed, there is no restriction on improvements made to spreading facilities which influence tunnel production. Furthermore, in the event that all or a portion of the tunnel's capacity is lost, spreading water normally intended to augment tunnel flow will be spread in one of the area basins for long-term storage.

### 6.3 Water Quality

*§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*





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*Section 10631, and the manner in which water quality affects water management strategies and supply reliability.*

There are water quality issues that are currently being addressed with the State Board pending disposition of its delivery for domestic supply.

#### 6.4 Regional Supply Reliability

As detailed in section 5.1, SAWCo has a variety of local water rights that allows them to have the flexibility and redundancy to maximize local water resources. In addition, their Bylaws allow them the flexibility to reduce entitlement if they are unable to produce enough water to meet the full entitlements. These flexibilities prevent the need for SAWCo to import water and exclusively use their local water resources to meet their demand.



## CHAPTER SEVEN – WATER SHORTAGE CONTINGENCY PLAN

### 7.1 General Information

*§10632(a)(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 which are applicable to each stage.*

*§10632(a)(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.*

*§10632(a)(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.*

*§10632(a)(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.*

*§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.*

*§10632(a)(6) Penalties or charges for excessive use, where applicable.*

*§10632(a)(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.*

*§10632(a)(8) A draft water shortage contingency resolution or ordinance.*

*§10632(a)(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.*

The SAWCo Board of Directors adopted in 2006 Resolution No. 2006-06-03 entitled “Water Shortage Contingency Plan”. The sections that follow describe in detail the



## CHAPTER SEVEN – WATER SHORTAGE CONTINGENCY PLAN

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contents and methodologies for implementation of plan. Resolution No. 2006-06-03 is included in its entirety in Appendix G.

### 7.2 Stages of Action

The implementation of the various rationing stages is to be determined by the Board of Directors. In general, if the implementation of a certain rationing stage fails to produce a sufficient reduction in demand so as to generate a sufficient supply, then a more restrictive stage is to be implemented. The rationing stages are designated as follows:

- ◆ Year Round Stage
- ◆ Moderate Shortage Stage (implemented in March 2014)
- ◆ High Shortage Stage (implemented in March 2015)
- ◆ Severe Shortage Stage

### 7.3 Mandatory Prohibitions and Consumptive Reductions Methods

Year Round Stage:

- ◆ Washing of sidewalks, driveways and parking lots prohibited
- ◆ Excessive irrigation run-off prohibited
- ◆ Customer has 72 hours to repair leaks or breaks within private plumbing or distribution system following notification by the Water Company
- ◆ Landscape irrigation between 10 AM and 6 PM prohibited
- ◆ Washing of vehicles and equipment must be done with a hand held bucket or hand held hose equipped with a nozzle unless at a commercial carwash
- ◆ Establishments shall not provide drinking water unless requested

Moderate Shortage Stage (in addition to all above measures):

- ◆ Landscape irrigation for locations having an even-numbered address is permitted only on even days of the month and having an odd-numbered address only on odd days of the month.
- ◆ Washing of vehicles and equipment must occur at designated areas and only between midnight and noon.
- ◆ Only carwashes operating to approved county standards with equipment to recycle water for reuse within the facility are permitted



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- Refilling or adding water to swimming pools is restricted to designated outdoor water use days between 6 PM and 10 AM
- Use of non-business related ornamental ponds or fountains is prohibited
- The use of potable water to irrigate golf course fairways is prohibited
- The use of fire hydrants shall be limited to emergency related activities

High Shortage Stage (in addition to all above measures):

- Landscape irrigation shall be limited to two days per week between 6pm and 6 AM
- Washing of vehicles is prohibited except when using hose nozzle and on water use days
- Filling of new swimming pools shall be by permit only
- The use of potable water to irrigate golf course tees areas and fairways are prohibited.

Severe Shortage Stage (in addition to the above measures):

- Landscape irrigation shall be limited to one day per week between sundown and 6 AM
- Washing of vehicles is prohibited

#### 7.4 Penalties and Charges

Assessments to shareholders found to be in non-compliance with the provisions of the Water Shortage Contingency Plan are shown in Table 23.

**Table 23 – Assessment for Violation of the Resolution 2006-06-03**

Infraction	Fee
First Occurrence	\$50
Second Occurrence	\$100
Third or More Occurrence	\$500

SAWCo implemented an enforcement program to ensure compliance to the Plan. Table 24 shows details the warnings and fines issued for failures to comply.



## CHAPTER SEVEN – WATER SHORTAGE CONTINGENCY PLAN

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**Table 24 – Conservation Warnings and Fines Issued**

Actions Taken	2014	2015
Warning Notification Letters Issued	94	90
Fines Levied	1	3

### 7.5 Determining Water Shortage Reductions

*§10632 (a)(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.*

Historically, implementation of Water Shortage Contingency Planning has been limited to the short-term recalculation of entitlement. If they are unable to meet entitlements based upon their production capabilities, additional recalculations of entitlement will be implemented.

### 7.6 Impact of Water Shortage Contingency Planning Implementation

Historically, implementation of Water Shortage Contingency Planning has been limited to the short-term recalculation of entitlement, which has successfully averted the need for more severe measures.

#### 7.6.1 Drought Impact

On February 18, 2014, due to the drought conditions and reduced supply, the Board approved to reduce entitlement by 18%. Then on February 17, 2015, due to the Drought Emergency and the back-to-back record dry years, the Board approved to reduce entitlements by an additional 15%. This water shortage contingency planning implementation took effect on March 1, 2015. The urgent notice (Appendix I) stated three effects and actions to reflect the Drought Impact Notice to its shareholders.

1. Effect: Due to reduced water supply, SAWCo will not be able to deliver the current established entitlement.

**Action: The Board approved reducing entitlements by 15%**

What it means to shareholders: There are new Domestic Bi-Monthly billing and Irrigation Monthly Billing based on reduction. New entitlements per billing period are shown in the tables below:

**Table 25 – New Domestic Bi-Monthly Billing Based on Reduction**

For Typical Meter Recording in Cubic Feet (CF) Units				
Months	1 Share	3/4 Share	1/2 Share	1/4 Share
Jan-Feb	8,504	6,378	4,252	2,126
Mar-Apr	10,316	7,737	5,158	2,579



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For Typical Meter Recording in Cubic Feet (CF) Units				
Months	1 Share	3/4 Share	1/2 Share	1/4 Share
May-Jun	14,916	11,187	7,458	3,729
Jul-Aug	18,540	13,905	9,270	4,635
Sep-Oct	16,798	12,599	8,399	4,200
Nov-Dec	9,688	7,267	4,844	2,423

Table 26 – New Irrigation Monthly Billing Based on Reduction

For Typical Meter Recording in Cubic Feet (CF) Units				
Months	1 Share	3/4 Share	1/2 Share	1/4 Share
Dec-Feb	4,252	3,189	2,126	1,063
Mar.	4,879	3,659	2,440	1,220
Apr.	5,437	4,077	2,718	1,359
May	6,691	5,018	3,346	1,673
June	8,225	6,168	4,112	2,056
Jul-Sep	9,270	6,953	4,635	2,317
Oct.	7,528	5,646	3,764	1,882
Nov.	5,437	4,077	2,718	1,359

- Effect: There will be little or no supplemental water available for use beyond shareholder entitlements.

**Action: The Board approved Tiered rate increase from \$1.13/hcf to \$1.33/hcf (18% increase, drought rate) still applies.**

What it means to shareholders: Shareholders will have to be efficient with their entitlements and if they wish to purchase any more water (if available), the cost would be at the premium cost of \$1.33/hcf.

- Effect: The Governor declared a Drought Emergency urging citizens to reduce their water consumption by 20%. SAWCo's groundwater wells continue to drop along with reduced groundwater production.

**Action: The Board approved to raise the water alert status to "High Shortage Stage" per Resolution No.2006-06-03.**

What it means to shareholders: Shareholders will now be following SAWCo's water conservation program – High Shortage Stage as noted in §7.3.

There is a financial impact to SAWCo due to a water shortage because all water must be provided at cost per the Bylaws. The ultimate responsibility for proper use and conservation of entitlement lies with the shareholders.



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### 7.7 Resolution or Ordinance

SAWCo uses Resolutions No. 2006-06-03 and No. 2007-01-01 as their water shortage contingency plan. These documents are provided as Appendix G and Appendix H.

### 7.8 Drought Planning

*§10631(c)(1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years.*

The principles of the Water Shortage Contingency Plan, as delineated in Resolutions No. 2006-06-03 and No. 2007-01-01, apply equally to water shortages caused by catastrophic disruption and drought.

Section 6.1 represents the historical impact of implementation of Water Shortage Contingency Planning as projected for future supply reliability under normal year, single dry year and multiple dry year conditions, respectively.

### 7.9 Catastrophic Supply Interruption

SAWCo does not have a catastrophic supply interruption plan in place for its customers. Water is supplied based on entitlement only and the entitlement is based on a fixed number of shares held.

As described in section 5.9.3, SAWCo currently has the ability to deliver water via interconnection to the WFA to the City of Upland, MVWD, and the City of Ontario. The interconnection with the City of Upland could potentially provide the ability to negotiate the delivery of imported water for delivery to SAWCo via the WFA and wheeled through the existing emergency connection with the City of Upland. This could potentially provide SAWCo with the ability to import water for distribution in their retail area if they are unable to produce sufficient water to meet their retail demands.



## CHAPTER EIGHT – DEMAND MANAGEMENT MEASURES

### 8.1 Demand Management Measures for Wholesale Agencies General Information

*§10631(f)(1)(A) and (B) Provide a description of the supplier's water demand management measures. This description shall include all of the following: For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20 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; (vii) 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.*

For purposes of preparing this UWMP, SAWCo meets the statutory definition of an “urban wholesale water supplier”. SAWCo, as a signatory to the Memorandum of Understanding Regarding Urban Water Conservation Best Management Practices (MOU) by the California Urban Water Conservation Council (CUWCC), has been reporting the implementation of Best Management Practices (BMP) as a retailer.

#### 8.1.1 Metering

All deliveries are metered at this time.

#### 8.1.2 Water Conservation Programs

SAWCo, in conjunction with a water auditing firm, is offering free residential water audits to assist customers with the evaluation of their water use practices and to offer recommendations to lower water usage (only 1 audit per customer). SAWCo customers can get a free evaluation of their outdoor landscape irrigation system. Most homes use 60-70% of their water outdoors, and 2-3 times what they need to use.





### 8.2 Water Conservation Program Coordination and Staffing Support

SAWCo does not have a dedicated water conservation coordinator, but employs administrative staff devoted to commit part time as the SAWCo's water conservation representative.

### 8.3 Other Demand Management Measures

SAWCo currently participates in the following rebate programs provided by IEUA in their service areas. More information on each of these rebates can be found on their website: <http://www.sawaterco.com/current-rebates>.

#### **High-Efficiency Clothes Washers**

Using high-efficiency washers is a way to reduce water and energy usage in the home. The high-efficiency washers only use about 20-60% of water compare to traditional washers, which translate to energy savings as it uses as little as 20-50% of energy because there is less water to heat. SAWCo offers \$150 rebate for purchase of a high-efficiency washers. A listing of high-efficiency washers can be found at SoCal WaterSmart web site.

#### **Weather-Based Irrigation Controllers**

The Weather-based irrigation controllers (WBICs) helps to reduce overwatering by applying water only when plants need it. It provides the appropriate watering schedule, adjust for weather changes and irrigate based on the needs of the landscape and soil conditions. SAWCo offers rebates starting at \$150 per controller for less than one acre of landscape and \$50 per station for more than one acre of landscape.

#### **Rotating Sprinkler Nozzles**

Rotating Sprinkler Nozzles use less water than traditional sprinkler because it operates with lower precipitation rates, have greater distribution uniformity and have greater coverage. The rotating nozzles is a great water conservation tool as it applies water more slowly and uniformly than conventional sprays, especially when adjusted for specific site conditions. To help with wasteful water runoff, check out SoCal WaterSmart for recommended rotating nozzles. SAWCo offers \$2 per nozzle rebates with a minimum quantity of 30 nozzles.

#### **Rain Barrels and Cisterns (new)**

Rain Barrel and Cistern can be installed to capture stormwater and runoff from rooftops and store for later use. They are low-cost systems that will allow you to supplement your water supply with a sustainable source and help preserve local watersheds by detaining rainfall. It's a great way to conserve water and to protect the environment. SAWCo web site provides a list of requirements for rain barrels and cisterns. They offer a \$75 rebate for the purchase of a rain barrel or cistern.



### Single Family/Multi Family High Efficiency Toilet

High efficiency toilets use less water than conventional toilet and flushes just as effectively with the same amount of waste. This is a good method of water preservation to meeting current regulations to conserve water. SoCal WaterSmart provides a list of products for available models. SAWCo offers a rebate of \$40 for a 1.08 GPF toilet.

### Soil Moisture Sensor Systems

Soil Moisture Sensor Systems helps to save water by sensing the moisture in the soil and regulate the irrigation system for watering in response to changes of the weather. SAWCo offers this rebate of \$150 per station less than one irrigated acre or \$50 per irrigation sensor for large residential sites. SoCal WaterSmart provides a list of qualified products.

### 8.3.1 Water Audits, Leak Detection and Repair

SAWCo regularly reconciles its production and delivery records. There is a general maintenance program in place for leak detection and repair.

### 8.4 Asset Management

SAWCo uses an “Asset Depreciation Schedule” that provides equipment service life for different types of water distributions facilities. A straight-line depreciation method is used by SAWCo to determine remaining service life estimates of existing equipment for the purposes of making replacement recommendations. Further details can be found in Chapter 4 of their “2010 Water System Master Plan”<sup>9</sup> SAWCo also maintains an annual maintenance budget to respond to needed repairs and perform routine preventive maintenance.

<sup>9</sup> San Antonio Water Company Water System Master Plan, published June 2010



## CHAPTER NINE – PLAN ADOPTION, SUBMITTAL AND IMPLEMENTATION

### 9.1 Public Hearing

*§10642 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 the supplier provides water suppliers.*

Notification letters were sent during the first week of March 2016 to notify the cities and counties that SAWCo supplies water to the 2015 Urban Water Management Plan (UWMP) is being prepared in compliance with the Urban Water Management Planning Act.

Prior to adopting the Plan, public hearing notification letters were sent out June 1, 2016. In addition, a public hearing notification was advertised on June 7, 2016, and June 14, 2016. The public hearing for the 2015 UWMP was held on June, 21, 2016.

### 9.2 Adoption

*§10621(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).*

*§10642 After the hearing, the plan shall be adopted as prepared or as modified after the hearing.*

This UWMP was adopted June 21, 2016. The Resolution No. 2016-06-01 of adoption can be found in Appendix P.

### 9.3 Review

*§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.*

*§10642 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*



## CHAPTER NINE – PLAN ADOPTION, SUBMITTAL AND IMPLEMENTATION

### SAN ANTONIO WATER COMPANY

*county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area.*

The SAWCo Board of Directors received a preliminary presentation of the final draft, and provided comments and instructions for their vision of a complete and comprehensive document. The following stakeholders were notified of SAWCo's intent to adopt this UWMP at a public hearing, were extended an invitation soliciting comments, and were provided access to a copy of the final draft for review purposes (see Appendix O):

- ◆ City of Ontario
- ◆ Cucamonga Valley Water District
- ◆ City of Upland
- ◆ Monte Vista Water Company
- ◆ San Bernardino County
- ◆ Three Valleys Municipal Water District
- ◆ Inland Empire Utilities Agency
- ◆ City of Pomona

#### 9.4 Plan Submittal

*§10621(d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.*

*§10644(a)(1) 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.*

This 2015 UWMP was submitted on June 30, 2016 to the California Department of Water Resources.

#### 9.5 Online Data Submittal

*§10644(a)(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and*



## CHAPTER NINE – PLAN ADOPTION, SUBMITTAL AND IMPLEMENTATION

SAN ANTONIO WATER COMPANY

*shall include any standardized forms, tables, or displays specified by the department.*

DWR is establishing an online data submittal portal for urban water suppliers. Suppliers will be able to go online and complete tables and download them into their plans. The portal, referred to as WUEdata (DWR's Water Use Efficiency Online Submittal Tool), will have an audit system to allow suppliers to double check they have submitted all the data. Suppliers who use the online data submittal system and have a state water grant or loan or have submitted a grant proposal will receive priority review. DWR sees on line data submittal as a way to speed up reviews, better manage the data received, standardize data reporting, and enable a direct linkage to the data used to prepare the California Water Plan.

### 9.6 Public Availability

*§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.*

SAWCo will have a hard copy of its 2015 UWMP available at their offices and available on their website.

### 9.7 Implementation

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

Pursuant to the Resolution of Adoption, SAWCo will implement this UWMP.

### 9.8 Acknowledgements

We, at **Civiltec** would like to express our appreciation for the cooperation and valuable assistance of San Antonio Water Company. In particular, the efforts of the following people, proved to be invaluable:

- ◆ Charles Moorrees, General Manager
- ◆ Teri Layton, Assistant Manager – Administration and Finance



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## Appendix A

### 2015 UWMP Guidebook Checklist

## Checklist Arranged by Subject

<b>CWC Section</b>	<b>UWMP Requirement</b>	<b>Subject</b>	<b>Guidebook Location</b>	<b>UWMP Location</b> <i>(Optional Column for Agency Use)</i>
<b>10620(b)</b>	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	<b>1.1</b>
<b>10620(d)(2)</b>	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	<b>1.4</b>
<b>10642</b>	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	<b>1.4</b>
<b>10631(a)</b>	Describe the water supplier service area.	System Description	Section 3.1	<b>2.1</b>
<b>10631(a)</b>	Describe the climate of the service area of the supplier.	System Description	Section 3.3	<b>2.2</b>
<b>10631(a)</b>	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	<b>2.3</b>
<b>10631(a)</b>	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	<b>2.3.2</b>
<b>10631(a)</b>	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	<b>2.3.2</b>
<b>10631(e)(1)</b>	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	<b>3.1</b>
<b>10631(e)(3)(A)</b>	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	<b>3.2</b>
<b>10631.1(a)</b>	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	<b>3.4</b>
<b>10608.20(b)</b>	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	-
<b>10608.20(e)</b>	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	-

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			
<b>10608.22</b>	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	-
<b>10608.24(a)</b>	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	-
<b>10608.24(d)(2)</b>	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	-
<b>10608.36</b>	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	<b>4.2</b>
<b>10608.40</b>	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	-
<b>10631(b)</b>	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	<b>5.2, 5.10</b>
<b>10631(b)</b>	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	<b>5.3</b>
<b>10631(b)(1)</b>	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	<b>5.3</b>
<b>10631(b)(2)</b>	Describe the groundwater basin.	System Supplies	Section 6.2.1	<b>5.3</b>
<b>10631(b)(2)</b>	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	<b>5.3</b>
<b>10631(b)(2)</b>	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	<b>5.3</b>
<b>10631(b)(3)</b>	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	<b>5.3</b>

	groundwater pumped by the urban water supplier for the past five years			
<b>10631(b)(4)</b>	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	<b>5.3, 5.10</b>
<b>10631(d)</b>	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	<b>5.8</b>
<b>10631(g)</b>	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	
<b>10631(h)</b>	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	<b>5.9</b>
<b>10631(j)</b>	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	<b>N/A</b>
<b>10631(j)</b>	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	<b>1.4</b>
<b>10633</b>	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	<b>5.6</b>
<b>10633(a)</b>	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	<b>5.6</b>
<b>10633(b)</b>	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	<b>5.6</b>
<b>10633(c)</b>	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	<b>5.6</b>
<b>10633(d)</b>	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	<b>5.6</b>
<b>10633(e)</b>	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	<b>5.6</b>

	of the actual use of recycled water in comparison to uses previously projected.			
<b>10633(f)</b>	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	<b>5.6</b>
<b>10633(g)</b>	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	<b>5.6</b>
<b>10620(f)</b>	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	<b>6.1, 6.4</b>
<b>10631(c)(1)</b>	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	<b>7.9</b>
<b>10631(c)(1)</b>	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	<b>7.9</b>
<b>10631(c)(2)</b>	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	<b>6.2</b>
<b>10634</b>	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	<b>6.3</b>
<b>10635(a)</b>	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	<b>6.1.1, 6.1.6</b>
<b>10632(a) and 10632(a)(1)</b>	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	<b>7.1</b>
<b>10632(a)(2)</b>	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	<b>7.1</b>
<b>10632(a)(3)</b>	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	<b>7.1</b>
<b>10632(a)(4)</b>	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	<b>7.1</b>
<b>10632(a)(5)</b>	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	<b>7.1</b>

<b>10632(a)(6)</b>	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	<b>7.1</b>
<b>10632(a)(7)</b>	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	<b>7.1</b>
<b>10632(a)(8)</b>	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	<b>7.1</b>
<b>10632(a)(9)</b>	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	<b>7.1, 7.5</b>
<b>10631(f)(1)</b>	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	<b>N/A</b>
<b>10631(f)(2)</b>	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	<b>8.1</b>
<b>10631(i)</b>	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	<b>5.7</b>
<b>10608.26(a)</b>	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	-
<b>10621(b)</b>	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	-
<b>10621(d)</b>	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	<b>1.1, 9.4</b>
<b>10635(b)</b>	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	-

<b>10642</b>	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	<b>9.1, 9.3</b>
<b>10642</b>	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	<b>9.1, 9.3</b>
<b>10642</b>	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	-
<b>10644(a)</b>	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	-
<b>10644(a)(1)</b>	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	<b>9.4</b>
<b>10644(a)(2)</b>	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	<b>9.5</b>
<b>10645</b>	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	<b>9.6</b>



## Appendix B

### Legal Opinion Regarding SAWCo's Status as a Wholesale Supplier





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Refer To File #: 290839-0001

VIA E-MAIL AND U.S. MAIL

February 10, 2011

Charles Moorrees  
General Manager  
San Antonio Water Company  
139 North Euclid Avenue  
Upland, CA 91786-6036



**Re: The San Antonio Water Company's Obligations Under the Water Conservation Act of 2009**

Dear Charles:

You asked us to prepare an advisory opinion regarding the San Antonio Water Company's ("SAWCO") obligations under the Water Conservation Act of 2009 ("the Act").

**A. Summary**

SAWCO is not completely exempt from the Act, because neither the Act nor the Guidebook provides a statutory exemption for mutual water companies. However, under the Act, SAWCO is properly characterized as a "wholesale water supplier", as opposed to a "retail water supplier". Because of SAWCO's status as a "wholesaler", the Act's planning requirements will not add very many obligations to the water management planning process already mandated by the Water Code.

**B. Statutory Definitions and Analysis**

The Act defines "urban wholesale water supplier" as 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." (Cal. Water Code § 10608.12 (r)) (All future references are to the Cal. Water Code, unless otherwise indicated).

The Act defines "urban retail water supplier" as 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." (§ 10608.12 (p))



The Act and the draft Department of Water Resources Guidebook<sup>1</sup> ("DWR Guidebook") provide no substantive guidance regarding how to interpret these definitions. However, based on your representations of SAWCO's historic deliveries, SAWCO most likely qualifies as a "wholesale supplier".

SAWCO is not a "retail supplier" because it does not meet the statutory definition. Per your communication, SAWCO has only approximately 1,200 direct end users. Those users and other consumers who buy SAWCO water at retail prices do not purchase more than 3,000 acre-feet per year. Over the last five years, the total number of annual acre-feet purchased from SAWCO at retail prices has ranged from a high of 1,704.13 in 2006 to a low of 1,180.76 in 2010. Accordingly, SAWCO is below both the 3,000 direct end users threshold, and below the 3,000 annual acre-feet sold at retail threshold. Based on these numbers, SAWCO does not meet the statutory definition of "urban retail water supplier" as codified in § 10608.12 (p).

SAWCO most likely meets the statutory definition of "Urban wholesale water supplier". The numbers you provided indicate that, over the last five years, SAWCO has delivered between 8,879.078 and 12,013.507 acre-feet per year to Upland and Ontario, with Upland purchasing between eight and eleven thousand acre-feet per year. Upland pays a wholesale price, and primarily uses the SAWCO water for potable municipal purposes. Therefore, SAWCO is well over the 3,000 acre-feet per year threshold and meets the statutory definition of "urban wholesale water supplier" as codified in § 10608.12 (r).

### **C. Implications of SAWCO being a "wholesaler", and not a "retailer"**

The Act requires urban retail water suppliers to develop water use targets by July 1, 2011 that, by 2020, will lead to 20% reductions in per capita water use. As part of this process, retail suppliers have to set the baseline daily per capita water use, a water use target, an interim water use target, and compliance daily per capita water use, along with the bases for determining those estimates. (§ 10608.20 (e))

On the other hand, the Act imposes less burdensome obligations on wholesale water suppliers. In addition to their pre-existing Urban Water Management Plan obligations, the Act requires wholesalers to add an assessment of their present and future plans and policies that would help achieve the Act's water use reduction targets: "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 [the Act]." (§ 10608.36)

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<sup>1</sup> Available at: [http://www.water.ca.gov/urbanwatermanagement/docs/UWMP\\_ReviewDraft.pdf](http://www.water.ca.gov/urbanwatermanagement/docs/UWMP_ReviewDraft.pdf). The final version of the Guidebook will be released in late February, 2011.



There is no specific guidance in the Act or DWR Guidebook regarding what kinds of plans and policies should be described in the analysis mandated by § 10608.36. One possibility would be to evaluate the 14 demand management measures set forth in § 10631(e). (This approach was proposed by Anthony Herda, Staff Engineer at Civiltec Engineering Inc.) Peter Brostrom, an official at the Department of Water Resources who is heavily involved with implementing the Act, indicated that this would be a valid approach, but that water suppliers have flexibility in how they achieve compliance with § 10608.36.

The overall goals of the § 10608.36 requirement are to get wholesale suppliers to think about conservation, to educate the public, and to assist retail suppliers with their planning. The DWR guidance indicates that the section's requirements are, in large part, aspirational:

Wholesale water suppliers are required to include in their UWMPs discussions of programs they intend to implement to support water demand reduction goals. Although wholesale water suppliers are not required to determine baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, programs that the wholesale suppliers implement may support the retail water suppliers to attain their goals and targets. (DWR Guidebook, 3-3)

The Guidebook's analysis reflects the fact that § 10608.36 mandates planning, but does not mandate implementation. The Act left that task to the retail suppliers, who are in a better position to affect users' consumption.

#### **D. Additional Considerations**

Mr. Herda emphasized that, in light of the Act's new obligations vis-à-vis retail suppliers, wholesale suppliers' reliability assessment becomes more important. This analysis was already required before the Act by § 10635 (a). That section required all water suppliers (including wholesalers) to prepare, as part of the urban water management plan, "an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years." (§ 10635 (a))

This requirement becomes more significant now that the Act is in force. By providing an assessment of its water supply reliability, SAWCO can assist its wholesale customers, such as Upland, in preparing their own water management plans as they seek to comply with the Act.

To facilitate compliance with the new planning requirements, the Act extended the deadline for submitting an urban water management plan: "An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6



(commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers." (§ 10608.20 (j)(2))

**E. Conclusion**

Based on the numbers you have provided us, we conclude that, per the statutory definitions added to the Water Code by the Act, SAWCO is an urban wholesale water distributor but not an urban retail water supplier. As such, it is required to comply with the planning requirements of § 10608.36. However, it does not appear that SAWCO will be required to comply with the Act's other, more comprehensive planning requirements.

Very truly yours,

Frederic A. Fudacz  
of Nossaman LLP

FAF/vcd

cc: Thomas H. McPeters, Esq.



## Appendix C

### AWWA Water Audit Software

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

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

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

**Please begin by providing the following information**

Name of Contact Person:

Email Address:

Telephone (incl Ext.):

Name of City / Utility:

City/Town/Municipality:

State / Province:

Country:

Year:

Start Date:  Enter MM/YYYY numeric format

End Date:  Enter MM/YYYY numeric format

Audit Preparation Date:

Volume Reporting Units:

PWSID / Other ID:

**The following guidance will help you complete the Audit**

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

<input type="text"/>	Value can be entered by user
<input type="text"/>	Value calculated based on input data
<input type="text"/>	These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: ☐ 0.25% ☒ Value:

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

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

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

**Instructions**

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

**Reporting Worksheet**

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

**Comments**

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

**Performance Indicators**

Review the performance indicators to evaluate the results of the audit

**Water Balance**

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

**Dashboard**

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

**Grading Matrix**

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

**Service Connection Diagram**

Diagrams depicting possible customer service connection line configurations

**Definitions**

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

**Loss Control Planning**

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

**Example Audits**

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

**Acknowledgements**

Acknowledgements for the AWWA Free Water Audit Software v5.0

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

Reporting Worksheet 2

Water Audit Report for: **San Antonio Water Company**Reporting Year: **2015** **1/2015 - 12/2015****\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 80 out of 100 \*\*\*****System Attributes:**

Apparent Losses: **73.277** acre-ft/yr  
 + Real Losses: **712.133** acre-ft/yr  
 = **Water Losses: 785.411** acre-ft/yr

? Unavoidable Annual Real Losses (UARL): **See limits in definition** acre-ft/yr

Annual cost of Apparent Losses: **\$16,279**

Annual cost of Real Losses: **\$158,094** Valued at **Variable Production Cost**  
 Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial: {

Non-revenue water as percent by volume of Water Supplied: **39.6%**Non-revenue water as percent by cost of operating system: **5.0%** Real Losses valued at Variable Production Cost

Operational Efficiency: {

Apparent Losses per service connection per day: **46.56** gallons/connection/dayReal Losses per service connection per day: **452.49** gallons/connection/dayReal Losses per length of main per day\*: **N/A**Real Losses per service connection per day per psi pressure: **6.96** gallons/connection/day/psiFrom Above, Real Losses = Current Annual Real Losses (CARL): **712.13** acre-feet/year

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

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



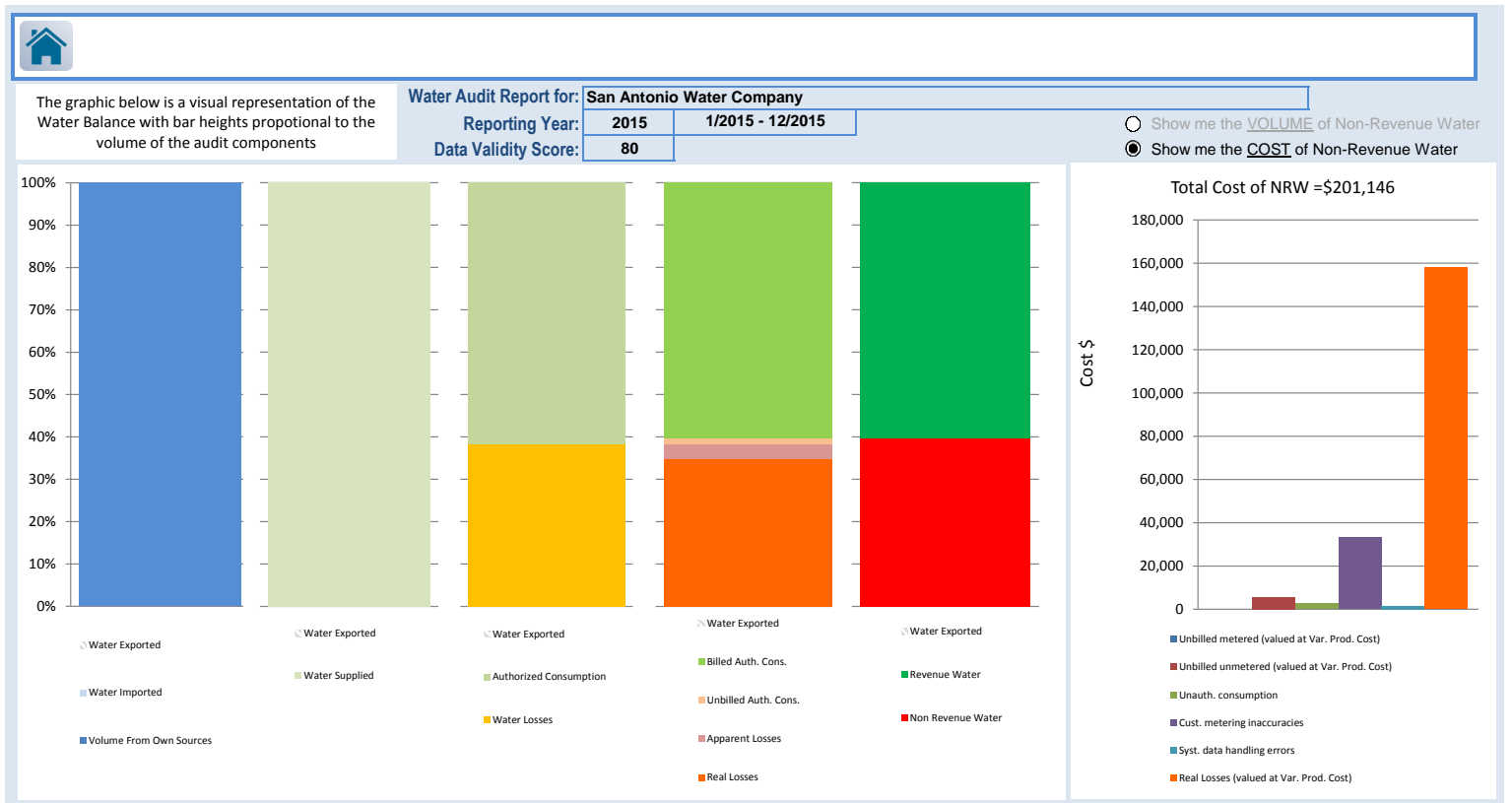

Water Audit Report for: **San Antonio Water Company**

Reporting Year: **2015**

1/2015 - 12/2015

Data Validity Score: **80**

Own Sources (Adjusted for known errors)  2,047.301	Water Exported 0.000	Billed Water Exported			
	Water Supplied  2,047.301	Authorized Consumption  1,261.890	Billed Authorized Consumption  1,236.299	Billed Metered Consumption (water exported is removed)  1,236.299	Revenue Water  1,236.299
			Unbilled Authorized Consumption  25.591	Billed Unmetered Consumption  0.000	Non-Revenue Water (NRW)  811.002
				Unbilled Metered Consumption  0.000	
				Unbilled Unmetered Consumption  25.591	
		Water Losses  785.411	Apparent Losses  73.277	Unauthorized Consumption  5.118	
				Customer Metering Inaccuracies  65.068	
				Systematic Data Handling Errors  3.091	
			Real Losses  712.133	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					
Water Imported  0.000					




Water Audit Report for: **San Antonio Water Company**

Reporting Year: **2015** **1/2015 - 12/2015**

Data Validity Score: **80**

### Water Loss Control Planning Guide

Water Audit Data Validity Level / Score					
Functional Focus Area	Level I (0-25)	Level II (26-50)	Level III (51-70)	Level IV (71-90)	Level V (91-100)
Audit Data Collection	Launch auditing and loss control team; address production metering deficiencies	Analyze business process for customer metering and billing functions and water supply operations. Identify data gaps.	Establish/revise policies and procedures for data collection	Refine data collection practices and establish as routine business process	Annual water audit is a reliable gauge of year-to-year water efficiency standing
Short-term loss control	Research information on leak detection programs. Begin flowcharting analysis of customer billing system	Conduct loss assessment investigations on a sample portion of the system: customer meter testing, leak survey, unauthorized consumption, etc.	Establish ongoing mechanisms for customer meter accuracy testing, active leakage control and infrastructure monitoring	Refine, enhance or expand ongoing programs based upon economic justification	Stay abreast of improvements in metering, meter reading, billing, leakage management and infrastructure rehabilitation
Long-term loss control		Begin to assess long-term needs requiring large expenditure: customer meter replacement, water main replacement program, new customer billing system or Automatic Meter Reading (AMR) system.	Begin to assemble economic business case for long-term needs based upon improved data becoming available through the water audit process.	Conduct detailed planning, budgeting and launch of comprehensive improvements for metering, billing or infrastructure management	Continue incremental improvements in short-term and long-term loss control interventions
Target-setting			Establish long-term apparent and real loss reduction goals (+10 year horizon)	Establish mid-range (5 year horizon) apparent and real loss reduction goals	Evaluate and refine loss control goals on a yearly basis
Benchmarking			Preliminary Comparisons - can begin to rely upon the Infrastructure Leakage Index (ILI) for performance comparisons for real losses (see below table)	Performance Benchmarking - ILI is meaningful in comparing real loss standing	Identify Best Practices/ Best in class - the ILI is very reliable as a real loss performance indicator for best in class service

*For validity scores of 50 or below, the shaded blocks should not be focus areas until better data validity is achieved.*

Once data have been entered into the Reporting Worksheet, the performance indicators are automatically calculated. How does a water utility operator know how well his or her system is performing? The AWWA Water Loss Control Committee provided the following table to assist water utilities in gauging an approximate Infrastructure Leakage Index (ILI) that is appropriate for their water system and local conditions. The lower the amount of leakage and real losses that exist in the system, then the lower the ILI value will be.

**Note:** this table offers an approximate guideline for leakage reduction target-setting. The best means of setting such targets include performing an economic assessment of various loss control methods. However, this table is useful if such an assessment is not possible.

Target ILI Range	Financial Considerations	Operational Considerations	Water Resources Considerations
1.0 - 3.0	Water resources are costly to develop or purchase; ability to increase revenues via water rates is greatly limited because of regulation or low ratepayer affordability.	Operating with system leakage above this level would require expansion of existing infrastructure and/or additional water resources to meet the demand.	Available resources are greatly limited and are very difficult and/or environmentally unsound to develop.
>3.0 - 5.0	Water resources can be developed or purchased at reasonable expense; periodic water rate increases can be feasibly imposed and are tolerated by the customer population.	Existing water supply infrastructure capability is sufficient to meet long-term demand as long as reasonable leakage management controls are in place.	Water resources are believed to be sufficient to meet long-term needs, but demand management interventions (leakage management, water conservation) are included in the long-term
>5.0 - 8.0	Cost to purchase or obtain/treat water is low, as are rates charged to customers.	Superior reliability, capacity and integrity of the water supply infrastructure make it relatively immune to supply shortages.	Water resources are plentiful, reliable, and easily extracted.
Greater than 8.0	Although operational and financial considerations may allow a long-term ILI greater than 8.0, such a level of leakage is not an effective utilization of water as a resource. Setting a target level greater than 8.0 - other than as an incremental goal to a smaller long-term target - is discouraged.		
Less than 1.0	If the calculated Infrastructure Leakage Index (ILI) value for your system is 1.0 or less, two possibilities exist. a) you are maintaining your leakage at low levels in a class with the top worldwide performers in leakage control. b) A portion of your data may be flawed, causing your losses to be greatly understated. This is likely if you calculate a low ILI value but do not employ extensive leakage control practices in your operations. In such cases it is beneficial to validate the data by performing field measurements to confirm the accuracy of production and customer meters, or to identify any other potential sources of error in the data.		



## Appendix D

### Rules and Regulations of the Six Basins Watermaster

**RULES AND REGULATIONS OF  
THE SIX BASINS WATERMASTER**

ARTICLE I - WATERMASTER

A. General

The Watermaster was created on December 18, 1998, by Judgment entered in Los Angeles County Superior Court, Case No. KC029152, captioned Southern California Water Company v. City of La Verne, et al. The Watermaster shall operate according to the terms of the Judgment and any amendments thereto. The definitions set forth in said Judgment are listed in Exhibit "A" to these Rules and Regulations and are used herein with the same meanings as in the Judgment.

B. Purpose

The role of the Watermaster is to develop and administer an operating plan to carry out the physical solution adopted by the Court to achieve the efficient and equitable coordinated management of the groundwater within the Six Basin Area as defined in the Judgment to maximize the reasonable and beneficial use of groundwater resources in a manner that is consistent with the public interest, Article X, Section 2 of the California Constitution, and with due regard for the environment.

C. Composition, Voting and Compensation

The Watermaster shall consist of one (1) representative of each of the following Parties, each representative having the right to cast the indicated number of votes on any question or business being considered:

City of La Verne	5 votes
City of Pomona	5 votes
City of Upland	5 votes
Southern California Water Company	5 votes
City of Claremont	2 votes
Three Valleys Municipal Water District	2 votes
Pomona Valley Protective Association	2 votes
Pomona College	1 vote
San Antonio Water Company	1 vote

D. Quorum, Voting

Members having the combined authority to cast twenty (20) votes shall constitute a quorum for the transaction of business of the Watermaster; seventeen (17) affirmative votes shall be required to constitute action by the Watermaster. Any member of the Watermaster may request a roll call vote on any question or motion considered, and the votes cast thereon shall be reflected in the minutes of the meeting.

E. Compensation

Members shall be compensated for their services by their respective Parties which appointed them. Members may be reimbursed by the Watermaster for out-of-pocket expenses incurred in connection with authorized Watermaster business.

F. Committees

The Chair may appoint Watermaster members to such committees as are necessary or appropriate to enable the duties of the Watermaster to be carried out efficiently.

1. Standing Committees

Committees having regular meetings and/or ongoing jurisdiction over certain subject matter are "Standing Committees"; meetings of such committees shall be public meetings, noticed, agendized, and held in accordance with the requirements of the Brown Act for meetings of the Watermaster.

2. Ad Hoc Committees

Committees having jurisdiction over specific issues or which have limited terms, i.e., are topic or issue specific, are "Ad Hoc Committees"; to the extent that members of an ad hoc committee have votes totaling fourteen (14) or more, such meetings shall be public meetings, and shall be held in accordance with the requirements of the Brown Act for meetings of the Watermaster.

G. Offices, Records, Administrative Services

The Watermaster's offices and records shall be maintained at the office of Three Valleys Municipal Water District located at 1021 Miramar Ave., Claremont, California.

Such records as may be obtainable for inspection pursuant to the California Public Records Act shall be made available during regular business hours pursuant to procedures set forth in said Act. Copies of said records may be obtained upon payment of the cost of the duplication thereof and of any preparation cost pertaining thereto as established by the Watermaster.

The Watermaster may contract with Three Valleys Municipal Water District or with any other person or entity deemed appropriate to the Watermaster for the provision of administrative and support services.

## ARTICLE II - WATERMASTER OFFICERS

### A. Offices and Terms

At its first meeting each calendar year, the Watermaster shall elect a chairperson, a vice chairperson, a secretary and a treasurer from its membership and may select such other officers as deemed appropriate. The term of each office shall be from the date of election until replacement by election of a different person the following year; provided, however, that each officer serves at the pleasure of the Watermaster and may be replaced at any time by action of the Watermaster.

### B. Duties

#### 1. Chairperson

The Chairperson shall preside at all meetings of the Watermaster, shall declare the presence of a quorum, and shall announce the Aye and Nay votes on each vote taken. The Chairperson shall follow such procedures as are established by the Watermaster and in the absence thereof shall follow the procedures set forth in Robert's Rules of Order.

#### 2. Vice Chairperson

The Vice Chairperson shall preside over all meetings in the absence of the Chairperson, and undertake such other duties as are assigned by the Chairperson or by the Watermaster.

#### 3. Secretary

The Secretary shall be responsible for the minutes of meetings of the Watermaster and such other duties as are established from time to time by the Watermaster.

#### 4. Treasurer

The duties of the Treasurer shall be those established from time to time by the Watermaster.

## ARTICLE III - WATERMASTER MEETINGS

### A. Procedures

Meetings shall be noticed and conducted in compliance with the requirements of the Ralph M. Brown Act, Government Code sections 54950, et seq.

Meeting procedures shall be according to rules adopted by the Watermaster; in lieu thereof, meetings shall be conducted according to the procedures set forth in Robert's Rules of Order.

B. Regular Meetings

1. General

Regular meetings shall be held as scheduled by the Watermaster but at least once per quarter; such meetings shall be on the fourth Wednesday of the month at 2:00 P. M. Regular meetings shall be held in the Board Room of Three Valleys Municipal Water District, 1021 Miramar Ave., Claremont, California.

Meeting days, dates, times and locations are subject to change, in the discretion of the Watermaster.

A regular meeting falling on a holiday observed by Three Valleys Municipal Water District shall be held on the next business day of said agency.

2. Notice

Notice of regular meetings shall be mailed to any person who has filed a written request for same at least one (1) week before the date scheduled for the meeting.

3. Agenda

An agenda shall be posted at least seventy two (72) hours before a regular meeting in a location freely accessible to the public; the agenda shall contain a brief general description of each item of business to be transacted or discussed (normally, 20 words or less), including items to be discussed in closed session; the agenda shall specify the time and place of the meeting. Subject to statutory exceptions, no action or discussion shall be undertaken on any item not appearing on the posted agenda. Requests for inclusion of an item on the agenda shall be submitted in writing to the Watermaster at least ten (10) days before the next scheduled meeting.

C. Special Meetings

1. General

Special meetings may be called by the Chairperson or by members whose votes total ten (10) or more.

2. Notice

Notice of special meetings called at least one (1) week before the date set for the meeting shall be mailed to any person who has filed a written request for same at least one (1) week before the date scheduled for the meeting. If the meeting is called for less than seven (7) days before its scheduled date, the Watermaster may give such notice at it deems practical,



provided, that such notice shall be given to each member of the Watermaster and to each local newspaper of general circulation, radio or television station requesting notice in writing; such notice shall be delivered personally or by mail and shall be received at least twenty four (24) hours before the time of the meeting as specified in the notice.

The call and notice shall specify the time and place of the special meeting and the business to be transacted or discussed; no other business shall be considered at the meeting.

D. Adjourned Meetings

A regular or special meeting can be adjourned and readjourned to a time and place specified in the order of adjournment. If no time is stated, the meeting is continued to the hour for regular meetings. Less than a quorum may so adjourn a meeting; and if no member of the Watermaster is present, the Secretary may adjourn the meeting.

If a meeting is adjourned for less than five (5) calendar days, no new agenda need be posted--so long as a new item is not introduced. Otherwise, notice provisions for special meetings set out above shall be followed. In addition, a copy of the order of adjournment shall be posted within twenty four (24) hours after the adjournment, at or near the door of the place where the meeting was held.

ARTICLE IV - WATERMASTER DUTIES UNDER JUDGMENT

A. Appointment of Designee to Receive Notices

Each Party shall designate a person who will receive service of all future notices, determinations, requests, demands, objections, reports and other papers and processes that the Watermaster, any Party, and/or the Court are required to serve under any Article of these Rules and Regulations. The name and address of each Designee shall be maintained on file with the Court, and the Watermaster shall maintain a current list of Party Designees and other persons who are to receive notices under the Judgment and their addresses for purposes of service.

The Designee may be the same person as is appointed by a Party to serve as a member of the Watermaster. If no Designee is formally appointed by a Party, said member shall be deemed to be that Party's Designee.

Any Intervening Party shall file a written designation within thirty (30) days of the date of the Court order allowing intervention. In the event no designation is filed, the Designee shall be deemed to be: 1) the Attorney of Record of that Party, or 2) the Party, in the event the Party has no Attorney of Record in the case.

Any Party may appoint a replacement Designee. The new designation shall be filed with the court and served on all Designees. The new designation shall be effective from the date of filing as to any future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that Party.

Service upon any Party by the Watermaster, by any other Party, or by the Court, of any item required to be served upon a Party pursuant to the Judgment may be made by first-class mail, postage prepaid, addressed to the latest Designee of the Party to be served and at the address of said latest designation filed by that Party.

Any Party that no longer desires to receive notices of the Watermaster activity may file a waiver of notice on a form to be provided by the Watermaster.

The Watermaster shall give written notice to the Designees of any proposed action and of any hearing date, at least 30 days before said hearing date.

#### B. Operating Plans

The Watermaster shall prepare and submit to the court, for its approval, an initial Operating Plan. The Watermaster shall provide each Designee with a copy of the proposed initial Operating Plan, and of the date, time and place of the court's hearing at which said initial Operating Plan will be considered.

After adoption of the initial Operating Plan, the Watermaster shall review the Operating Plan at least annually. No later than July 15 of each year, the Watermaster shall mail a report of proposed changes to the Operating Plan to all Designees, with notice of a hearing to be conducted by the Watermaster no later than September 1. At the hearing, objections, suggested corrections and modifications to the Operating Plan will be considered.

No later than the first regular meeting following completion of the hearing, the Watermaster shall make its final determinations on changes to the Operating Plan, and shall mail a copy of its final determinations to all Designees. Any changes shall be submitted to the court for approval by filing a notice motion with the court. The court's hearing on the changes shall be held at least thirty (30) days after mailing of notice of the hearing.

The Operating Plan shall address the following elements: replenishment levels, production requirements and operating safe yield. The principles and procedures contained in the Judgment shall guide Watermaster in establishing and adjusting the Operating Plan.

The initial Operating Plan establishes an Index Water Level of 1455 or higher for five key wells. In the event that Watermaster revises these replenishment requirements, Watermaster shall establish a particular water level for a particular well or set of wells at Watermaster's option.

C. Quantification of Production

1. Production Reports

Each Party must have an accurate method, approved by the Watermaster, for quantifying Production, from each source, and shall report such Production to the Watermaster on forms provided by the Watermaster. Such forms shall contain provision for certification of production reported by declaration under penalty of perjury.

Each Producer shall file with the Watermaster monthly and quarterly reports showing all water produced from the Six Basins. Watermaster shall provide production reports for wells located in the Canyon and Upper Claremont Heights Basins to PVPA for inclusion in the Spread Sheet Model. Reports shall show the total water Production by Production facility of such Party for each reporting period, rounded off to the nearest tenth (10th) of an acre-foot. Assessments shall be calculated by multiplying the applicable assessment rate times the total number of acre-feet of Production. In order to assure the fairness of assessments paid, each Party must provide the Watermaster sufficient information regarding the method of measurement and calculations to enable the Watermaster to verify Production and accuracy of calculating Production.

In addition, Watermaster shall collect water level and water quality data necessary for the operation of the Groundwater Models. Watermaster shall provide this data to PVPA by the 15th of each month. On a monthly basis, PVPA shall provide Watermaster with the readings or measurements on the amount of water spread by day. PVPA shall also provide Watermaster with a monthly report on available storage and water levels of the monitoring or key wells.

2. Access to Records

Each Party shall make its Production records available for inspection and copying by the Watermaster representatives during normal business hours.

3. Measuring Production

a. Flow Measuring Devices

Generally, the term "flow measuring device"

means a meter, weir, flume or other such device.

b. Surface Diversions

Surface water diversions shall be measured with a flume or weir and stage recorder or a meter capable of accurately measuring and recording such diversions.

c. Meters

Generally, the term "meter" shall refer to a positive displacement velocity impeller, venturi or orifice-type meter with a totalizer or other meter acceptable to the Watermaster. Meters shall be accessible and installed according to manufacturer's recommendations and good design practices, provided, however, that the device shall be installed at a distance less than thirty (30) feet from the pump discharge head. Any relief valves or other devices necessary for proper maintenance shall be installed down gradient of the meter.

d. Meter Tests

Each Producer shall be responsible for having each meter tested at least once every two (2) years by a Watermaster approved meter tester. The office of the Watermaster shall send a written request for test results to each party on a periodic basis. If any wells are out of service at the time of meter testing, the party shall have 60 days from the date such wells are returned to service to complete the meter testing. Southern California Edison shall be considered to be an approved meter tester. The name, address and telephone number of all additional Watermaster approved meter testers shall be maintained and be available from the office of the Watermaster. Results of all meter tests shall be submitted to the Watermaster within seven (7) days of test. The tolerance for each meter shall be plus (+) or minus (-) five percent (5%) of the manufacturer's standard. The Watermaster may prospectively require an aggregate accuracy of plus (+) or minus (-) two percent (2%). Meters that are found to be within the specified limits of accuracy shall be sealed by the Watermaster following each test.

e. Repair or Replacement of Inaccurate Meters

Any defective or inaccurate meter must be repaired within thirty (30) days of notification by the Watermaster that the meter is defective. The notice shall include the results of the Watermaster's test and recalculations of Production during the prior assessment period to an accuracy within plus (+) or minus (-) five percent (5%). In the event that the Watermaster is unable to determine the length of time that the meter has been defective, usage may be abstracted and reconstructed from prior meter readings and/or by review of appropriate power records.

f. Interim Meter Tests

Should a Producer discover that a meter which measures the water Production from its well is measuring inaccurately, the Producer shall immediately notify the Watermaster, have the meter retested and, if it is measuring inaccurately, have the same repaired and retested at the earliest practical time.

4. Compliance

Any Party not in compliance with the provisions of this Section B shall be assessed for all applicable assessments based on the Watermaster's estimated Water Production, which shall be not less than the Producer's Base Annual Production Rights.

5. Inaccurate Disclosures

If the Watermaster has reason to believe that any Party is producing Groundwater in excess of its disclosed amounts, the Watermaster may institute an investigation concerning that excess Production. If the investigation concludes that the Production is in excess of the amount disclosed by the Party, then the Party may be assessed in accordance with section E of this Article.

D. Operating Safe Yield

1. Annual Establishment of Operating Safe Yield

Not later than September 15 of the year after the entry of Judgment, and annually thereafter, the Watermaster shall establish the Operating Safe Yield for the Four Basins Production for the following calendar year. In determining the Operating Safe Yield, the Watermaster shall consider all relevant factors, including the amount of water in storage and the need to control water table elevations. The Watermaster's determination of Operating Safe Yield shall be made in accordance with the procedures and time schedule set forth in this section.

2. Preliminary Determination

At Watermaster's meeting, either regular or special, in July of each year, Watermaster shall make a Preliminary Determination of the Operating Safe Yield for the Four Basin area for the coming calendar year and for each of the two succeeding calendar years. Said determination shall be made in the form of a report containing a summary statement of the considerations, calculations and factors utilized by Watermaster in arriving at said Operating Safe Yield.

A copy of the Preliminary Determination Report shall be provided to all Parties at least ten (10) days prior to

a regular or special Watermaster meeting to be held no later than August 15 of each year, at which time a hearing shall be held to consider objections, comments, suggested correction or modification of said determination.

3. Final Determination on Operating Safe Yield

Within thirty (30) days after completion of said hearing, but in no event later than September 15 of each year, the Watermaster shall adopt a Final Report and Determination of Safe Yield and of each Party's entitlement thereto for said calendar year stated in acre feet. Upon adoption of the Final Report, Watermaster shall promptly provide a copy of the report to each party.

E. Assessments

The Watermaster shall levy and collect assessments as provided in the Judgment. With the exception of Replacement Water Assessments, all assessments levied by the Watermaster shall be spread in accordance with subsection VII.A.2 of the Judgment. Absent an agreement filed with the Watermaster that establishes alternative responsibility for payment of assessments, the owner of the Production facility from which the water is produced shall be responsible for payment of assessments.

1. Administrative Budget

a. Draft Budget Goals

By September 30th of each year, the Engineering/Technical and Finance/Administration Committees shall jointly present draft budget goals for the following calendar year to the Watermaster Board. These draft goals shall define the desired service levels, outcomes for products and costs thereof in the following areas:

- ! Watermaster Operations and Administration
- ! Maintenance of Watermaster Facilities and Equipment
- ! Reimbursable PVPA Operations and Maintenance
- ! Watermaster Cash Reserves
- ! Other Specific Watermaster Goals

The draft budget goals shall contain brief descriptions of the scope of any recommended capital project estimated to cost more than \$5,000.00.

b. Final Budget Goals

The Watermaster Board may modify the draft budget goals as necessary, but shall adopt final budget goals by September 30 of each year.

c. Draft Budget

The Watermaster staff shall prepare a draft annual budget based upon the adopted budget goals. The draft budget shall consist of a reasonably detailed analysis of estimated expenses for the upcoming budget year. The staff shall present the draft budget to the Watermaster Board by October 31 of each year.

d. Final Budget

The Watermaster Board may modify the draft budget as necessary, but shall adopt the final budget by November 30 of each year. Any modification of the draft budget shall be accompanied by a corresponding change to either the proposed budget assessments or the projected cash reserves.

2. Payment of Budget Assessments

a. Draft Assessment

Annually, the Watermaster staff shall recommend to the Watermaster Board assessment levels needed to support the draft annual budget and the cash reserve budget goal. The Watermaster staff shall present this recommendation concurrently with the draft budget by October 31 of each year.

b. Final Assessment

The Watermaster Board may modify the recommended assessments, but shall adopt final assessment levels concurrently with adoption of the final annual budget.

c. Apportionment of Assessment

Assessments shall be apportioned in accordance with Section VII of the Judgment.

d. Invoicing of Assessment

The Watermaster staff shall invoice all affected parties for adopted budget assessments by January 15 of each year. Payment of the assessments can be made in two equal installments. The first installment must be at least half of the total assessment, and shall be paid, in full, to Watermaster staff by February 15 of each year. The second installment must include the balance of the assessment owed, and shall be paid to the Watermaster staff by August 15 of each year. Late payments

shall be subject to interest penalties in the amount of One Percent (1%) per month (Twelve Percent (12%) per year).

3. Replacement Water Assessments

a. Replacement Water Obligation

Annually, by May 31, the Watermaster staff shall recommend to the Watermaster Board monetary replacement water assessment levels needed to meet the replacement levels needed to meet the replacement water obligation of each party for the previous calendar year. Replacement water obligations shall be determined in accordance with Section VI of the Judgment.

b. Alternate Methods to Satisfy Replacement Water Obligation

Parties may propose to the Watermaster Board such alternate means of meeting their replacement water obligations as allowed by the Judgment and the Operating Plan. Such Proposals shall be made in writing by July 31 of each year.

c. Hearing for Replacement Water Assessment

Watermaster shall hold a hearing no later than September 15 for the purpose of setting the assessment for replacement water obligations. The assessments will be based on the recommendations set forth in Section 10.31 of the Operating Plan, and on any acceptable alternate methods submitted pursuant to Section 10.3.2 of the Operating Plan.

d. Invoicing of Replacement Water Assessments

Following the conclusion of the hearing, the Watermaster shall invoice adopted replacement water assessments to the affected parties. Assessments are due and payable in full to the Watermaster no later than sixty (60) days from the date of invoice. Late payments shall be subject to additional interest penalties in the amount of One Percent (1%) per month (Twelve Percent (12%) per year).

4. Delinquent Assessments

Any delinquent assessment, and interest accruing thereon, may be collected in a Show Cause hearing by the court as part of this adjudication of the basin, or in a separate legal proceeding instituted by the Watermaster. In any such proceeding, the Court may allow the Watermaster its reasonable costs of collection, including attorney's fees.



F. Annual Report

The Watermaster shall file an Annual Report with the Court, no later than June 1st of each year, beginning with April 1 following the first full year after entry of Judgment. The report shall include an annual fiscal report of the preceding year's operations, a list of all transfers and Carryover Rights, an audit of all Assessments and expenditures, and a review of the Watermaster's activities pursuant to the Judgment. Prior to filing the Annual Report with the Court, the Watermaster shall provide all Designees with a draft of the report and with notice of a hearing by the Watermaster to occur at least thirty (30) days after notice is given. At the hearing, the Watermaster will receive comments and recommendations for changes in the report. The final report shall be submitted to the Court for approval after said hearing.

G. Carryover Rights

Up to twenty-five percent (25%) of any Producer's share of the Operating Safe Yield that is not produced in a given year may be carried over and accumulated for one (1) year. The first water produced in the succeeding year shall be deemed produced pursuant to such Producer's Carryover Rights. Such Carryover Rights may be transferred in accordance with these Rules and Regulations.

H. Transfer of Rights

Transfers of a Producer's Base Annual Production Right (including Carryover Rights) and its associated percentage of operating safe yield may be undertaken as set forth in this Section. The Watermaster shall not approve any proposed permanent transfer unless all current and past due assessments, interest and penalties owed to the Watermaster by both Transferee and/or Transferor have been paid prior to the date that the proposed permanent transfer is submitted to the Watermaster, and Transferee and Transferor have complied with Article IV, Section C, regarding Quantification of Production. Any permanent transferee must be or become a Party to the Judgment prior to the date of the transfer.

Approval of the Watermaster is not required for temporary transfers or leases. However, the parties to the transfer shall formally notify the Watermaster of the transfer as provided in Subsection 1 of this Section (Article IV, Section H).

1. Procedure

To transfer a Base Annual Production Right or portion thereof, the Parties must file with the Watermaster a copy of the appropriate transfer documents that: (a) Identify the Transferee(s), Transferor(s), the Parties responsible for payment of assessment, the Party to receive any Carryover credit, and the

Designee(s) of both the Transferor(s) and Transferee(s) to receive future service and notice of papers and process; (b) Identify the nature of the transfer, i.e., sale, assignment, lease, etc.; (c) For Temporary Transfers, accurately state the maximum amount of Transferor's share of Base Annual Production Rights and/or Carryover Right to be transferred, the price per acre-foot to be paid by the Transferee(s), and the duration of the transfer (i.e., either a one year transfer or a continuing transfer in excess of one year); (d) For Permanent Transfers, accurately state the amount of Transferor's Base Annual Production Right to be transferred and the total price to be paid by the Transferee(s); (e) Are accompanied by a list of the Production facilities, and their locations, to be involved in or affected by the transfer, or a statement that no such facilities are involved. All transfer documents must be executed by both Transferee(s) and Transferor(s).

## 2. Time for Filing Transfer Documents with Watermaster

All transfer documents for permanent transfers of Base Annual Production Rights must be filed with the Watermaster at least forty-five (45) days prior to the regularly scheduled Watermaster meeting at which the proposed transfer shall be considered. All transfer documents for Temporary Assignments of Base Annual Production Rights must be filed with the Watermaster at least thirty (30) days prior to the regularly scheduled Watermaster meeting at which the proposed transfer shall be announced. Unless included in a request for a Permanent Transfer, all transfer documents for transfer(s) of Carryover Rights must be filed with the Watermaster at least thirty (30) days prior to the regularly scheduled Watermaster meeting at which the proposed transfer shall be considered.

## 3. Reporting of Transfers

All transfers shall be reported on approved Watermaster forms which are attached hereto, marked and identified as follows:

- Exhibit "B" - Permanent Transfer of Base Annual Production Right
- Exhibit "C" - Temporary Assignment of Base Annual Production Right
- Exhibit "D" - Designee to Receive Future Notices for and on Behalf of Defendant(s)
- Exhibit "E" - Stipulation for Intervention After Entry of Judgment
- Exhibit "F" - Request for Assignment of Carryover

## Right

### I. Storage and Recovery Agreements

Any Party desiring to store Supplemental Water within the Four Basins Area for subsequent recovery and use, or for credit against replacement obligations shall first apply to the Watermaster for a Storage and Recovery Agreement. The Watermaster will not enter into Storage and Recovery Agreements with non-Parties unless such non-Parties become subject to the provisions of this Judgment and the jurisdiction of the Court. All Storage Agreements shall be for the utilization of Groundwater storage capacity of the Four Basins Area. Storage and Recovery Agreements shall by their terms preclude operations that will have a substantial adverse impact on any Party. The Watermaster shall calculate additions, extractions and losses of water stored under Storage and Recovery Agreements and maintain an annual account of all such water.

When determining availability of Groundwater storage capacity for storage of water pursuant to Storage and Recovery Agreements, the Watermaster shall consider the operation of the Four Basins under the Physical Solution provisions of the Judgment. The Watermaster may not enter into such an agreement if doing so would cause an unreasonably high Groundwater table and physical damage. The priorities for use of Groundwater storage capacity and loss of stored or carried-over water set forth in subsections III.B.5 and III.B.7 of the Judgment shall apply.

### J. Dispute Resolution

The Watermaster shall conduct a hearing regarding any dispute presented to the Watermaster for resolution in accordance with Article VIII of the Judgment. The Watermaster shall give at least thirty (30) days written notice to all Designees of a hearing under this section. Any Party may provide information relevant to the issues at the hearing. The Watermaster shall provide a written decision, including findings, within thirty (30) days of the conclusion of the hearing.

### K. Hearings as Condition to Action

The Watermaster shall hold a hearing whenever one of the following actions is proposed or is in issue: (a) approval of an Operating Plan or amendment thereto to be submitted to the Court; (b) approval of a Storage and Recovery Agreement; (c) approval of a Special Project; (d) making a finding of the existence of Temporary Surplus Groundwater; (e) finding the claimed right of a Party to be protected against substantial injury caused by any other Party; (f) determining the portability of Production rights; (g) determining loss of stored or carryover water; or (h) determining the amount of a Party's Production.

At a hearing under this section, any Party may provide

information relevant to the issues. The Watermaster shall render a written decision that includes supportive written findings within thirty (30) days of the conclusion of any such hearing.

#### ARTICLE V B COURT REVIEW OF WATERMASTER ACTIONS

##### A. General

Any action or decision of the Watermaster shall be subject to review by the Court on motion by any Party.

##### B. Time Limits

A motion to review any Watermaster action identified in Article IV, Section J, shall be filed with both the Court and the Watermaster no later than ninety (90) days after mailing of notice of the proposed action under Article IV, Section J. A motion to review Watermaster Assessments hereunder shall be filed within thirty (30) days of mailing of notice of the Assessment. Motions to review any other actions of the Watermaster not subject to court approval shall be filed no later than ninety (90) days after the date of the order, decision or action.

The foregoing notwithstanding, challenges or objections to any order, decision or action by the Watermaster that is subject to final approval by the Court must be filed with the Court at least two (2) court days before the Court's hearing on said order, decision or action.

##### C. Service and Filing of Motion

Any Party filing a motion for review of an action or decision must deliver a copy to the Watermaster, with a service fee sufficient to cover the cost to photocopy and mail the motion to each Designee. The Watermaster shall establish annually the service fee rates to be charged. A motion shall be deemed to be served on the members when a copy, conformed as filed with the Court, and the service fee have been delivered to the Watermaster. A Party's obligation to serve notice of a motion upon the Parties is deemed to be satisfied by serving the motion on the Watermaster as provided herein. Unless otherwise ordered by the Court, any such motion shall not operate to stay the effect of any Watermaster action or decision that is challenged.

##### D. Procedure

Upon the filing of a motion to review any Watermaster action, the Watermaster shall notify the members of the applicable procedures and dates established by the court and/or court rules. The Court's review shall be de novo, and the Watermaster's decision or action shall have no evidentiary weight in such proceeding.

E. Payment of Assessment During Pendency of Motion

Payment of Assessments levied by the Watermaster hereunder shall be made when due, notwithstanding any pending motion for review of Watermaster action, decisions, rules or procedures, including review of Watermaster Assessments. If it is ultimately established that a refund is due, such refund shall be made within ten (10) days of said final order, together with interest on the amount of refund calculated from the date on which the assessment was paid, at the statutory rate required for interest on money judgments.

F. Stipulation for Intervention; Notice and Hearing

Any person who is not a Party or successor to a Party, and who proposes to produce water from the Six Basins Area may seek to become a Party to this Judgment by entering a Stipulation for Intervention with the Watermaster. The Watermaster may execute said Stipulation on behalf of the Parties, but such Stipulation shall not preclude a Party from opposing such Intervention at the time of the Court hearing thereon. The Watermaster will execute such Stipulation, file the same with the Court, accompanied by the necessary filing fee provided by the proposed Intervener, and obtain a Court hearing date at least thirty (30) days from the date of filing. The Watermaster shall give at least thirty (30) days' notice of the hearing to the Parties.

When the Court approves a Stipulation for Intervention, the Intervener shall be a Party bound by the Judgment, and shall be entitled to the rights and privileges accorded under the Physical Solution therein.

The Watermaster shall, within thirty (30) days after the Court orders intervention, determine such Party's Base Annual Production Right, if any, in accordance with the provisions of the Judgment. The Watermaster shall give notice to all Designees of any such determination of a Base Annual Production Right, and any necessary adjustment(s) in the annual Production rights of the other Parties. Any Party contesting the Watermaster's determination of such Right shall file a motion in opposition thereto within thirty (30) days following the service of the Watermaster Notice. Failure to timely file such a motion shall waive any objection to the Watermaster's determination of the intervening Party's Base Annual Production Right.

## ATTACHMENTS

Exhibit "A" - Definitions (from the Judgment, Section I.A.)

Exhibit "B" - Permanent Transfer of Base Annual Production Right

Exhibit "C" - Temporary Assignment of Base Annual Production Right

Exhibit "D" - Designee to Receive Future Notices for and on Behalf of Defendant(s)

Exhibit "E" - Stipulation for Intervention After Entry of Judgment

Exhibit "F" - Request for Assignment of Carryover Right in Lieu of Payment of Replacement Water Assessments



## Appendix E

### Chino Basin Optimum Basin Management Program

## CHINO BASIN OPTIMUM BASIN MANAGEMENT PROGRAM

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### ABSTRACT

The Chino Basin is a large, adjudicated groundwater basin located in southern California. In 1998, a court order called for Chino Basin Watermaster (Watermaster) to develop an Optimum Basin Management Program (OBMP). Watermaster, given a two-year time period, convened a process that was successful in the development of the OBMP, which is currently being implemented at an ultimate cost of over \$400 million. One of the principle goals of the OBMP was to develop the maximum yield of the Chino Basin for the benefit of the basin's producers. This is being accomplished by increasing the recharge of local and supplemental water in the forebay areas, and by modifying pumping patterns in areas of historic discharge in an attempt to minimize discharge, induce more recharge, yet preserve sensitive ecological habitat and downstream water rights.

Under construction are 21 groundwater recharge basins that will accept imported, recycled, and storm waters, and the second of two groundwater extraction and desalting facilities. These desalting facilities, when completed, will convert groundwater contaminated by 100 years of irrigated agriculture and dairy operations to 20 mgd of high-quality water for municipal supply. Watermaster and the Inland Empire Utilities Agency (IEUA) have been conducting monitoring and modeling investigations to guide the yield maximization programs. The programs and investigations have suggested that lowering the groundwater storage by about 200,000 acre-ft through a controlled overdraft, along with the expansion of the extraction and desalting system to 40 mgd, are necessary to maximize the yield of the basin.

### INTRODUCTION

The Chino Basin is a large groundwater basin located in Southern California—principally in San Bernardino and Riverside Counties and, about 50 miles east of Los Angeles (Figure 1). Chino Basin contains about 5.6 million acre-ft of water in storage and is a primary supply for about twenty municipal agencies, several private entities, and about 400 agricultural and dairy operations. Total groundwater production is about 190,000 acre-ft/yr.

Pursuant to a Judgment entered in the San Bernardino Superior Court, the Chino Basin was adjudicated in 1978. The Judgment established a Watermaster to oversee the implementation of a physical solution to problems in the basin at that time; also, it required the Watermaster, at its discretion, to prepare an Optimum Basin Management Program (OBMP) to address quantity and quality issues in the basin. The primary issues that led to the adjudication were groundwater levels and storage, both of which had been declining at alarming rates. The technical focus of the Judgment was on the definition of the “safe yield” of the groundwater basin and the allocation of that yield, declared to be 140,000 acre-feet per year, among three “pools” of groundwater users: the Overlying Agricultural Pool, which was allocated 82,800 acre-ft/yr (59.1%) of the safe yield; the Overlying Non-Agricultural Pool, which was allocated 7,366 acre-ft/yr (5.3%) of the safe yield; and the Appropriative Pool, which was allocated the balance of safe yield, 49,834 acre-ft/yr (35.6%). By limiting pumping to safe yield and providing for the acquisition of replacement water in the event of overproduction, the Judgment intended to stop the decline in groundwater levels



and storage. Subsequent analysis of that physical solution shows that it was generally successful in stabilizing and/or recovering groundwater levels and storage. The Judgment also has specific provisions for the management of groundwater storage. The storage management provisions were innovative and have led to the establishment of individual storage accounts that encourage local and regional conjunctive use as well as an efficient market for the transfer/lease of stored and unproduced water. Finally, the Judgment contains innovative provisions for the orderly transition of groundwater rights from overlying to appropriate entities as land is converted from agricultural to urban uses

In 1997, motions were filed in court by some of the parties to the Judgment. These motions challenged, among other things, the governance of the then existing Watermaster Board and addressed certain perceived inequities among the parties that were principally related to water quality. In February 1998, the Court appointed a new, interest-based Watermaster Board to serve as Interim Watermaster and directed the Watermaster staff to prepare the Optimum Basin Management Program as provided for in the Judgment.

A 40-member stakeholder group was formed to direct the development of the OBMP. This stakeholder group consisted of municipal, industrial, and agricultural pumpers; wholesale water agencies; and regulators. During the OBMP development process, the stakeholder group met twice per month. Development of the OBMP required three parallel processes: institutional, engineering, and financial. The institutional process defined the management agenda, directed the engineering and financial processes, and built an institutional support infrastructure for the implementation of the OBMP. The engineering process developed planning data and management elements, and evaluated the technical and economic performance of the management elements. The financial process began the difficult task of obtaining financing for the implementation of the OBMP. These processes were initiated in March 1998 and were completed in August 1999 with the publishing of OBMP Phase I Report (Wildermuth Environmental, 1999).

Subsequent to the development of the OBMP, the parties to the Judgment started an attorney-manager process to craft an agreement to implement the OBMP. The managers of the municipal pumping entities and their attorneys and the attorneys representing the other parties met twice per month to develop an implementation agreement for the OBMP. The resulting agreement, called the Peace Agreement, was completed in July 2000 and became effective in September 2000. The OBMP and the Peace Agreement began the implementation of a \$450 million water resource program for the Chino Basin area. The OBMP, Peace Agreement, and other related documents can be reviewed at [www.cbwm.org](http://www.cbwm.org).

### **Basin Conditions and Problems Leading to the OBMP**

Since the 1978 Judgment, groundwater levels and storage have largely been brought into balance, with the possible exception of the western portion of the basin, an area called Management Zone 1, where depressed or declining water levels appear to be linked to land subsidence and ground fissuring in that area. Other problems or challenges that have been identified include: widespread groundwater quality degradation in the southern part of the basin, point-source contamination of groundwater quality at a number of locations in the basin, and loss of naturally occurring recharge that was part of the originally determined safe yield. The urbanization of agricultural land and flood control projects that route storm flows out of the basin have resulted in reduced basin recharge.

**Groundwater Levels.** Overall, groundwater levels in the Chino Basin have declined between 50 and 200 feet since the early 1900s. Basin-wide stabilization of groundwater levels has generally been achieved since the Judgment. There is an area in the western part of the basin where subsidence and ground-surface fissures (subsidence area) are thought to be related to recent local increases in deep aquifer groundwater production. Balancing groundwater production with recharge, whether throughout the basin or locally, may require temporarily reducing production

below a balanced level in order to bring groundwater levels up. Production may have to be reduced in the subsidence area and replaced with production from elsewhere in the basin or with imported water.

**Groundwater Storage.** The Chino Basin has an immense storage capacity. Since the Judgment was entered, total basin-wide groundwater in storage has generally stabilized; however, storage in the basin had declined by about 1,000,000 acre-feet between 1933 and 1978. As a result, there remains at least 1,000,000 acre-feet of unused storage capacity in the basin. Storing water in that vacant storage space could have some costs. For example, as groundwater storage space is filled and groundwater levels rise, there will be losses to the Santa Ana River due to rising groundwater. Losses from local and cyclic storage accounts due to rising groundwater during the period 1978 to 1997 could be as high as 50,000 acre-feet, or 18 percent of the volume that Watermaster assumes is in storage. If the safe yield is really 140,000 acre-feet per year, as declared in the Judgment, ignoring these losses and allowing all storage account water to be pumped could result in an overdraft of the Chino Basin. Significant increases in the amount of groundwater in storage may also have groundwater quality impacts through the mobilization (flushing) of contaminants from the vadose zone (above the saturated part of the aquifer system). The volume of available storage that can be used without causing a groundwater quality problem is unknown.

**Groundwater Production.** The primary groundwater production issues in the basin are the localized overdraft in the subsidence area and potential changes in safe yield that can occur with changes in the location and magnitude of pumping. Although the location and amount of groundwater production generally appears to be balanced in the basin, groundwater levels may need to be increased in the subsidence area to minimize future subsidence and ground fissures, maintain production at a sustainable level, and improve groundwater quality.

In the southern half of the basin, groundwater production will need to be managed to ensure that safe yield is not reduced as agricultural areas convert to urban uses. Significant conversion is expected over the next 20 years. Decreases in agricultural pumping, if not replaced by other pumping, are expected to result in rising groundwater levels and increased discharge to the Santa Ana River. Loss to the river has two undesirable effects: it represents a loss of safe yield and, because groundwater quality is degraded in the southern portion of the basin, the discharge will impact the receiving water and its potential downstream beneficial uses.

Since losses in safe yield are distributed among the municipal pumpers based on their initial share of safe yield, the loss in yield due to decreases in agricultural production in the southern part of the basin would be distributed throughout the basin. Conversely, increasing production near the Santa Ana River could enhance existing safe yield. To maintain safe yield and avoid downstream water quality impacts that will result if projected decreases in agricultural production occur, that pumping must be replaced with facilities necessary to continue to produce water from the southern part of the basin, and provide treatment of that water so that it is of an appropriate quality for continued beneficial use.

**Groundwater Quality.** Groundwater quality has been adversely impacted in a number of basin areas as a result of point and non-point source activities. The location of water-quality impaired groundwater is shown in Figure 2. Remediation of some small solvent plumes is underway; however, there is one large solvent plume and numerous perchlorate anomalies that need to be addressed. Groundwater in the southern and most down-gradient part of the basin has been heavily degraded by agriculture and dairies and has high concentrations of total dissolved solids (TDS) and nitrate. This area is being rapidly converted from agricultural and dairy uses to urban uses. The groundwater underlying this area is too degraded for municipal use without treatment. If this water is not pumped then it will be lost as groundwater outflow to the Santa Ana River. This will result in a loss of safe yield estimated to be about 40,000 acre-ft/yr and will substantially degrade the Santa Ana River. The Santa Ana River is the main source of recharge water to the Orange County groundwater basin that serves approximately 2 million people. If this were to occur, the Watermaster and IEUA would be required to mitigate the water quality impacts on the Santa Ana River. The least costly way to mitigate this downstream water quality impact is to

prevent it from happening; that is, to pump and treat this contaminated groundwater and use it as a municipal supply. The challenge then becomes who pays the cost of treatment.

**Recharge Components of Safe Yield.** All the above problems or issues related to groundwater levels, subsidence, storage, and quality affect the safe yield of the basin. In addition, maintaining (and potentially increasing) safe yield will require increasing the capture and recharge of storm water and recycled water in the basin. The San Bernardino County Flood Control District, the Riverside County Flood Control and Water Conservation District, and the Army Corps of Engineers have constructed flood control projects that efficiently convey flood waters out of the Chino Basin. However, those projects also reduce in-basin recharge of those waters, which has a negative impact on safe yield. A challenge is to develop multi-purpose flood control and recharge projects which achieve both objectives.

There is also a negative impact on safe yield caused by the progressive reduction in recharge that results from historical and ongoing urbanization of agricultural land. The deep percolation of applied irrigation was an important component of the original safe yield calculation. That component has been reduced by the replacement of irrigated agriculture and corresponding urbanization (roads and other pavement, buildings, etc.). The resultant challenge, if safe yield is to be maintained (and potentially increased), is to augment artificial recharge by expanding existing facilities and/or constructing new facilities for the recharge of local storm flows and reclaimed water.

#### **MANAGEMENT GOALS OF THE OBMP**

In June 1998, the stakeholders began the process of developing management goals for the OBMP that address the issues, needs, and interests of the producers. The process involved the proposal of an initial set of goals followed by discussion and group editing at the bi-monthly meetings. In November 1998, the goals were finalized and presented to the stakeholders as a tabular matrix that listed each goal, the impediments to each goal, action items to surmount each impediment and achieve the goal, and the implication of the individual action items.

#### **OBMP Management Initiatives and Progress Since September 2000**

The implementation plan for the OBMP included nine aggressive initiatives or program elements:

- Program Element 1 – Develop and Implement Comprehensive Monitoring Program
- Program Element 2 – Develop and Implement Comprehensive Recharge Program
- Program Element 3 – Develop and Implement Water Supply Plan for the Impaired Areas of the Basin
- Program Element 4 – Develop and Implement Comprehensive Groundwater Management Plan for Management Zone 1
- Program Element 5 – Develop and Implement Regional Supplemental Water Program
- Program Element 6 – Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region (Regional Board) and Other Agencies to Improve Basin Management
- Program Element 7 – Develop and Implement Salt Management Program
- Program Element 8 – Develop and Implement Groundwater Storage Management Program
- Program Element 9 – Develop and Implement Conjunctive-Use Programs

The scope of the program elements was developed by the Chino Basin stakeholders. Each program element contains a series of comprehensive actions and plans to implement those actions.

#### **Program Element 1 – Develop and Implement Comprehensive Monitoring Program**

The monitoring requirements of all the other program elements and general monitoring to assess basin conditions are included in this program element. The types of data that are collected and reviewed include surface and ground water quality, surface water discharge and diversions, groundwater levels, water use, land subsidence, and other pertinent parameters related to water resources in the basin. These monitoring data have been combined with historic data and are used for ongoing evaluation of basin conditions, assessment of the effectiveness of the other program elements of the OBMP, and future updating of the OBMP. The scope of the monitoring program includes about 900 wells, sixty surface water sites, and one dual-borehole high-precision extensometer. Watermaster has developed an extensive relational database and geographical information system to store, view, and analyze these data. Watermaster staff reviews the monitoring programs from State and Federal agencies and imports these data into the Watermaster database.

#### **Program Element 2 – Develop and Implement Comprehensive Recharge**

The goals of this program element are to maximize the capture of storm flows for recharge of the groundwater basin and to maximize the recharge capacity for supplemental water for replenishment purposes pursuant to the Judgment and for conjunctive use. Watermaster and IEUA completed a recharge master plan in 2001 and immediately advanced that plan through design and construction. As of October 2004, two new recharge basins were constructed and 15 existing retention facilities were improved to be recharge basins (Figure 3). These facilities are controlled through a SCADA system by IEUA. The cost of these recharge enhancement is about \$40 million. The volume of new storm water recharge that is expected to be captured in these facilities is about 12,000 acre-ft/yr, which is worth about \$3 million per year. The supplemental water recharge capacity has been expanded from about 25,000 acre-ft/yr to about 80,000 acre-ft/yr. Additional improvements are being planned for the next five years to increase the stormwater recharge to about 18,000 acre-ft/yr and the supplemental water recharge capacity to about 100,000 acre-ft/yr. Approximately 80 percent of the supplemental water recharge will come from imported State Water project water and 20 percent will come from recycled water developed by IEUA. It is likely that the recycled water contribution will be increased in the out years to as high as 50 percent of the supplemental water recharge within ten years.

#### **Program Element 3 – Develop and Implement Water Supply Plan for the Impaired Areas of the Basin and Program Element 5 – Develop and Implement Regional Supplemental Water Program**

These program elements were combined because of the synergies that resulted from meeting water demands through common conveyance and distribution systems. The OBMP contains a regional water supply plan that integrates the water supply plans of the retail water purveyors with: a supplemental water supply plan that includes treatment, conveyance and storage of imported and recycled waters, and a regional groundwater treatment program for the TDS and nitrogen impaired waters in the southern end of the basin. As of October 2004, IEUA has constructed or will construct shortly about \$100 million worth of improvements in its recycled water system that will ultimately deliver about 60,000 acre-ft/yr of high quality recycled water for direct and recharge uses. The Chino Desalter Authority, a joint power agency created to build and operate groundwater treatment and conveyance facilities pursuant the OBMP, has expanded the existing groundwater treatment program from about 8 mgd to 20 mgd at a cost of about \$80 million. Watermaster, IEUA, and the parties to the Judgment are in the process of developing plans to expand this treatment capacity to 40 mgd over the next 10 to 15 years. Figure 1 shows the location of exiting and planned wells and treatment facilities for this program.

#### **Program Element 4 – Develop and Implement Comprehensive Groundwater Management Plan for Subsidence Area in the city of Chino Area**

Subsidence has been observed in the western part of the basin that may appear to have been caused from deep aquifer groundwater pumping by parties to the Judgment. This initiative of the OBMP was developed to conduct scientific investigations to determine the cause of subsidence and ground fissuring, and to make recommendations to the Watermaster and the parties on how to manage the basin to minimize future subsidence. Watermaster has constructed a high-precision, dual-borehole extensometer and piezometers to carefully monitor the relationship of groundwater pumping, piezometric levels and ground subsidence. Watermaster developed and implemented a semi-annual high resolution ground survey to monitor vertical and horizontal displacement during and over the years. Synthetic aperture radar imagery obtained from satellites has been used to develop a time history of subsidence from 1993 through 2000 and new satellite imagery will be used in the future. The subsidence management plan is under development and should be complete in 2007; furthermore, it will likely consist of managed groundwater pumping in the subsidence area and groundwater injection.

#### **Program Element 6 – Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region (Regional Board) and Other Agencies to Improve Basin Management and Program Element 7 – Develop and Implement Salt Management Program**

The Regional Board and other regulatory agencies have limited resources and are not able to address all the water quality problems in their areas of responsibility. The Watermaster, IEUA, and the parties to the Judgment have formed a Water Quality committee to prioritize the water quality problems under the authority of the regulatory agencies and have subsequently contributed resources to these agencies so that the high priority problems are addressed. This is an ongoing process.

Watermaster and IEUA proposed a salt and nitrogen management strategy to the Regional Board that enables expanded recycled water use and protects beneficial uses in the Chino Basin and in downstream water bodies. This proposal was incorporated in the Water Quality Control Plan for the Santa Ana River Watershed that was approved in December 2004. This program will result in less State Project water being imported from the Sacramento Delta and, thus, has statewide and national benefits.

#### **Program Element 8 – Develop and Implement Groundwater Storage Management Program and Program Element 9 – Develop and Implement Conjunctive-Use Programs**

The objectives of these program elements are to ensure that the unused storage volume in the groundwater basin is put to maximum beneficial use by the parties to the Judgment and to provide opportunities for both parties and outside entities to utilize the large unused storage space in the groundwater basin to improve local, regional, and statewide water supply reliability. The usable, unused storage volume in the basin is estimated to be about 500,000 acre-ft. Watermaster manages about 200,000 acre-ft of water in local storage accounts that are held by the parties to the Judgment. Watermaster, IEUA and the Metropolitan Water District of Southern California recently executed an agreement whereby Metropolitan will pay IEUA \$27 million so that Metropolitan can store 100,000 acre-ft of water in the Chino Basin over a 20-year period. IEUA is distributing the \$27 million to local producers to fund the construction of wells and well head treatment facilities so that the retail agencies can be more dependent on local groundwater when Metropolitan attempts to recover their water from storage. Watermaster and IEUA are currently considering other conjunctive-use opportunities for the remaining 200,000 acre-ft of unused storage.

## Conclusion

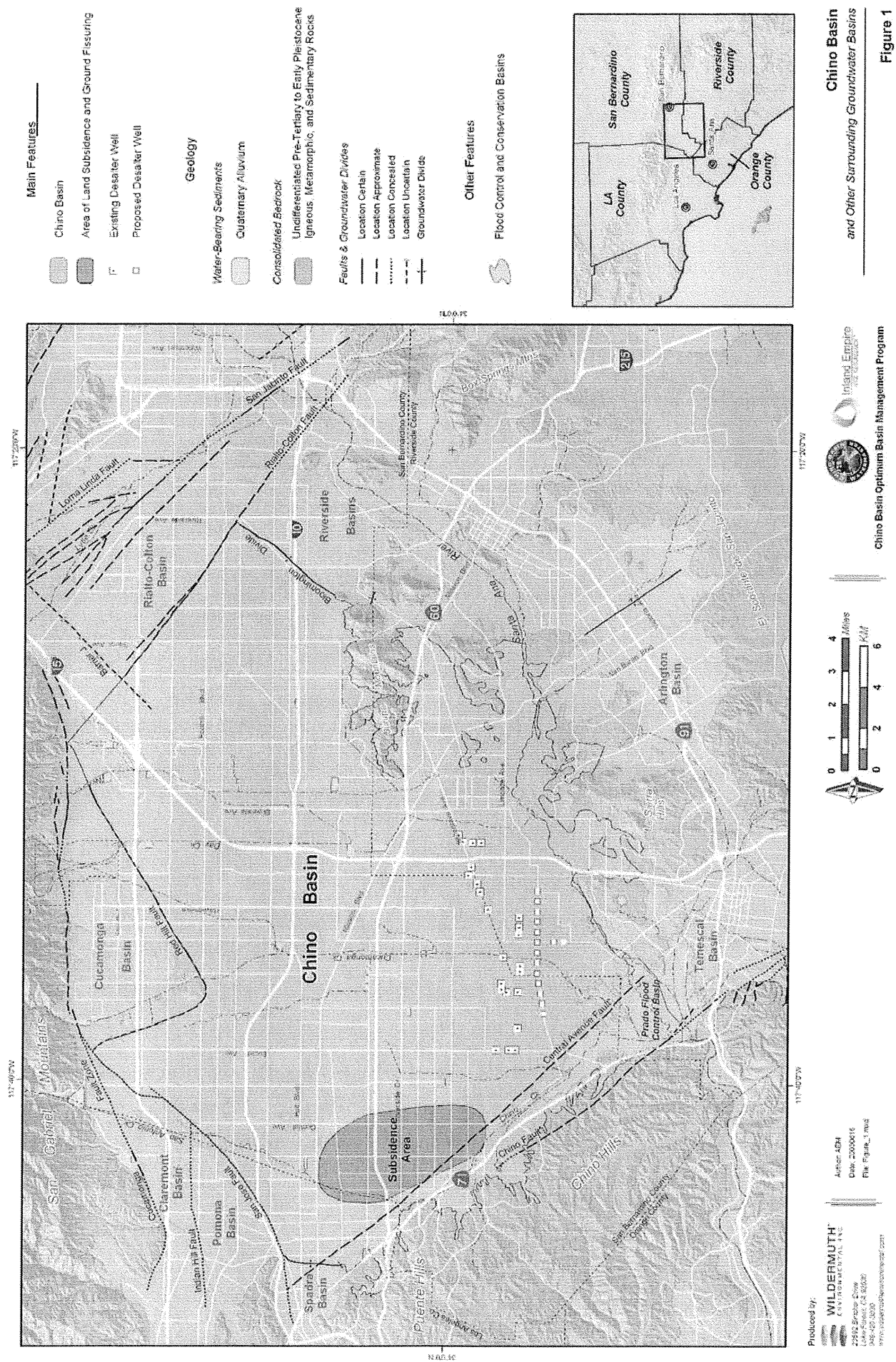
The OBMP and associated Peace Agreement are the road map for the orderly development of water resources in the Chino Basin area. A large stakeholder process was used to develop the OBMP and it was completed in a very short time—less than two years. The OBMP has provided the certainty necessary for the Watermaster, IEUA, parties to the Judgment, and regulators to implement the major initiatives of the OBMP rapidly and attract significant outside funding. For example, having a recharge master plan (Program Element 2) integrated with the OBMP with clearly defined financial and reliability benefits enabled IEUA to attract \$30 million in outside grants and secure an additional \$20 million in conventional municipal funding to construct recharge improvements. The same is true for the recycled water distribution system and groundwater treatment systems (Program Elements 3 and 5) where the combined costs are about \$180 million. All this has occurred since September 2000, a period of less than five years.

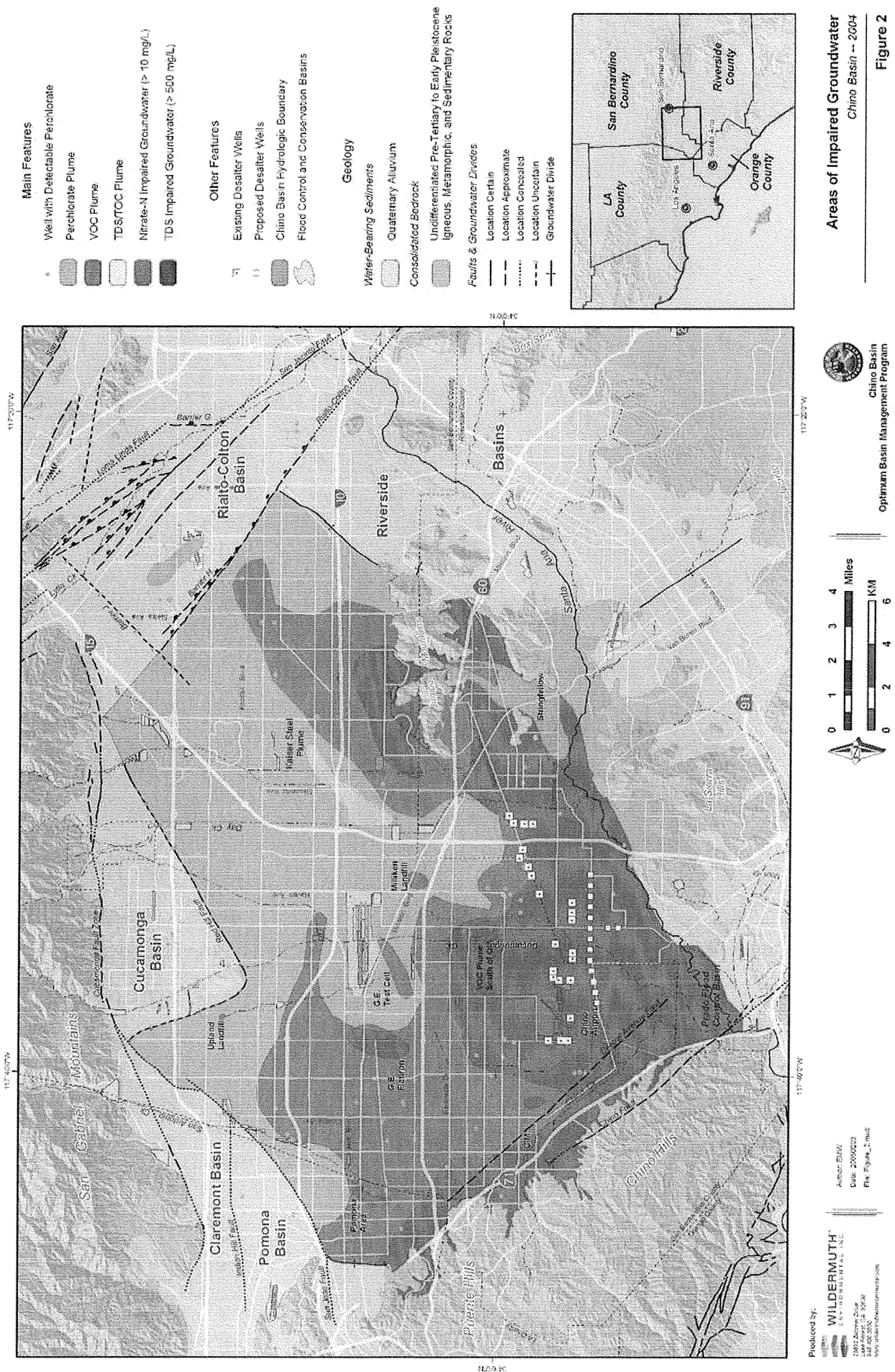
The extension of the OBMP concept beyond the Chino Basin is occurring in California under the name of *Integrated Regional Water Management Program*. The State of California has made it mandatory that entities requesting grant funds under Proposition 50, a multi billion dollar bond initiative approved by the voters in 2002, must have an IRWMP. Proposition 50 funding is even available for water agencies to develop an IRWMP. The process used to develop the OBMP was used to successfully develop a similar, albeit smaller, program for the San Timoteo Watershed in Southern California ([www.stwma.org](http://www.stwma.org)).

## References

Wildermuth Environmental, Inc. 1999. Optimum Basin Management Program. Phase I Report. Prepared for the Chino Basin Watermaster. August 19, 1999.













## Appendix F

### Entitlement Reduction 2015 Newsletter



# SAN ANTONIO WATER COMPANY

CORPORATE COMMITMENT

To provide our shareholders with reliable and good quality water service at a cost effective rate

SPRING  
EDITION  
2015

# SAWCO WATERWORKS

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**Facebook**

## RAINFALL DATA

	2013	2014	2015
Jan	1.45	.43	.82
Feb	1.10	2.39	1.61
Mar.	.49	.57	
April	.16	1.05	
May	.47	.01	
June	.00	.00	
July	.00	.00	
Aug.	.09	.79	
Sept.	.00	.01	
Oct.	2.03	.07	
Nov	.79	1.18	
Dec	.64	4.65	
TOTAL	7.22	11.15	2.43

1958-2013 Annual rainfall average: 22.40 inches  
rainfall data collected from  
www.sbcounty.gov. & www.usace.army

## DROUGHT IMPACT

In response to the Drought Emergency and the back-to-back record dry years, on February 17, 2015, the Board approved the following to take effect on **March 1, 2015**. The Board approved reducing entitlement **15%**. **Due to reduced water supply, the Water Company will not be able to deliver the current established entitlement.**

### New Municipal/Miscellaneous Customers monthly entitlement on reduction

Months	1 share	3/4 share	1/2 share	1/4 share
Dec-Feb	4,252	3,189	2,126	1,063
Mar	4,879	3,659	2,440	1,220
Apr	5,437	4,077	2,718	1,359
May	6,691	5,018	3,346	1,673
Jun	8,225	6,168	4,112	2,056
Jul-Sept	9,270	6,952	4,635	2,318
Oct	7,528	5,646	3,764	1,882
Nov	5,437	4,077	2,718	1,359

### New Domestic Customers Bi-monthly entitlement based on reduction

Months	1 share	3/4 share	1/2 share	1/4 share
Jan-Feb	8,504	6,378	4,252	2,126
Mar-Apr	10,316	7,737	5,158	2,579
May-Jun	14,916	11,187	7,458	3,729
Jul-Aug	18,540	13,905	9,270	4,635
Sept-Oct	16,798	12,599	8,399	4,200
Nov-Dec	9,688	7,267	4,844	2,423

## WATER SUPPLY

The chart below shows the Water Company's production for the last 3 years. Shareholder entitlements are based on the ability of the company to produce which is prorated among the outstanding shares. We begin to see the decline in production in CY2012. At that time the shareholder entitlements was set at 16,574.

Source Pumped	2014	2013	2012
Chino Basin	1,548	1,086	1,092
Six Basins	936	1,163	1,472
Cucamonga Basin	6,210	8,818	7,630
Subtotal:	8,694*	11,067*	10,194*

Total Canyon Flows	1,659	1,433	2,271
Domestic Tunnel	1,231	1,082	2,341
Subtotal:	2,890	2,515	4,612
<b>TOTAL:</b>	<b>11,584*</b>	<b>13,582*</b>	<b>14,806*</b>

\*Shown in Acre-Feet

Note the 18% reduction in total water produced in CY2013 with respect to the 16,574 entitlement and the additional 15% reduction of water supply at the end of CY2014.

## MANAGER'S MESSAGE

### Water Conservation Slogans

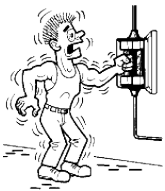
There are a myriad of water conservation slogans to remind us of our fragile water supply. Some examples are, "When you conserve water, you conserve life", or "It's only good until the last drop, than what?" or "Don't be a fool, cover your pool", and, the list goes on.

We live in an earthquake area and are keenly aware each time we have an event that we need to prepare for the next significant event. Well there are no catchy slogans there to remind us to prepare for the big one. We also live in a "dry" climate and need to be keenly aware of how we use water. Of course, for some of us that awareness tends to wane when we do get "pouring" rain in Southern California. That is why we have catchy slogans to remind us to conserve our water, always.

My favourite slogan is "We never know the **worth** of water till the well runs dry". Our groundwater levels are at a lowered water level that does not allow us to operate our wells for any long duration before we draw air.

Well I do know how much water cost if we have to "buy" it at today's market rates. The question: Is it **worth** it? Let's try out a new slogan - "Water - It's **worth** conserving"

*Charles Moorrees*



### IS YOUR ELECTRICAL GROUNDED TO YOUR PLUMBING?

California electrical code states that there should be multiple avenues for unused or faulty electrical currents to return to the pole or to earth. Three different ways to accomplish this are:

- 1) Electrical panel should be ground by rod or pipe (normally a copper rod buried into the ground to a depth of five feet).
- 2) Ground ring
- 3) braided wire attached to the water pipe were it enters the home and within 10 LF to were it enters the ground.

These concepts allows the current an easy path back to the earth should there be a short or surge in the line, these surges can occur when there is a lightning strike, a short in a piece of equipment or when two wires come together and one is carrying a greater current than the other. Failure to have all these go to ground can cause one to damage the other, as an example, if the water line is the only thing the electrical panel is grounded to it can cause the water pipe to become pitted and start leaking which shortens the pipes ability to contain the water. It also protects the water company employee from shock when changing damaged or improperly functioning water meters.

If you are planning to have any electrical work done at your home, it is a good idea to have the electrician check to make sure the electrical panel is up to code and grounded properly, this not only protects you the homeowner from electrical shock but also the water crew who may be working on the water distribution system.



# Water Efficiency Corner

## High Shortage Stage

The **High Shortage Stage** plan is now in effect. The following activities are **prohibited** and non-compliance can result in fines.

- Washing of sidewalks, walkways, driveways, public and private parking areas and all impervious hard surfaced areas by direct hosing when runoff water directly flows to a gutter or storm drain is **prohibited**.
- **Excessive** or unreasonable **run off** of water or unreasonable spray of the areas being watering is **prohibited**.
- Allowing, **permitting** or causing the **escape of water through breaks or leaks** within the customers plumbing or private water distribution should be resolved in a reasonable time. It shall be presumed that a period of **72 hours** after the customer discovers or is notified of the break or leak, that it is **corrected** within that time period (72 hours).
- **Outdoor** irrigation by sprinklers is permitted only on **Wednesday & Sunday** for those street address with an **EVEN** last digit. Those with an **ODD** last digit are permitted on **Tuesday & Saturday**. Outdoor irrigation without a street address shall occur on Wednesday & Sunday if located west of San Antonio Ave or only on Tuesday & Saturday if located east of San Antonio Avenue. Watering is permitted between **sundown and 6:00 a.m.** The same applies to **Refilling** or **adding** of water to swimming pools.
- **Washing of Automobiles**, trucks, trailers, boats and other types of equipment **prohibited** between 12:00 noon and sundown.
- The irrigation of golf course fairways is **prohibited** unless the irrigation is solely with non-potable or reclaimed wastewater.

Thanks for doing your part to save our water!

## Sign of the times



### Water Alert

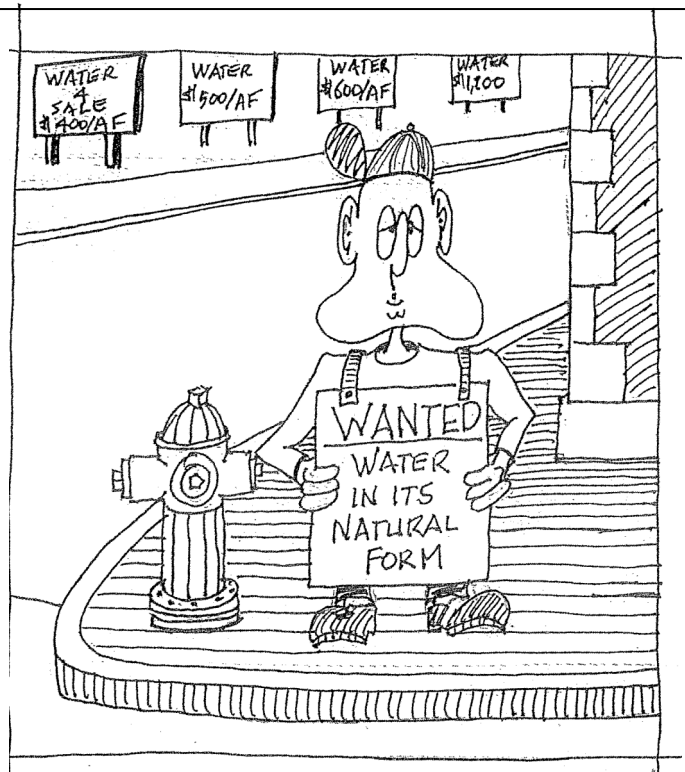
### High Shortage Stage

- Watering Schedule 6pm-6am only
- ✓ **Even address: Wednesday & Sunday**
- ✓ **Odd Address: Tuesday & Saturday**
- Excessive run off prohibited



**SAVE  
OUR  
WATER**

You may have noticed that the **Moderate Shortage Stage** signs were replaced with **High Shortage Stage** signs throughout the Heights.



## SAWCo Waterworks

is produced quarterly to keep San Antonio Water Company shareholders informed about water-related issues and upcoming events. If you have any questions or comments, please call the office at 909-982-4107.



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Ken Willis-Secretary/CFO

Glenn Bozar-Director

Sue Sundell -Director

Bob Cable—Director

John Gerardi-Director

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Upland, CA 91786

(909) 982-4107

[www.sawaterco.com](http://www.sawaterco.com)

### GENERAL MANAGER

Charles Moorrees

### DESIGNER/EDITOR

Roberta Thomas



## PAYMENTS FROM YOUR BANK



Most of us enjoy the convenience of paying our bills on our bank's website. This method of payment allows us to log onto our bank's website and schedule payments for a majority of our bills; the bank either directly transfers the money to the payee or cuts a check and mails it. It saves us the time and effort in having to put our payments in an envelope and requires no stamp or mailing.

Last year, San Antonio Water Company began utilizing new billing software. With this change in software, we were required to issue new account numbers to all customers. An insert advising of the change was included in your water bill at the time. SAWCo does not have the capability of having funds directly transferred from your bank to ours; a check is cut and mailed to us for payment and may take up to 10 days to receive it.

Some payments we are receiving from our customers are still using old account numbers. An incorrect account number requires more administrative time to locate the current account numbers and has unfortunately led to payments being posted to wrong accounts. **Please** help us save time and the possibility of error on your water account by **updating your account number on your bank's website**. If you are unable to locate your new account number, please contact our office for assistance.

### Projects in Motion CY 2015

#### Pending regulatory and institutional approval

- ▶ Cucamonga Crosswalls – Desilt & repair
- ▶ Basin 6 Desilting

#### Planning Documents

- ▶ Water Master Plan
- ▶ Urban Water Management Plan
- ▶ Alternative Energy Feasibility Study

#### Under Design

- ▶ Chino Basin Recharge Pipeline
- ▶ Frankish Tunnel Pipeline Connection

#### Under Construction

- ▶ Well 25A Site Improvements



## Appendix G

Resolution No. 2006-06-03 (Water Shortage Contingency  
Planning)

RESOLUTION No. 2006-06-03  
A RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
SAN ANTONIO WATER COMPANY ESTABLISHING PROCEDURES IN THE CASE OF A  
WATER SHORTAGE

Entitled

“WATER SHORTAGE CONTINGENCY PLAN”

WHEREAS, the Board of Directors at its regular meeting of \_\_\_\_\_, 2006, did discuss and establish the protocols and procedures attendant to the conduct of meetings of the Board of Directors.

NOW THEREFORE, BE IT RESOLVED that the San Antonio Water Company establish a plan to respond to water shortages,

WHEREAS, the Board is concerned that our precious water resources are protected so shareholders can expect to receive a reliable supply of quality water on demand; and

WHEREAS, the Board has a responsibility to provide water to its shareholders through the creation and maintenance of the infrastructure necessary to pump, store and distribute water; and

WHEREAS, the Board acknowledges the City of Upland Water Conservation Ordinance No. 1786 and shares the City of Upland's City Council's concern regarding the proper management of our precious water resources to ensure a reliable supply of quality water; and

WHEREAS, the San Antonio Water Company periodically needs supplemental water supply service from the City of Upland, which in accordance with City of Upland Ordinance No. 1786, as a prerequisite for receiving water supply service from the City of Upland, requires the implementation of water conservation measures; and

WHEREAS, the Board has adopted a resolution to water conservation,

NOW, THEREFORE, THE SAN ANTONIO WATER BOARD, CALIFORNIA, DOES RESOLVE, DECLARE, DETERMINE AND ORDER AS FOLLOWS:

I. GENERALLY

- A. Declaration of policy. It is hereby declared that because of the water conditions prevailing in the Water Company service area, the general welfare requires that the water resources available to the Water Company, Region and State be put to the maximum beneficial use, that the waste or unreasonable use of water be prevented, and that the conservation of water is to be encouraged at all times.
- B. Authorization. The General Manager shall request the Board to declare that demand for water is anticipated to be in excess of supply, immediately after it appears that such a situation exists or is threatened, if the Board is in session. If the Board is not in session, the General Manager immediately cause a request for a special meeting of the Board to be delivered to each Board Member who can be located. The Board shall have the power to declare the necessity to implement the applicable provisions of this part when in their opinion the demand for water consumption exceeds the Water Company's available supply (allowing for a safe reserve), or threatens to do so, provided there are no immediate resources available to remedy the situation. Said declaration shall be made by public announcement and shall be published in a newspaper of general circulation and shall become effective immediately upon such publication.
- C. Application. The provisions of this chapter shall apply to all shareholders, customers within the Water Company's service area, or property serviced by the Water Company wherever situated.



## II. CONSERVATION PROGRAM-YEAR ROUND STAGE

### A. The following activities are hereby prohibited:

- 1.0 The washing of sidewalks, walkways, driveways, public and private parking areas and all other impervious hard surfaced areas by direct hosing when runoff water directly flows to a gutter or storm drain, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety;
  - a. Excessive or unreasonable run off of water or unreasonable spray of the areas being watered. Every shareholder is deemed to have his/her water system under control at all times, to know the manner and extent of this water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner;
- 2.0 Allowing, permitting or causing the escape of water through breaks or leaks within the customers plumbing or private water distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the Water Company of a break or leak, is a reasonable time within which to correct such break or leak, or, at a minimum, to stop the flow of water from such break or leak;
- 3.0 Outdoor irrigation of landscape by sprinklers during the hours of 10:00 a.m. to 6:00 p.m. Shareholders are encouraged to avoid the use of sprinklers on windy days. Irrigation by hand held hose, drip irrigation, hand held bucket, or similar container or by use of a cleaning machine equipped to recycle any water used are permitted anytime. In no event shall any water so used be permitted to run off into adjacent property, streets, and alleys or storm drains;
- 4.0 Washing of automobiles, trucks, trailers, boats, and other types of equipment (mobile or otherwise) unless done with a hand held bucket or hand held hose equipped with a positive shutoff nozzle for quick rinses. The nozzle shall be removed when the hose is not in use to ensure the water supply is shutoff. However, this section does not apply to the washing of the above-listed vehicles or mobile equipment when conducted on the immediate premises of a commercial carwash;
- 5.0 With respect to eating and drinking establishments of any kind including, but not limited to, any restaurant, hotel, cafe, cafeteria, bar or club, whether public or private, that benefits from the supply of water by the Water Company shall not provide drinking water to any person unless expressly requested.

### B. Exceptions: None of these restrictions shall apply to the following:

- 1.0 The routine and necessary use of water, other than for landscape irrigation, by a governmental entity in pursuit of its governmental functions for the benefit of the public, such as construction projects and for the cleaning of streets to prevent debris and harmful substances from entering water systems via storm drains;
- 2.0 The necessary use of water for the routine maintenance, repair or construction of distribution and water supply facilities, residential and commercial plumbing and permanently installed landscaped irrigation systems.
- 3.0 Available non-potable water which is only delivered for irrigation purposes and/or not available for distribution by current Water Company production and conveyance facilities.

## III. MODERATE SHORTAGE STAGE

- ### A.
- In the event the Board determines that the measures outlined above fail to produce a sufficient reduction in demand so as to produce a sufficient supply, the use of water within the Water Company's service area shall be additionally restricted and the

following provisions shall become effective upon a declaration by the Board and publication of same as follows:

- 1.0 The washing of sidewalks, walkways, driveways, public and private parking areas and all other impervious hard surfaced areas by direct hosing when runoff water directly flows to a gutter or storm drain, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety;
  - a. Excessive or unreasonable run off of water or unreasonable spray of the areas being watered is prohibited. Every customer is deemed to have his/her water system under control at all times, to know the manner and extent of this water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner;
- 2.0 Allowing, permitting or causing the escape of water through breaks or leaks within the customers plumbing or private water distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the Water Company of a break or leak, is a reasonable time within which to correct such break or leak, or, at a minimum, to stop the flow of water from such break or leak;
- 3.0 Outdoor irrigation of landscape by sprinklers is permitted only on even days of the month for those locations having a street address with an even last digit. Outdoor irrigation by sprinklers is permitted only on odd days of the month for those locations having a street address with an odd last digit. No outdoor irrigation shall take place between the hours of 10:00 a.m. and 6:00 p.m. Irrigation by hand held hose, drip irrigation, hand held bucket, or similar container or by use of a cleaning machine equipped to recycle any water used are permitted anytime. In no event shall any water so used be permitted to run off into adjacent property, streets, alleys or storm drains;
- 4.0 Washing of vehicles, trailers, boats, and mobile equipment:
  - a. The washing of automobiles, trucks, trailers, boats, and other types of equipment (mobile or otherwise) is prohibited except on the designated outdoor water use days between the hours of 12:00 midnight to 12:00 noon and sundown to 12:00 midnight. Such washing, when allowed, shall be done with a hand held bucket or hand held hose equipped with a positive shutoff nozzle for quick rinses. The nozzle shall be removed when the hose is not in use to ensure the water supply is shutoff;
  - b. No individual, firm or business that regularly washes vehicles for remuneration or provides facilities for customers to do so through coin operated machinery shall be permitted to operate such a business unless their place of business is equipped and operating to approved county standards with equipment to recycle water for use within their facility;
  - c. Nonprofit and community based organizations' fundraising car washes shall be allowed, provided they are otherwise in accordance with all other provisions of a permit to operate a nonprofit carwash.
- 5.0 With respect to eating and drinking establishments of any kind including, but not limited to, any restaurant, hotel, cafe, cafeteria, bar or club, whether public or private, that benefits from the supply of water by the Water Company shall not provide drinking water to any person unless expressly requested.
- 6.0 The refilling or adding of water to swimming pools is prohibited except on designated outdoor water use days, which is restricted between the hours of 10am and 6 pm.
- 7.0 Any non-business, operation related pond, ornamental fountain or other structure making similar use of water is prohibited.

- 8.0 The irrigation of golf course fairways is prohibited. This section shall not apply to the irrigation of any golf course solely with available non-potable or reclaimed wastewater.
- 9.0 The use of water from fire hydrants shall be limited to firefighting and emergency related activities and/or other activities necessary to maintain the health, safety, and welfare of the citizens of the San Antonio Water Company's service area. This restriction shall not apply to businesses, which require the use of water for land development and building construction processes with prior written approval by the Water Company.

B. Exceptions: None of the moderate shortage restrictions shall apply to the following uses of water:

- 1.0 The routine and necessary use of water, other than for landscape irrigation, by a governmental entity in pursuit of its governmental functions for the benefit of the public, such as construction projects and for the cleaning of streets to prevent debris and harmful substances from entering water systems via storm drains;
- 2.0 The routine and necessary use of water, other than for landscape irrigation, for land development (e.g., roadway base preparation, flushing of utility lines, dust control, concrete and asphalt work) and for building construction processes;
- 3.0 The necessary use of water for the routine maintenance and/or repair or construction of water distribution facilities, residential and commercial plumbing and permanently installed landscape irrigation systems;

#### IV. CONSERVATION PROGRAM-HIGH SHORTAGE STAGE

A. In the event the Board determines that the measures fail to produce a sufficient reduction in demand so as to produce a sufficient supply, the use of water within the Water Company's service area shall be additionally restricted and the following provisions shall become effective upon a declaration by the Board and publication of same as follows:

- 1.0 The washing of sidewalks, walkways, driveways, public and private parking areas and other impervious hard surfaced areas by direct hosing when runoff water directly flows to a gutter or storm drain, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety is prohibited;
  - a. Excessive run off of water or unreasonable spray of the areas being watered is prohibited. Every customer is deemed to have his/her water system under control at all times, to know the manner and extent of this water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner;
- 2.0 Allowing, permitting or causing the escape of water through breaks or leaks within the customers plumbing or private water distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the Water Company of a break or leak, is a reasonable time within which to correct such break or leak, or, at a minimum, to stop the flow of water from such break or leak;
- 3.0 Outdoor irrigation of landscape by sprinklers is permitted only on Wednesday and Sunday for those locations having street address with an even last digit. Outdoor irrigation by sprinklers is permitted only on Tuesday and Saturday for those locations having a street address with an odd last digit. Outdoor irrigation for locations not having a street address shall occur on Wednesday and Sunday if located west of San Antonio Avenue or only on Tuesday and Saturday if located east of San Antonio Avenue. No outdoor irrigation shall take place between 6:00 a.m. until one (1) hour before sundown. Irrigation by hand held hose, drip irrigation, or hand held bucket or similar container or by use of a cleaning machine equipped to recycle any water used are permitted anytime. In

no event shall any water so used be permitted to run off into adjacent property, streets, alleys or storm drains;

4.0 Washing of vehicles, trailers, boats and mobile equipment:

- a. The washing of automobiles, trucks, trailers, boats, airplanes and other types of equipment (mobile or otherwise) is prohibited except on the designated outdoor water use days between the hours of 12:00 midnight to 12:00 noon and sundown to 12:00 midnight. Such washing, when allowed, shall be done with a hand held bucket or hand held hose equipped with a positive shutoff nozzle for quick rinses. The nozzle shall be removed when the hose is not in use to ensure the water supply is shutoff;
- b. No individual, firm or business that regularly washes vehicles for remuneration or provides facilities for customers to do so through coin operated machinery shall be permitted to operate such a business unless their place of business is equipped and operating to approved county standards with equipment to recycle water for use within their facility;
- c. Trucks, trailers and other types of mobile equipment (such as garbage trucks and vehicles used to transport food and other perishables) when said washing is necessary in order to protect the health, safety and welfare of the public, shall be restricted to the hours of sundown to noon. Such washing, when allowed, shall be done with a hand held bucket or hand held hose equipped with a positive shutoff nozzle for quick rinses. The nozzle shall be removed when the hose is not in use;
- d. Nonprofit and community based organizations' fundraising car washes shall be allowed, provided they are otherwise in accordance with all other provisions of the appropriate agency with that jurisdiction and this section, and have obtained the necessary permits to operate a nonprofit carwash. Such activities shall be limited to no more than two (2) times in one (1) month. Permit shall become void upon the effective date of the declaration of severe shortage.

5.0 All eating and drinking establishments of any kind whatsoever including, but not limited to, any restaurant, hotel, cafe, cafeteria, bar or club, whether public or private, shall only provide drinking water to any person unless expressly requested.

6.0 The refilling or adding of water to existing swimming pools is prohibited except on designated outdoor water use days. New pool construction filling shall be by permit only.

7.0 Any non-business, operation related pond, ornamental fountain or other structure making similar use of water is prohibited.

8.0 The waters of golf course tee areas and fairways are prohibited unless done with reclaimed wastewater or non-potable water.

9.0 The use of water from fire hydrants shall be limited to firefighting and emergency related activities and/or other activities necessary to maintain the health, safety, and welfare of the citizens of the San Antonio Heights. This restriction shall not apply to businesses, which require the use of water for land development and building construction processes, pursuant to prior written approval by the Water Company.

B. Exceptions: None of the high shortage restrictions shall apply to the following uses of water provided there is prior written approval by the Board:

1.0 The routine and necessary use of water, other than for landscape irrigation, by a governmental entity in pursuit of its governmental functions for the benefit of the public, such as construction projects and for the cleaning of streets to prevent debris and harmful substances from entering water systems via storm drains;

2.0 The routine and necessary use of water, other than for landscape irrigation, for land development (e.g., roadway base preparation, flushing of utility lines, dust control, concrete and asphalt work) and for building construction processes;

- 3.0 The necessary use of water for the routine maintenance and/or repair or construction of water distribution facilities, residential and commercial plumbing and permanently installed landscape irrigation systems;

#### V. CONSERVATION PROGRAM – SEVERE SHORTAGE STAGE

- A. In the event the Board of Directors determines that the measures fail to produce a sufficient reduction in demand so as to produce a sufficient supply, then the use of water within the Company's service area shall be additionally restricted and the following provisions shall become effective upon a declaration by the Board of Directors and publication of same as follows:

- 1.0 The washing of sidewalks, walkways, driveways, public and private parking areas and other impervious hard surfaced areas by direct hosing when runoff water directly flows to a gutter or storm drain, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety is prohibited;
  - a. Excessive run off of water or unreasonable spray of the areas being watered is prohibited. Every customer is deemed to have his/her water system under control at all times, to know the manner and extent of this water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner;
- 2.0 Allowing, permitting or causing the escape of water through breaks or leaks within the customers plumbing or private water distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the Water Company of a break or leak, is a reasonable time within which to correct such break or leak, or, at a minimum, to stop the flow of water from such break or leak;
- 3.0 Outdoor irrigation of landscape by sprinklers is permitted only on Sunday for those locations having street address with an even last digit. Outdoor irrigation by sprinklers is permitted only on Saturday for those locations having a street address with an odd last digit. Outdoor irrigation for locations not having a street address shall occur on Sunday if located west of San Antonio Avenue or only on Saturdays if located east of San Antonio Avenue. No outdoor irrigation shall take place between 6:00 a.m. until one (1) hour before sundown. Irrigation by hand held hoses, drip irrigation, or hand held bucket, or similar container or by use of a cleaning machine equipped to recycle any water used are permitted anytime. In no event shall any water so used be permitted to run off into adjacent property, streets, alleys or storm drains;
- 4.0 Washing of vehicles, trailers, boats, and mobile equipment.
  - a. The washing of automobiles, trucks, trailers, boats, and other types of equipment (mobile or otherwise) is prohibited except as provided elsewhere in this section;
  - b. No individual, firm or business that regularly washes vehicles for remuneration or provides facilities for customers to do so through coin operated machinery shall be permitted to operate such a business unless their place of business is equipped and operating to approved county standards with equipment to recycle water for use within their facility. Washing of vehicles in such facilities shall occur only between the hours of 6:00 a.m. and 12:00 noon;
  - c. Trucks, trailers, and other types of mobile equipment (such as garbage trucks and vehicles used to transport food and other perishables) when said washing is necessary in order to protect the health, safety and welfare of the public, shall be restricted to the hours of sundown to 12:00 noon. Such washing when allowed, shall be done with a hand held bucket or hand held hose equipped with a positive shutoff nozzle for quick rinses. The nozzle shall be removed when the hose is not in use.

- 5.0 All eating and drinking establishments of any kind including, but not limited to, any restaurant, hotel, cafe, cafeteria, bar or club, whether public or private, shall only provide drinking water to any person unless expressly requested.
- 6.0 The refilling or adding of water to existing swimming pools is prohibited except on designated outdoor water use days. New pool construction filling shall be by permit only.
- 7.0 Any non-business, operation related pond, ornamental fountain or other structure making similar use of water is prohibited.
- 8.0 The watering of golf course tee areas and fairways is prohibited unless done with reclaimed wastewater.

## VI. IMPLEMENTATION

- A. In case of severe water shortage, which could occur due to a catastrophic failure of any of the Water Company's key water supply sources (i.e. SAWCo Tunnel) would result in an emergency meeting with the Board to set the appropriate reduction of entitlement per share effective upon a declaration by the Board of Directors and publication of same.
- B. The Board shall review special cases, which cannot follow the letter of this part for recommendation to the Board who may grant variances.
  - 1.0 A variance shall be granted only for reasons of economic hardship, which is defined as a threat to an individual business's primary source of income. (Under no circumstances shall inconvenience or the potential for damage of landscaping be considered an economic hardship, which justifies a variance.) The Board shall recommend only the implementation of equitable water use restrictions, which further the purpose and intent of the water conservation plan. The special water use restrictions recommended by the Board of Directors in each case shall be set forth on the face of the variance, permit or compliance agreement. A nonrefundable fee of fifty dollars (\$50.00) per permit application for all requests shall be assessed to reimburse the Water Company for administrative costs.
  - 2.0 A variance or permit issued under moderate shortage shall not be valid upon implementation of high or severe shortage stages unless the permit specifically addresses either or both of those stages upon initial issuance. Said multi-stage permit would have to reflect significant additional savings of water, or nonuse of water, under progressively more critical shortage stages. A variance or permit shall expire under its own terms and conditions and/or when another water conservation stage is in effect.
    - a. Exception: If, within the period of the permit, the conservation stage for which the permit was originally issued is reinstated, the permit will be considered valid until the original expiration date, as long as that conservation stage is in effect.
  - 3.0 Any person, corporation or association who is issued a variance or permit and makes use of water pursuant to said variance, permit or compliance agreement shall provide proof of said variance, permit or compliance agreement upon demand by any person authorized by the Water Company.
  - 4.0 Upon findings of non-compliance of a shareholder of any provision of this part, will cause revocation of any permit, variance, or compliance agreement previously granted. However, the applicant shall be notified of the proposed revocation five (5) working days before taking such action, and applicant shall be given the opportunity to be heard by the Board.

VII. ADDITIONAL ASSESSMENT FOR VIOLATION OF THIS RESOLUTION

A. Guidelines.

- 1.0 Any shareholder who uses water provided by the Water Company knowingly use, or permit the use of water in a manner contrary to any provision of this part, or in an amount in excess of that use permitted by the provisions of this resolution or that is reasonably necessary to satisfy the water usage need shall be found in non-compliance with this resolution and assessed the following:
  - a. If found in non-compliance of this resolution for a first occurrence during any calendar year or declared conservation stage, whichever time period is shorter in duration shall be assessed \$50;
  - b. If found in non-compliance of this resolution for a second occurrence during any calendar year or declared conservation stage, whichever time period is shorter in duration shall be assessed \$100;
  - c. If found in non-compliance of this resolution for a third occurrence or more during any calendar year or declared conservation stage, whichever time period is shorter in duration shall be assessed \$500.
- 2.0 In addition to the above, the General Manager is hereby empowered to enact other restrictive measures that are intended to abate the conductor circumstances comprising the occurrence, including but not limited to the following: placement of a flow restricting device upon the water service, locking off of water meter, removal of water meter, and shutting off of the service line valve.

VIII. If any section, subsection, sentence, clause, phrase, or portion of this Resolution is for any reason held to be invalid or unenforceable by a court of competent jurisdiction, the remaining portions of this Resolution shall nonetheless remain in full force and effect. The shareholders of the Water Company hereby declare that they would have adopted each section, subsection, sentence, clause, phrase, or portion of this Resolution, irrespective of the fact that anyone or more sections, subsections, sentences, clauses, phrases, or portions of this Resolution be declared invalid or unenforceable.

The foregoing ordinance was PASSED, APPROVED AND ADOPTED by the Board of Directors of the San Antonio Water Company on the \_\_\_\_\_th day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Tom Thomas, President

ATTEST:

\_\_\_\_\_  
Ken Willis, Secretary

I, Ken Willis, Secretary of the San Antonio Water Company Board of Directors, Upland, California, do hereby certify that the foregoing Resolution was introduced at a regular meeting of the Board of Directors of the San Antonio Water Company held on the \_\_\_\_\_th day of \_\_\_\_\_, 2006, and was adopted at a regular meeting of the Water Company Board of the San Antonio Water Company on the \_\_\_\_\_th day of \_\_\_\_\_, 2006, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAINED:





## Appendix H

Resolution No. 2007-01-01 (Operating and Emergency Reserve)



“Draft”  
RESOLUTION No. 2007-01-01

OF THE SAN ANTONIO WATER COMPANY AMENDING RESOLUTION No. 2003-10-01  
Entitled  
**“RESERVES FOR MASTER PLAN PROJECTS, EMERGENCY OCCURRENCES  
AND OPERATING EXPENSES”**

WHEREAS, in July 1994 the Company did authorize and fund the formation of an Emergency Reserve account and a Operating Expense Reserve account; and,

WHEREAS, in October 21, 2003, the Board of Directors did approve and adopt Resolution No. 2003-10-01 establishing the Reserve for Operating Expenses and Emergency Occurrences in the amount of \$1,450,000 for the purpose of providing a source for payment of Operating Expenses in the event of loss of revenue from its customary sources for any unforeseen reason or reasons (\$650,000), and any increases in Operating Expenses, either ordinary or extraordinary, including, but not limited for an occurrence or occurrences, either natural or manmade, that impacts or may impact the integrity or ability of the water system to function or the availability of the water supply (\$800,000); and, hereby declares its intent to maintain this Reserve at all times as established, or as may be modified from time to time; and,

WHEREAS, San Antonio Water Company recognizes the need to provide for an emergency fund to purchase water as needed during periods of high demand in a water shortage or loss of water supply scenario.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors of the San Antonio Water Company, in Upland, California, amends the resolution to establish a “Drought Fund” restricting \$150,000 in the existing Reserve for Operating Expenses and Emergency Occurrence for the purpose of purchasing water in the event of a loss of water supply.

I, Ken Willis, Secretary of the San Antonio Water Company, do hereby certify that the foregoing Resolution was adopted on June 19, 2007, at a regular meeting of the Directors of the San Antonio Water Company by the following vote:

AYES:  
NOES:  
ABSENT:  
ABSTAIN:

SAN ANTONIO WATER COMPANY

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## **Appendix I**

### **High Shortage Stage Urgent Notice**

# URGENT NOTICE



## DROUGHT IMPACT NOTICE TO SHAREHOLDERS

In response to the Drought Emergency and the back-to-back record dry years, on February 17, 2015, the Board approved the following to take effect on **March 1, 2015.**

- 1. Due to reduced water supply, the Water Company will not be able to deliver the current established entitlement.**

**Action:** The Board approved reducing entitlements **15%.**

### ***New Domestic Bi-Monthly Billing based on reduction***

For Typical Meter Recording in Cubic Feet (CF) Units				
Months	1 share	¾ share	½ share	¼ share
Jan-Feb	8,504	6,378	4,252	2,126
March-April	10,316	7,737	5,158	2,579
May-June	14,916	11,187	7,458	3,729
July-August	18,540	13,905	9,270	4,635
Sept.-Oct.	16,798	12,599	8,399	4,200
Nov - Dec	9,688	7,267	4,844	2,423

### ***New Irrigation Monthly Billing based on reduction***

For Typical Meter Recording in Cubic Feet (CF) Units				
Months	1 Share	¾ Share	½ share	¼ share
Dec-Feb	4,252	3,189	2,126	1,063
Mar	4,879	3,659	2,440	1,220
Apr	5,437	4,077	2,718	1,359
May	6,691	5,018	3,346	1,673
Jun	8,225	6,168	4,112	2,056
Jul-Sept	9,270	6,952	4,635	2,318
Oct	7,528	5,646	3,764	1,882
Nov	5,437	4,077	2,718	1,359

- 2. There will be little or no supplemental water available for use beyond shareholder entitlements. Remember, purchasing any additional water (if available) will be at a premium (\$1.33/HCF).**

**Action:** The Board approved Tiered rate increase **from \$1.13/hcf to \$1.33/hcf** (18% increase, drought rate) still applies.

- 3. The Governor declared a Drought Emergency urging citizens to reduce their water consumption by 20%. The Water Company's groundwater wells continue to drop along with reduced groundwater production. There is no snowmelt to augment the Water Company's summer water supply.**

**Action:** The Board approved to raise the water alert status to the "High Shortage Stage" per Resolution No. 2006-06-03.

- I. CONSERVATION PROGRAM-HIGH SHORTAGE STAGE. **Bold** items are the increased level from the moderate shortage alert.

- A. In the event the Board determines that the measures fail to produce a sufficient reduction in demand so as to produce a sufficient supply, the use of water within the Water Company's service area shall be additionally restricted and the following provisions shall become effective upon a declaration by the Board and publication of same as follows:

- 1.0 The washing of sidewalks, walkways, driveways, public and private parking areas and other impervious hard surfaced areas by direct hosing when runoff water directly flows to a gutter or storm drain, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety is prohibited;
  - a. Excessive run off of water or unreasonable spray of the areas being watered is prohibited. Every customer is deemed to have his/her water system under control at all times, to know the manner and extent of this water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner;
- 2.0 Allowing, permitting or causing the escape of water through breaks or leaks within the customers plumbing or private water distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the Water Company of a break or leak, is a reasonable time within which to correct such break or leak, or, at a minimum, to stop the flow of water from such break or leak;
- 3.0 Outdoor irrigation of landscape by sprinklers is permitted **only on Wednesday and Sunday for those locations having street address with an even last digit. Outdoor irrigation by sprinklers is permitted only on Tuesday and Saturday for those locations having a street address with an odd last digit. Outdoor irrigation for locations not having a street address shall occur on Wednesday and Sunday if located west of San Antonio Avenue or only on Tuesday and Saturday if located east of San Antonio Avenue. No outdoor irrigation shall take place between 6:00 a.m. until one (1) hour before**

**sundown.** Irrigation by hand held hose, drip irrigation, or hand held bucket or similar container or by use of a cleaning machine equipped to recycle any water used are permitted anytime. In no event shall any water so used be permitted to run off into adjacent property, streets, alleys or storm drains;

4.0 Washing of vehicles, trailers, boats and mobile equipment:

- a. The washing of automobiles, trucks, trailers, boats, airplanes and other types of equipment (mobile or otherwise) is prohibited except on the designated outdoor water use days between the hours of 12:00 midnight to 12:00 noon and sundown to 12:00 midnight. Such washing, when allowed, shall be done with a hand held bucket or hand held hose equipped with a positive shutoff nozzle for quick rinses. The nozzle shall be removed when the hose is not in use to ensure the water supply is shutoff;
  - b. No individual, firm or business that regularly washes vehicles for remuneration or provides facilities for customers to do so through coin operated machinery shall be permitted to operate such a business unless their place of business is equipped and operating to approved county standards with equipment to recycle water for use within their facility;
  - c. **Trucks, trailers and other types of mobile equipment (such as garbage trucks and vehicles used to transport food and other perishables) when said washing is necessary in order to protect the health, safety and welfare of the public, shall be restricted to the hours of sundown to noon. Such washing, when allowed, shall be done with a hand held bucket or hand held hose equipped with a positive shutoff nozzle for quick rinses. The nozzle shall be removed when the hose is not in use;**
  - d. Nonprofit and community based organizations' fundraising car washes shall be allowed, provided they are otherwise in accordance with all other provisions of the appropriate agency with that jurisdiction and this section, and have obtained the necessary permits to operate a nonprofit carwash. **Such activities shall be limited to no more than two (2) times in one (1) month. Permit shall become void upon the effective date of the declaration of severe shortage.**
- 5.0 All eating and drinking establishments of any kind whatsoever including, but not limited to, any restaurant, hotel, cafe, cafeteria, bar or club, whether public or private, shall only provide drinking water to any person unless expressly requested.
- 6.0 **The refilling or adding of water to existing swimming pools is prohibited except on designated outdoor water use days. New pool construction filling shall be by permit only.**
- 7.0 Any non-business, operation related pond, ornamental fountain or other structure making similar use of water is prohibited.
- 8.0 **The waters of golf course tee areas and fairways are prohibited unless done with reclaimed wastewater or non-potable water.**

- 9.0 The use of water from fire hydrants shall be limited to firefighting and emergency related activities and/or other activities necessary to maintain the health, safety, and welfare of the citizens of the San Antonio Heights. This restriction shall not apply to businesses, which require the use of water for land development and building construction processes, pursuant to prior written approval by the Water Company.
- B. Exceptions: None of the high shortage restrictions shall apply to the following uses of water **provided there is prior written approval by the Board**:
- 1.0 The routine and necessary use of water, other than for landscape irrigation, by a governmental entity in pursuit of its governmental functions for the benefit of the public, such as construction projects and for the cleaning of streets to prevent debris and harmful substances from entering water systems via storm drains;
- 2.0 The routine and necessary use of water, other than for landscape irrigation, for land development (e.g., roadway base preparation, flushing of utility lines, dust control, concrete and asphalt work) and for building construction processes;
- 3.0 The necessary use of water for the routine maintenance and/or repair **or construction** of water distribution facilities, residential and commercial plumbing and permanently installed landscape irrigation systems;

## VII. ADDITIONAL ASSESSMENT FOR VIOLATION OF THIS RESOLUTION

### A. Guidelines.

- 1.0 Any shareholder who uses water provided by the Water Company knowingly use, or permit the use of water in a manner contrary to any provision of this part, or in an amount in excess of that use permitted by the provisions of this resolution or that is reasonably necessary to satisfy the water usage need shall be found in non-compliance with this resolution and assessed the following:
- a. If found in **non-compliance** of this resolution for a **first occurrence** during any calendar year or declared conservation stage, whichever time period is shorter in duration shall be **assessed \$50**;
- b. If found in non-compliance of this resolution for a **second occurrence** during any calendar year or declared conservation stage, whichever time period is shorter in duration shall be **assessed \$100**;
- c. If found in non-compliance of this resolution for a **third occurrence** or more during any calendar year or declared conservation stage, whichever time period is shorter in duration shall be **assessed \$500**.
- 2.0 In addition to the above, the General Manager is hereby empowered to enact other **restrictive measures** that are intended to abate the conductor circumstances

comprising the occurrence, including but not limited to the following: placement of a **flow restricting device** upon the water service, **locking off of water meter**, **removal of water meter**, and **shutting off of the service line valve**.

VIII. If any section, subsection, sentence, clause, phrase, or portion of this Resolution is for any reason held to be invalid or unenforceable by a court of competent jurisdiction, the remaining portions of this Resolution shall nonetheless remain in full force and effect. The shareholders of the Water Company hereby declare that they would have adopted each section, subsection, sentence, clause, phrase, or portion of this Resolution, irrespective of the fact that anyone or more sections, subsections, sentences, clauses, phrases, or portions of this Resolution be declared invalid or unenforceable.

The foregoing ordinance was PASSED, APPROVED AND ADOPTED by the Board of Directors of the San Antonio Water Company on the 19 th day of September, 2006.



## **Appendix J**

### **CUWCC Annual Report 2013-2014**



February 23, 2015

Ms. Felicia Marcus, Chair and Members  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814

Dear Chair Marcus and Members of the Board:

We are pleased to provide you with the 2013-2014 Annual Report for the California Urban Water Conservation Council. This report is our annual update to the State Water Resources Control Board on Council activities.

Accomplishments of statewide importance are summarized in this report. During this period the Council:

- Initiated an effort to promote sustainable landscaping in California, which included two symposia with almost 400 attendees.
- Launched a new BMP reporting application and conducted training sessions throughout the state to train members on use of the application.
- Launched an updated website: [cuwcc.org](http://cuwcc.org).
- Began a process to review the conservation pricing BMP for potential revisions, including two workshops attended by almost 200 participants.

This report includes new data on the implementation of the Council's Best Management Practices by member urban water suppliers for reporting years 2011 and 2012.

If you have any questions, please contact me at 916-552-5885 and thank you for your support of the Council and its efforts to maximize urban water conservation in California.

Sincerely,



Gregory Weber  
Executive Director

Enclosure



716 10<sup>th</sup> Street  
Suite 200  
Sacramento  
California 95814

Phone  
916/ 552-5885  
Fax  
916/ 552-5877

[www.cuwcc.org](http://www.cuwcc.org)



# Annual Report 2013-2014

*Partners for a Water-Efficient California*

CALIFORNIA URBAN WATER CONSERVATION COUNCIL

716 10th Street, Suite 200  
Sacramento CA95814  
916.552.5885  
[www.cuwcc.org](http://www.cuwcc.org)

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## Introduction

The California Urban Water Conservation Council is pleased to submit this overview of its activities during 2013 and 2014.

Since the signing of the Memorandum of Understanding Regarding Urban Water Conservation in 1991, the Council has been dedicated to maximizing urban water conservation in the state. The Council works to achieve this mission by supporting and integrating innovative technologies and practices; encouraging effective public policies; advancing research, training, and public education; and building on collaborative approaches and partnerships.

The Council is a collaborative effort uniting water service providers, environmental groups and other interested parties who together envision a water-efficient California that is characterized by reliable and sustainable water resources, healthy ecosystems, and economically strong communities. The Council is led by an active 25-member board of directors. In 2014 the Council welcomed a new Executive Director, Gregory Weber, to help lead the organization. Greg is the Council's fourth Executive Director overall, and its third full-time.

The work of the Council's 8-member staff is supported by member dues, federal and state contracts and grants, and private grants.

The report contains two sections. Part 1 describes 8 Council programs and activities undertaken during 2013 & 2014. Part 2 sets out the data on water utility operations voluntarily reported to the Council by members for 2011 & 2012.

## Part 1: Council Water Savings Programs and Activities

### 1. Sustainable Urban Landscapes

For more than two decades, Council members have identified and implemented best management practices for water conservation. Over the last several years, the Council's interest in outdoor water use has grown and in 2011 the Council tasked its Landscape Committee with developing a long-term vision for sustainable urban landscapes.

The Committee's work included identifying common elements from a variety of public and private sustainability programs and resources, and surveying subject matter experts and other stakeholders for input on the latest sustainable landscaping practices. What emerged from this process is a holistic and integrated vision for landscape sustainability that transcends beyond water-use efficiency to also address a multitude of related benefits, including:

- reduced dry-season runoff
- onsite retention of storm water

- embedded energy savings
- reduced green waste generation
- reduced greenhouse gas emissions; and
- enhanced wildlife habitat in urban settings.

In May 2014, the Council and its partners conducted two symposia dedicated to accelerating the pace of change toward more sustainable landscapes in California. The symposia took place in Northern and Southern California and were attended by almost 400 people from local water agency personnel, to nonprofit executives, state and federal agency representatives and private industry. The Council appreciated the support of State Water Board staff in planning the symposia, and of Board members in participating as presenters.

Following the symposia, the Council released a [report](#) summarizing the symposia findings. The report has been well-received and is serving as a starting point for the Council's efforts to continue to build partnerships. One of the first steps being taken is the development of a draft framework for a market transformation plan. This work will continue in 2015.

In addition to the State Water Board, the following agencies assisted the Council in planning the symposia and remain active in efforts to move forward:

- California Department of Water Resources;
- California Department of Pesticide Regulation;
- Cal Recycle; and
- University of California, Davis

Funding for the symposia was provided by California Department of Water Resources, California Department of Pesticide Regulation, Cal Recycle, and the Water Forum.

In 2013 and 2014, the Landscape Committee has been developing the Landscape Resources Clearinghouse. This is a tool that will contain program information and other resources for agencies and end users. It will be used by Council members and non-member stakeholders to share, review and search for resources that encourage and support sustainable landscaping in California. Committee members worked on populating the database for the toolkit and look forward to completing the project in 2015 with added functionality running on a web-based application.

## 2. Database Reporting Application

The Memorandum of Understanding describes five categories of water conservation programs that water agencies can implement to better manage their water resources. The Council's online BMP reporting application is used by water suppliers to submit information on the progress of their water conservation efforts and to receive confirmation regarding their coverage status.

In June 2013, following several years of development, the Council launched a new and improved database reporting application. Funding for this project was provided by the U.S. Bureau of Reclamation and Council members. The reporting application allows Council member agencies to log in at any time and report on implementation of the BMPs. To familiarize members with the new system, Council staff

conducted seven in-person trainings for members around the state and developed 14 “How To” [webinars](#) that are accessible on the Council website, along with a set of six downloadable user guides. The Council also periodically transmits the *BMP Reporting News*, an electronic newsletter, to its members offering reporting tips and information.

Council members frequently request custom reports from the Council utilizing their reporting data.

Highlights from the most recent set of members’ implementation reports are set out below, in Part 2.

### 3. Conservation Pricing

In 2007 the Council adopted an amendment to the conservation pricing BMP (then BMP 11, currently numbered BMP 1.4), which included a provision calling for a review of the BMP for possible refinement after five years. In 2012 the Council initiated this review and directed the Utility Operations (UO) Committee to perform several investigations to support this review. The Committee:

1. Looked at the rate at which water agencies are meeting the 70/30 volumetric/fixed proportions in Option 1 of the BMP;
2. Discussed the question the impact of Prop 218 on volumetric pricing, and found no indication of incompatibility; and
3. Surveyed water agencies about the barriers to implementing the BMP.

The Council held two BMP 1.4 Retail Conservation Pricing workshops in 2013 in partnership with ACWA, CUWA, and DWR. Almost 200 people attended. The workshops included panel discussions and small group listening sessions where participant feedback was collected. The [BMP 1.4 Workshop Report](#) summarizes the feedback from these workshops. A project scope and project advisory committee (PAC) structure was approved by the Council Board in August 2013. All of the workshop feedback and committee research was made available for the PAC’s review. The PAC originally was given a 90-day timeline to complete its tasks, which was extended another 90 days until January 2014. PAC meetings were open to all Council members. After meeting seven times throughout the fall of 2013, the BMP 1.4 PAC developed a set of recommendations as well as a list of outstanding issues. These were both set out in the [BMP 1.4 PAC final report](#).

The Board reviewed the PAC recommendations and created a Board committee tasked with addressing the outstanding policy and implementation questions. Much of the committee’s work involves review and refinement of the possible conservation pricing matrix originally developed by the PAC. More information on the process and PAC documents is available on the Council [website](#). The Council’s Committee is nearing completion of its work and will be reporting its recommendations to the Council’s Board in early 2015.

### 4. Trainings and Symposia

In 2013 and 2014, the Council conducted trainings and symposia that were attended by 750 participants, both members and non-members. These events included:

- BMP 1.2 Water Loss Webinar

- BMP 1.3 Feasibility Study Tool Workshop and Webinar
- 7 BMP Reporting Workshops
- 14 BMP Reporting “How To” Webinars
- Avoided Costs and Environmental Benefits Workshop
- Water Conservation Coordinator II Training
- CII Workshop
- Achieving a New Normal in California Landscapes Symposia (Northern and Southern California)
- Water Conservation Coordinator I Training
- Water Loss / Component Analysis Workshop

## 5. Research

The Council’s mission includes the promotion of water conservation and efficiency research. To that end, the Research and Evaluation Committee convenes to address complex technical issues related to BMP implementation, savings measurements, effectiveness analysis and other related issues. In 2013 and 2014, the Committee completed the Plan Review potential Best Management Practices (PBMP) and began review of a draft Graywater PBMP. Work also began on an update to the Council’s *Costs and Savings Study*. Phase I of that update was completed in 2014; Phase 2 will be carried out in 2015. PBMP research is funded by a grant from the Department of Water Resources, while the *Costs and Savings Study* work is being funded by a grant from the California Water Foundation.

Research on the following PBMP topics also began in 2013-14:

- Multi-Stream Rotary Nozzles;
- Turf Removal (Landscape Conversion);
- Soil Moisture Sensors
- Drip Irrigation and Related Systems; and
- Customer Water Use Messaging.

## 6. Outreach and Communication

A remodeled Council website was launched in 2014 at [www.cuwcc.org](http://www.cuwcc.org). Some of the site’s new features are only for members in good standing. Many other features are available to members and non-members alike.

With the new website, members and others are able to:

- conduct more robust searches for pages, documents, events, and news;
- subscribe to regular RSS updates on water efficiency and conservation news;
- add calendar events to their work calendar; and,
- find members through a searchable directory.

In addition, to facilitate document sharing and meeting preparation, committee chairs and Council board liaisons are also able to upload files for committee members.

The Council is also beginning the rollout of two new website features: on-line workshop registration and payment, and a Council store for purchases.

The Council’s e-newsletter, *Council Link*, is sent to members about twice a month with updates on Council meetings and trainings and other news from the water conservation community.

In its 2011-2015 Strategic Plan, the Council called for the adoption and promotion of a statewide public education/awareness program. In 2013, thanks to the work of the Council's Education Committee, the Council became a partner of the Save Our Water campaign. Save Our Water is an ongoing, comprehensive statewide water conservation education program. The Education Committee also developed a template for a student video contest called the [Video Contest in a Box](#) that can be accessed via the Council website.

## **7. Drought Response**

As California's drought entered its third year in 2014, the Council aimed to provide services and tools that would help members meet their increased water conservation goals. The Department of Water Resources stepped in with funding for two projects to meet this need.

The first is called the Jump Start Water Shortage Toolkit. It will help water service providers quickly ramp up their water conservation efforts to respond to the drought. Many water service providers are small and may not have the resources or occasion to develop a full range of water conservation and efficiency programs. This tool kit will provide turnkey tools for water agencies that get maximum water savings in a minimum amount of time. At the same time, it will identify those tools with longer lead times that water service providers should be developing now to be able to implement for savings next year. The tool kit is currently under development and should be available in March 2015.

The second DWR-funded project in response to the drought is the development of a video clearinghouse on the Council website. The Council polled its members for existing "how to" water conservation videos, reviewed the videos and organized them on the Council website. This web page will go live in January 2015. In addition, the Council is providing a gap analysis to DWR that will list video subjects not currently available. Efforts will be made to identify partners to help produce new videos to fill the missing gaps. Links to the video clearinghouse will be distributed widely to Council partners, members, and non-members.

## **8. Other Projects**

Council staff began working with E & J Gallo Winery in Fresno in October 2013 on an on-site water reuse project to collect cooling tower blow down water and reuse it as the first wash in the tank clean in place cleaning process. The project is estimated to save as much as 13 million gallons of water per year and is being funded by DWR with Proposition 50 grant funding.

Since 2007, the Council has operated two "Smart Rebate" programs. The first, funded by DWR with a Proposition 50 grant, involved 37 water utilities. Between its start and its conclusion in 2013, the program issued 11,015 rebates totaling \$2,118,700. Rebated appliances and equipment included:

- High Efficiency(HET) and Ultra Low Flow Toilets (ULFT) for residential customers,
- ULFTs for commercial customers,
- HETs for commercial customers,
- High Efficiency Washers (HEWs) for residential customers,



- HEWs for commercial customers
- High Efficiency Urinals for commercial customers,
- Pressurized Water Brooms,
- X-Ray Film Processor Recycling Systems, and
- Digital X-Ray Systems

The second program is fully funded by Council members with no outside grants or other funding. Eight Council member water utilities participate in this program. Since the program's start in December 2013, almost 7,000 rebates have been issued to commercial and residential customers. Between 2007 and 2014, the Council estimates a water savings of 11,500 acre-feet has been realized through these two programs.

Each year, the Council issues two awards to recognize water conservation and efficiency leaders. The first award is the Mike Moynihan award. It goes to a person who demonstrates excellence in statewide or institutional conservation innovations and practices. The second award is the Llana Sherman award. It goes to a person who demonstrates excellence in local or community conservation innovations.

In 2013, the Council awarded two Moynihan awards to Tim Blair with the Metropolitan Water District of Southern California, and Toby Roy of the San Diego County Water Authority. In 2014, there were also two winners: Manucher Alemi, California Department of Water Resources, and Dr. Robert Wilkinson, University of California, Santa Barbara.

In 2013, there were two winners of the LLana Sherman award: Joe Berg with the Municipal Water District of Orange County, and Richard Harris of the East Bay Municipal Water District. In 2014, the winner was Chris Dundon, Contra Costa Water District.

## Part 2: Highlights of Signatory Water Savings Activities during 2011-2012

The following information summarizes highlights of the urban water conservation activity undertaken by the MOU signatories during 2011-2012 - the most recent period for which members have voluntarily reported their activities to the Council.<sup>1</sup> The report focuses on BMP 1—Utility Operations. This BMP includes the data suggested by State Board staff to be of most interest to the State Board. Page 13 shows a list of member agencies that reported 2011-12 data.

**BMP 1.1: Operations Practices:** At least 94% of reporting agencies stated that they had a conservation coordinator in both 2011 and 2012. See Figure 1 and Figure 2.

**BMP 1.2: Water Loss Control:** In 2014 the Utility Operations Committee began reviewing AWWA Water Audit reports submitted to the Council from 2011-2012, Table 1 shows summary statistics from these audits reports. The total number of agencies submitting water audits with valid data, increased between from 86 in 2011 to 97 in 2012; however, the percent of agencies submitting valid audit reports was the same – 72%.<sup>2</sup> The Council is planning a series of hands on workshops to help train California agencies on the AWWA Water Audit Software.

Table 2 highlights a summary of water loss interventions. While more than half of agencies report the number of leaks they repaired, only about a quarter or fewer report other interventions such pipe renewal, surveying for leaks, and reducing pressure. Agencies reported saving over 82,000 AF of water in 2011-12 through these interventions.

**BMP 1.3: Metering With Commodity Rates For All New Connections And Retrofit Of Existing Connections:** Table 3 shows the reported number of unmetered accounts fitted with meters increased by 78% between 2011 and 2012. Figure 3 shows relative percentages of members reporting unmetered connections decreased from 13% to 11%, while the percent of new service connections being metered and billed volumetrically both increased 2% between 2011-12. Twenty-three agencies reported a total of 178,877 unmetered connections in the 2011-12 reporting period.

**BMP 1.4: Retail Conservation Pricing:** The percentage of agencies meeting BMP 1.4 Option 1 increased from 51% to 54%. Figure 4 through Figure 7 show the reported rate structures by customer class and percentage of revenue from volumetric charges in 2011 and 2012.

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<sup>1</sup> There are three caveats to note. First, the reporting results summarized here include only data formally and voluntarily submitted to the Council by MOU signatories. Thus, there is conservation activity by non-signatories or non-reporting agencies that is not included. Second, the data compilations are based on self-reported data provided by the signatories. Although checked for errors, the data has not been verified as accurate by the Council. Finally, the data has been aggregated for summary purposes.

<sup>2</sup> Audit reports were flagged as probably invalid if the included negative water losses or an Infrastructure Leakage Index below 1, or above 20.

## BMP Tables and Figures:

Figure 1: BMP 1.1 Conservation Coordinator - 2011

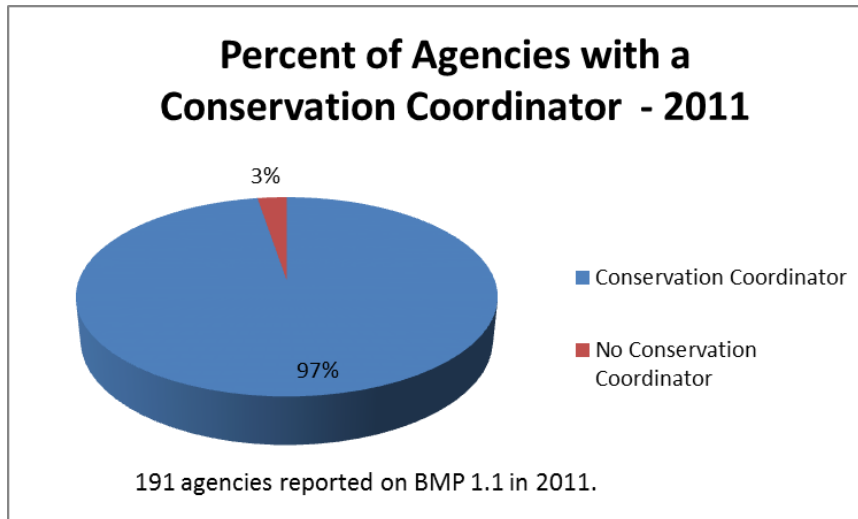


Figure 2: BMP 1.1 Conservation Coordinator - 2012

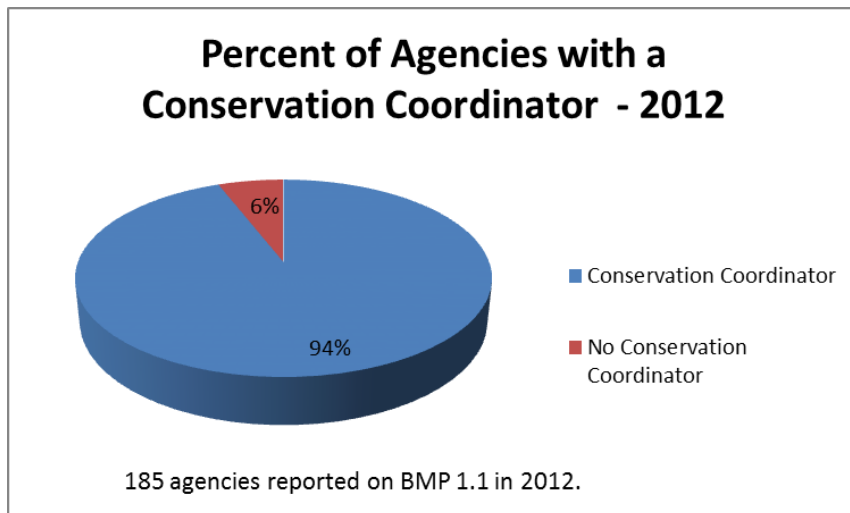


Table 1: BMP 1.2 Water Audit Summary Statistics - 2011-2012

		Real Losses (gal.) per service connection per day*	Real Losses (gal.) per length of main (miles) per day*	Infrastructure Leakage Index (ILI) [Real Losses/UARL]	Audit Score
2011 (86 Reports)	Max	3,233.1	10,026.9	13.4	100.0
	Min	1.1	0.1	1.0	6.2
	Average	87.1	3,909.7	2.9	75.8
	Median	35.3	3,413.2	2.1	74.2
	Standard Deviation	360.8	3,413.0	2.3	12.2
	Number with a value > 0	79	6	78	86
2012 (97 Reports)	Max	1,204.0	26,152.4	17.1	100.0
	Min	6.6	0.1	1.0	6.2
	Average	69.6	7,684.4	3.4	77.3
	Median	37.9	3,312.2	2.1	75.8
	Standard Deviation	137.9	8,485.0	3.4	11.9
	Number with a value > 0	87	9	87	97

\* The AWWA Software calculates only one of these two indicators for each report.

Table 2: BMP 1.2 Reported of Interventions - 2011-2012

		Linear feet of pipe renewal and rehabilitation	Miles Of System Surveyed For Leaks	Pressure Reduction Under taken For Loss Reduction	Total Leaks Repaired	Water Saved (AF)
2011 (196 BMP 1.2 Reports)	Number of Agencies	35	45	20	103	26
	Average	10,655.34	170.35	-	221	2,040.64
	Max	114,210.00	1,248.90	-	2,442	17,968.00
	Min	2.02	0.33	-	2	0.01
	Std Dev	20,850.17	237.88	-	356	4,998.46
2012 (188 BMP 1.2 Reports)	Number of Agencies	45	49	23	101	25
	Average	8,306.30	229.07	-	222	1,158.86
	Max	90,933.00	4,740.00	-	3,164	16,830.00
	Min	1.00	0.67	-	0	0.01
	Std Dev	16,016.40	683.59	-	373	3,502.86

Table 3: BMP 1.3 Metering Report - 2011-2012

		Unmetered Accounts Fitted with Meters during the Past Reporting Year	Number of CII Accounts with Mixed Metering	Number of CII Accounts Retrofitted with Dedicated Irrigation Meters During the Past Reporting Year
2011	Number of Agencies	23	119	20
	Total	65,477	253,173	1,974
	Average	2846.8	2127.5	98.7
	Median	356	618	7.5
	Max	19022	73098	1233
	Min	1	9	1
	Std Dev	4953.0	6927.4	285.3
2012	Number of Agencies	17	110	20
	Total	117,003	356,537	1,661
	Average	6,882.5	3,241.2	83.1
	Median	310	565	6
	Max	97,961	140,185	1,234
	Min	1	5	1
	Std Dev	23,542.3	14,990.5	275.5

Figure 3: BMP 1.3 Metering Implementation - 2011-12

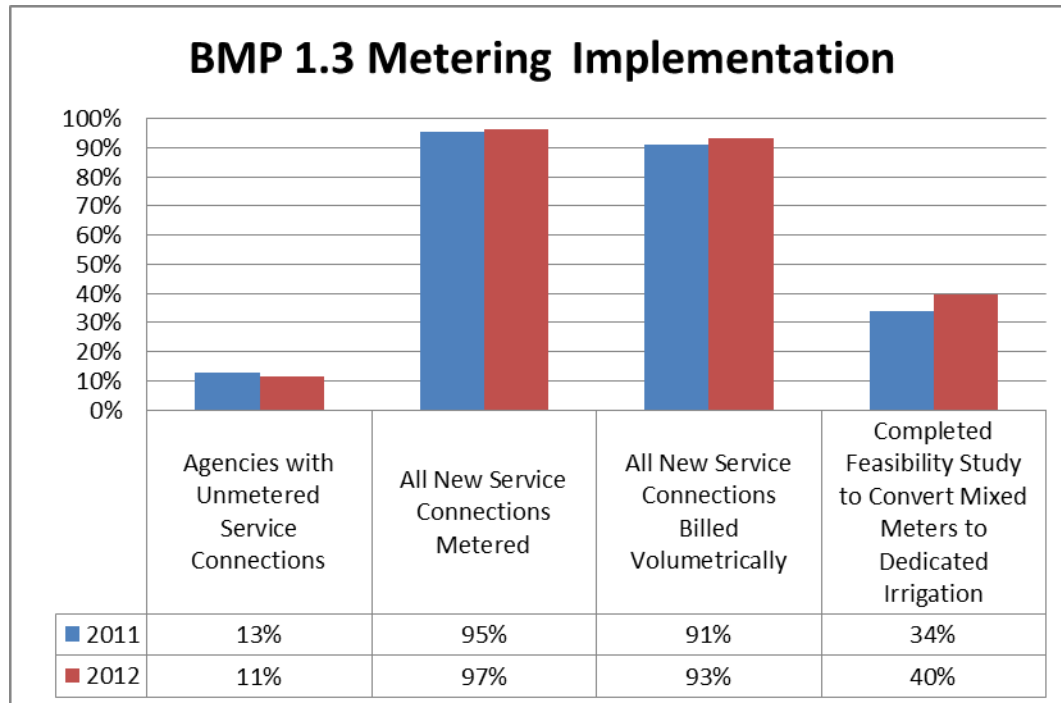


Figure 4: BMP 1.4 Rates By Customer Class- 2011

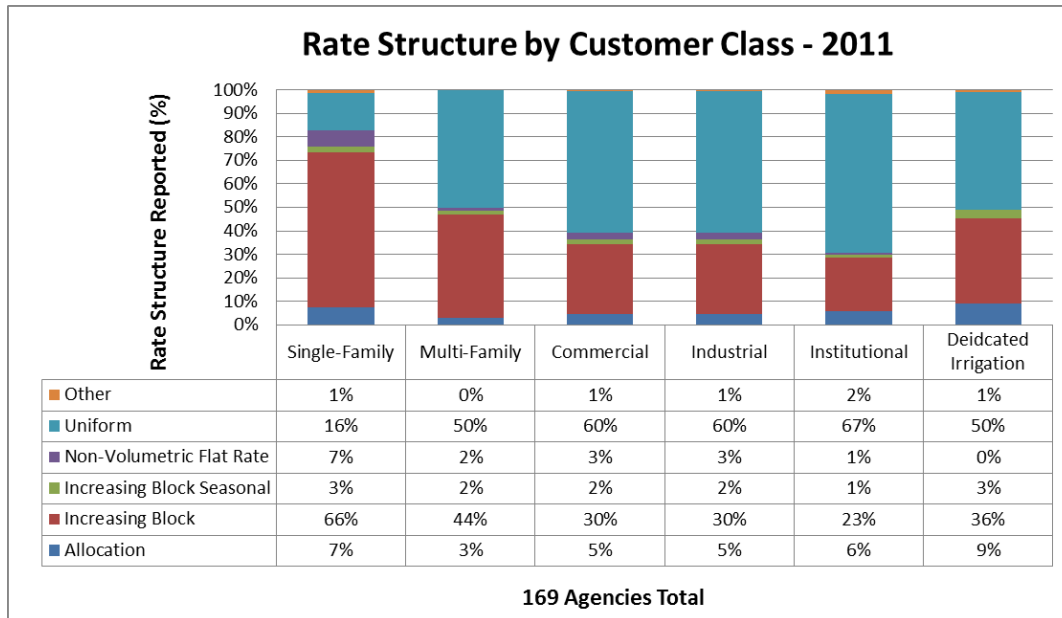


Figure 5: BMP 1.4 Percentage Revenue from Volumetric Rates- 2011

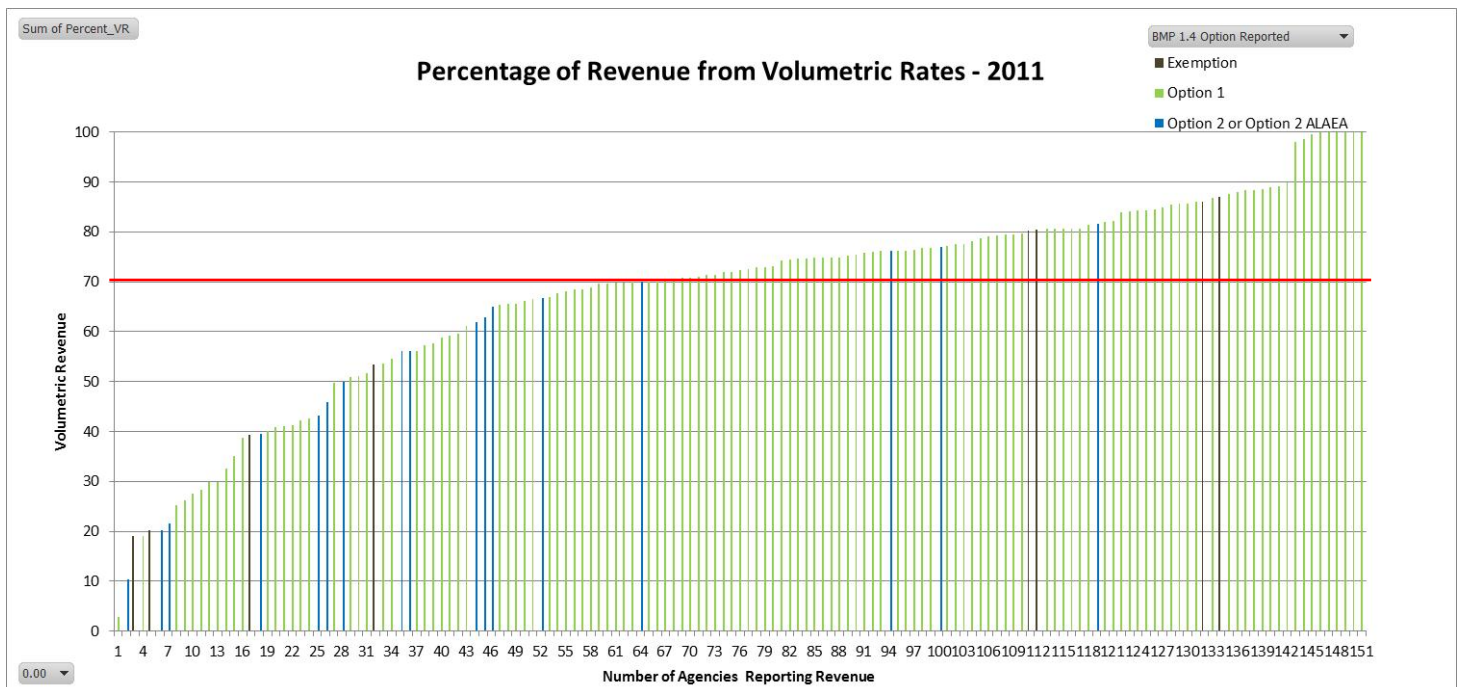


Figure 6: BMP 1.4 Rates By Customer Class- 2012

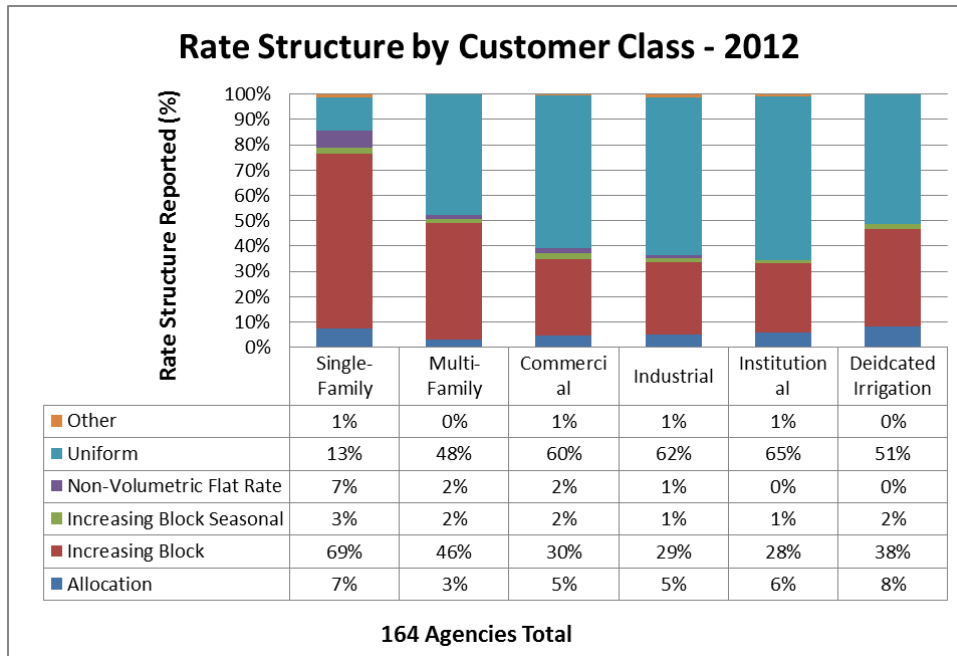
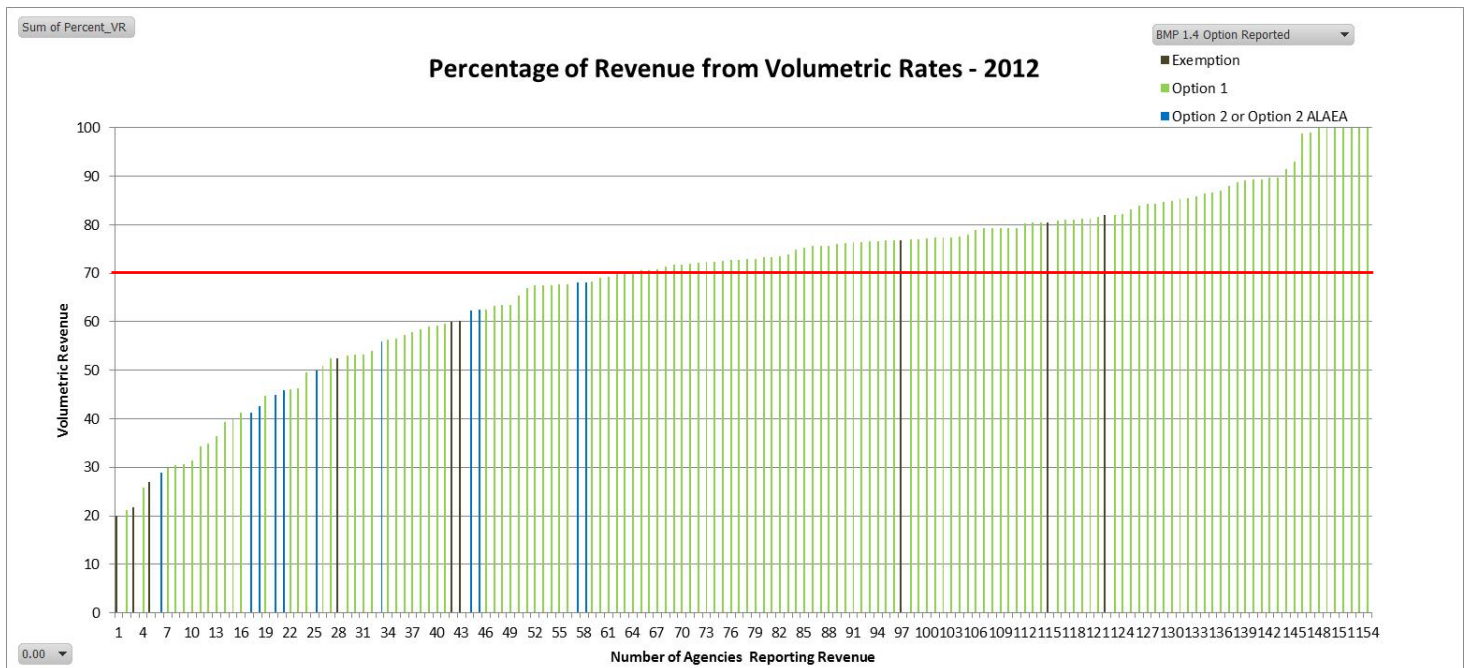


Figure 7: BMP 1.4 Percentage Revenue from Volumetric Rates- 2012



## 2011 – 2012 Reporting Agencies:

The following is a listing of member agencies that reported 2011-12 data.

Anaheim, City of	California Water Service Company – Antelope
Alameda County Water District	Contra Costa WD - Retail
Benicia, City of	Contra Costa WD - Wholesale
CA Water Service Company - Bakersfield	Corona, City of
CA Water Service Company - Bear Gulch	Dublin San Ramon Services District
CA Water Service Company - Chico	East Bay Municipal Utility District
CA Water Service Company - Dixon	Eastern Municipal Water District
CA Water Service Company - Dominguez	El Dorado Irrigation District
CA Water Service Co - East Los Angeles	El Toro Water District
CA Water Service Co - Hermosa / Redondo	Elsinore Valley MWD - Retail
CA Water Service Co - Kern River Valley	Elsinore Valley MWD - Wholesale
CA Water Service Company - King City	Escondido, City of
CA Water Service Company - Livermore	Fair Oaks Water District
CA Water Service Co - Los Altos District	Fallbrook Public Utility District
CA Water Service Company - Marysville	Folsom, City of
CA Water Service Co - Mid-Peninsula	Foothill Municipal Water District
CA Water Service Company - Oroville	Fresno, City of
CA Water Service Co - Palos Verdes	Garden Grove, City of
CA Water Service Co - Redwood Valley	Glendale, City of
CA Water Service Co - Salinas District	Goleta Water District
CA Water Service Company - Selma	Hayward, City of
CA Water Service Co - So San Francisco	Helix Water District
CA Water Service Company - Stockton	Hidden Valley Lake Community Services District
CA Water Service Company - Visalia	Huntington Beach, City of
CA Water Service Company - Westlake	Indian Wells Valley Water District
CA Water Service Company - Willows	Irvine Ranch Water District
Calistoga, City of	Kern County Water Agency
Calleguas Municipal Water District	Lake Arrowhead Community Service District
Camarillo, City of	Lake Sherwood Community Services District
Camrosa Water District	Lakeside Water District
Carlsbad Municipal Water District	Las Virgenes Municipal Water District
Carpinteria Valley Water District	Long Beach Water Department
Casitas Municipal Water District Retail	Los Angeles Co Waterworks District 21 Kagel Canyon
Casitas Municipal Water District Wholesale	Los Angeles Co Waterworks District 29 – Malibu & Marina del Rey
Castaic Lake Water Agency	Los Angeles County Waterworks District 36 – Val Verde
Chino Hills, City of	Los Angeles County Waterworks District 37 – Acton
Citrus Heights WD	Los Angeles County Waterworks District 40 –
Clear Creek CSD	
Coastside County Water District	
Big Bear Lake, City of	
Burbank, City of	



Antelope Valley	San Antonio Water Company
Los Angeles Dept. of Water and Power	San Benito County Water District
Marin Municipal Water District	San Benito County Water District
Mesa Consolidated Water District	San Buenaventura, City of
Metropolitan Water District of SC	San Clemente, City of
Mid-Peninsula Water District	San Diego County Water Authority
Monte Vista Water District	San Diego, City of
Montecito Water District	San Dieguito Water District
Moulton Niguel Water District	San Francisco PUC - Retail
Mountain View, City of	San Francisco PUC - Wholesale
Municipal Water District of Orange County	San Gabriel Valley Water Company - LA
Napa, City of	San Gabriel Valley Water Company FO
Newport Beach, City of	San Jose Water Company
Nipomo Community Services District	San Jose, City of
North Marin Water District	San Luis Obispo, City of
Oceanside, City of	Santa Barbara County Water Agency
Olivenhain Municipal Water District	Santa Barbara, City of
Ontario Municipal Utilities Company	Santa Clara Valley Water District
Orange County Water District	Santa Clarita Water Division
Orange, City of	Santa Cruz, City of
Orange Vale Water Co.	Santa Fe Irrigation District
Otay Water District	Santa Monica, City of
Oxnard, City of	Santa Rosa, City of
Padre Dam Municipal Water District - Retail	Santa Ynez River WCD - I.D.#1
Palmdale Water District	Shasta Lake, City of
Pasadena, City of	Solano County Water Agency
Paso Robles, City of	Solano/Suisun WA
Petaluma, City of	Sonoma County Water Agency
Placer County Water Agency - Retail	Sonoma, City of
Placer County Water Agency - Wholesale	South Tahoe Public Utility District
Pomona, City of	Stockton East Water District
Poway, City of	Stockton, City of
Rainbow Municipal Water District	Suburban Water Systems
Ramona Municipal Water District	Sweetwater Authority
Rancho California Water District	Sweetwater Springs Water District
Rio Linda / Elverta Community Water District	Three Valleys Municipal Water District
Rohnert Park, City of	Town of Windsor
Roseville, City of	Tracy, City of
Rowland Water District	Triunfo Sanitation District
Sacramento County Water Agency –	Turlock, City of
Arden Park Vista	Vacaville, City of
Sacramento County Water Agency –	Valencia Water Company
Laguna / Vineyard	Vallecitos Water District
Sacramento County Water Agency - Wholesale	Vallejo, City of
Sacramento Suburban Water District	Valley Center Municipal Water District
Sacramento, City of	Valley of the Moon Water District

Ventura County Waterworks Dist. #1  
Ventura County Waterworks District No. 8  
Vista Irrigation District  
West Basin MWD  
West Sacramento, City of

Western MWD of Riverside County - Retail  
Western MWD of Riverside County - Wholesale  
Yreka, City of  
Yucaipa Valley Water District  
Zone 7



## Appendix K

### 2015 UWMP Tables

Table 2-2: Plan Identification			
Select Only One	Type of Plan		Name of RUWMP or Regional Alliance <i>if applicable</i> <i>drop down list</i>
<input checked="" type="checkbox"/>	Individual UWMP		
	<input type="checkbox"/>	Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/>	Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)		
NOTES:			

2015 UWMP Tables – San Antonio Water Company

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

2015 UWMP Tables – San Antonio Water Company

Table 2-4 Wholesale: Water Supplier Information Exchange (select one)	
<input checked="" type="checkbox"/>	Supplier has informed more than 10 other water suppliers of water supplies available in accordance with CWC 10631. Completion of the table below is optional. If not completed include a list of the water suppliers that were informed.
	<b>Provide page number for location of the list.</b>
<input type="checkbox"/>	Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with CWC 10631. <b>Complete the table below.</b>
Water Supplier Name <i>(Add additional rows as needed)</i>	
NOTES: Provided in Section 1.4 of UWMP	

2015 UWMP Tables – San Antonio Water Company

Table 3-1 Wholesale: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040(opt)
	3,396	3,408	3,419	3,431	3,442	
NOTES: Only includes Basic Area						

2015 UWMP Tables – San Antonio Water Company

Table 4-1 Wholesale: Demands for Potable and Raw Water - Actual			
Use Type (Add additional rows as needed)	2015 Actual		
<b>Drop down list</b> <i>May select each use multiple times</i> <i>These are the only use types that will be recognized by the WUE data online submittal tool</i>	Additional Description (as needed)	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Groundwater recharge		Raw Water	903
Losses		Raw Water	234
Retail demand for use by agencies that are primarily wholesalers with a small volume of retail sales	San Antonio Heights (Retail)	Drinking Water	1,115
Other	Municipal/Misc Customers	Raw Water	6,822
<b>TOTAL</b>			9,074
NOTES: Used Production Data provided by Wholesaler			



2015 UWMP Tables – San Antonio Water Company

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

Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>				
		2020	2025	2030	2035	2040 ( opt)
<b>Drop down list</b> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool.</i>						
Groundwater recharge		1,011	1,011	1,011	1,011	
Losses		211	211	211	211	
Retail demand for use by agencies that are primarily wholesalers with a small volume of retail sales	Basic Area	1,174	1,174	1,174	1,174	
Other	Extended Area	6,834	6,834	6,834	6,834	
<b>TOTAL</b>		9,230	9,230	9,230	9,230	0

2015 UWMP Tables – San Antonio Water Company

Table 4-3 Wholesale: Total Water Demands						
	2015	2020	2025	2030	2035	2040(opt)
Potable and Raw Water <i>From Tables 4-1 and 4-2</i>	9,074	9,230	9,230	9,230	9,230	0
Recycled Water Demand* <i>From Table 6-4</i>	0	0	0	0	0	0
<b>TOTAL WATER DEMAND</b>	9,074	9,230	9,230	9,230	9,230	0
<i>*Recycled water demand fields will be blank until Table 6-4 is complete.</i>						
NOTES:						

Table 4-4 Wholesale: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	785
* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.	
NOTES:	

2015 UWMP Tables – San Antonio Water Company

Table 6-1 Wholesale: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	Chino Basin	221	1,092	1,086	1,548	1,144
Alluvial Basin	Cucamonga Basin	6,062	7,630	8,819	6,210	4,428
Alluvial Basin	Six Basins	1,174	1,472	1,163	936	738
Fractured Rock	San Antonio Tunnel	2,399	2,341	921	1,230	697
<b>TOTAL</b>		9,855	12,534	11,989	9,925	7,007
NOTES:						

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

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Wholesale supplier neither distributes nor provides supplemental treatment to recycled water.  
The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level <i>Drop down list</i>	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside Service Area
Add additional rows as needed										
Total							0	0	0	0

NOTES:

**Table 6-4 Wholesale: Current and Projected Retailers Provided Recycled Water Within Service Area**

<input type="checkbox"/>	Recycled water is not directly treated or distributed by the supplier. The supplier will not complete the table below.						
Name of Receiving Supplier or Direct Use by Wholesaler	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035	2040 <i>(opt)</i>
<i>Add additional rows as needed</i>							
<b>Total</b>		0	0	0	0	0	0
NOTES:							

2015 UWMP Tables – San Antonio Water Company

Table 6-5 Wholesale: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual		
<input checked="" type="checkbox"/>	Recycled water was not used or distributed by the supplier in 2010, nor projected for use or distribution in 2015. The wholesale supplier will not complete the table below.	
Name of Receiving Supplier or Direct Use by Wholesaler	2010 Projection for 2015	2015 actual use
<i>Add additional rows as needed</i>		
<b>Total</b>	0	0
NOTES:		

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

<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input checked="" type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
Section 5.9	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down list</i>	Expected Increase in Water Supply to Agency
	<i>Drop Down Menu</i>	<i>If Yes, Agency Name</i>				
<i>Add additional rows as needed</i>						
NOTES: Please read WMP research and review email with data provided						



2015 UWMP Tables – San Antonio Water Company

Table 6-8 Wholesale: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
<b>Drop down list</b> <i>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Actual Volume	Water Quality <i>Drop Down List</i>	Total Right or Safe Yield <i>(optional)</i>
Add additional rows as needed				
Groundwater	Chino Basin	1,144	Drinking Water	
Groundwater	Cucamonga Basin	4,428	Drinking Water	
Groundwater	Six Basins	738	Drinking Water	
Groundwater	San Antonio Tunnel	697	Drinking Water	
Surface water	San Antonio Creek	2,024	Raw Water	
Total		9,031		0
NOTES:				

Table 6-9 Wholesale: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply Report To the Extent Practicable									
		2020		2025		2030		2035		2040 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
<div>Drop down list</div> <div>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</div>											
Add additional rows as needed											
Groundwater	Chino Basin	1,232		1,232		1,232		1,232			
Groundwater	Cucamonga Basin	4,500		4,500		4,500		4,500			
Groundwater	Six Basins	946		946		946		946			
Groundwater	San Antonio Tunnel	949		949		949		949			
Surface water	San Antonio Creek	1,963		1,963		1,963		1,963			
Total		9,590	0	9,590	0	9,590	0	9,590	0	0	0

NOTES:

2015 UWMP Tables – San Antonio Water Company

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

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	1994-2015	14304	100%
Single-Dry Year	2015	13094	92%
Multiple-Dry Years 1st Year	2013	13778	96%
Multiple-Dry Years 2nd Year	2014	11587	81%
Multiple-Dry Years 3rd Year	2015	9074	63%
Multiple-Dry Years 4th Year <i>Optional</i>			
Multiple-Dry Years 5th Year <i>Optional</i>			
Multiple-Dry Years 6th Year <i>Optional</i>			
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES:			

2015 UWMP Tables – San Antonio Water Company

Table 7-2 Wholesale: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals (autofill from Table 6-9)	9,590	9,590	9,590	9,590	0
Demand totals (autofill fm Table 4-3)	9,230	9,230	9,230	9,230	0
Difference	360	360	360	360	0
NOTES:					

2015 UWMP Tables – San Antonio Water Company

Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	9,819	9,819	9,819	9,819	
Demand totals	9,819	9,819	9,819	9,819	
Difference	0	0	0	0	0
NOTES:					

2015 UWMP Tables – San Antonio Water Company

Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	9,819	9,819	9,819	9,819	
	Demand totals	9,819	9,819	9,819	9,819	
	Difference	0	0	0	0	0
Second year	Supply totals	9,819	9,819	9,819	9,819	
	Demand totals	9,819	9,819	9,819	9,819	
	Difference	0	0	0	0	0
Third year	Supply totals	9,819	9,819	9,819	9,819	
	Demand totals	9,819	9,819	9,819	9,819	
	Difference	0	0	0	0	0
Fourth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
NOTES:						

Table 8-1 Wholesale Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Supply Reduction <sup>1</sup>	Water Supply Condition (Narrative description)
Add additional rows as needed		
Year Round		<ol style="list-style-type: none"> <li>1. Washing of sidewalks, driveways and parking lots prohibited.</li> <li>2. Excessive irrigation run-off prohibited.</li> <li>3. Customer has 72 hours to repair leaks or breaks within private plumbing or distribution system following notification by the Water Company.</li> <li>4. Landscape irrigation between 10 AM and 6 PM prohibited.</li> <li>5. Washing of vehicles and equipment must be done with a hand held bucket or hand held hose equipped with a nozzle unless at a commercial carwash.</li> <li>6. Establishments shall not provide drinking water unless requested.</li> </ol>
Moderate Shortage		<p>In addition to all above measures:</p> <ol style="list-style-type: none"> <li>1. Landscape irrigation for locations having an even-numbered address is permitted only on even days of the month and having an odd-numbered address only on odd days of the month.</li> <li>2. Washing of vehicles and equipment must occur at designated areas and only between midnight and noon.</li> <li>3. Only carwashes operating to approved county standards with equipment to recycle water for reuse within the facility are permitted.</li> <li>4. Refilling or adding water to swimming pools is restricted to designated outdoor water use days between 6 PM and 10 AM.</li> <li>5. Use of non-business related ornamental ponds or fountains is prohibited.</li> <li>6. The use of potable water to irrigate golf course fairways is prohibited.</li> <li>7. The use of fire hydrants shall be limited to emergency related activities.</li> </ol>

## 2015 UWMP Tables – San Antonio Water Company

High Shortage	<p>In addition to all above measures:</p> <ol style="list-style-type: none"><li>1. Landscape irrigation shall be limited to two days per week between sundown and 6 AM.</li><li>2. Washing of vehicles is prohibited except when using hose nozzle.</li><li>3. Filling of new swimming pools shall be by permit only.</li><li>4. The use of potable water to irrigate golf course tees areas and fairways are prohibited.</li></ol>
Severe Shortage	<p>In addition to the above measures:</p> <ol style="list-style-type: none"><li>1. Landscape irrigation shall be limited to one day per week between sundown and 6 AM.</li><li>2. Washing of vehicles is prohibited.</li></ol>
<sup>1</sup> One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.	
NOTES:	



2015 UWMP Tables – San Antonio Water Company

Table 8-4 Wholesale: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	9,590	9,590	9,590
NOTES:			

Table 10-1 Wholesale: Notification to Cities and Counties (select one)		
<input checked="" type="checkbox"/>	Supplier has notified more than 10 cities or counties in accordance with CWC 10621 (b) and 10642. <b>Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.</b>	
Section 1.4	Provide the page or location of this list in the UWMP.	
<input type="checkbox"/>	Supplier has notified 10 or fewer cities or counties. <b>Complete the table below.</b>	
City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
NOTES:		



## Appendix L

### San Antonio Canyon/Creek Surface Water Rights

## **San Antonio Canyon/Creek Surface Water Rights**

A definitive discussion of San Antonio Canyon/Creek surface water rights is included in the “Opinion Re Water Rights of San Antonio Water Company” (aka Senecal Report), which was prepared by the law firm of Lagerlof, Senecal, Drescher & Swift and dated June 1993.

The San Antonio Water Company Board of Directors has determined that the Senecal Report is confidential.

Access to the Senecal Report may be granted to qualified petitioners upon completion of a non-disclosure agreement.

Inquiries should be directed to:

San Antonio Water Company  
139 N. Euclid Avenue  
Upland, Ca 91786

Application of the conclusions of the Senecal Report to the management of the San Antonio Water Company’s surface water rights is summarized in §4.4 of the San Antonio Water Company 2010 Urban Water Management Plan, Volume 1 – Report.



## Appendix M

### SAWCo Potable Water Quality Data

San Antonio Water Company  
Potable Water Quality Data

CONTAMINATE (CCR Units)	State MCL	State PHG Fed [MCLG]	SAWCo. Water	Range of detection	Most Recent Sample Yr.	Violation	Typical Source of Contaminate and Pertinent Notations
<u>Microbiological</u>							
(a) Total coliforms (% positive)	5	[0]	<.01	0-2	2009	N	
Fecal coliforms & E. coli (# positive)	1	[0]	0	0	2009	N	Human and animal fecal waste
<u>Radionuclide</u>							
Gross Alpha (pCi/L)	15	[0]	0.24	1-1.2	2009	N	Erosion of some natural minerals
Radon 222 (pCi/L)	NS	NS	ND	ND	2005	N	Decay of radioactive elements (a gas)
Uranium	20	[0]	0.26	0-5.5	2009	N	Radioactive metallic element occurring natural in minerals
<u>Inorganics</u>							
Aluminum (ppb)	200	NS	ND	ND	2006	N	Erosion from natural deposits, surface water treatment process residual
Arsenic (ppb)	50	NS	ND	ND	2006	N	Erosion of natural deposits, runoff from orchards and waste from glass and electronics production.
(d) Asbestos (MFL)	7	[7]	ND	ND	2006	N	Erosion of natural deposits and asbestos cement water mains
Copper (ppm)	1.3	0.17	ND	ND	2006	N	Corrosion of water plumbing, erosion of natural deposits and leaching from wood preservatives
(e) Fluoride (ppm)	2	.42	0.02	.4-.56	2009	N	Erosion of natural deposits, discharge from fertilizer and aluminum factories and a additive for teeth
Lead (ppb)	15	2	ND	ND	2006	N	Corrosion of water plumbing, discharges from industries and erosion of natural deposits
Nitrate [NO3] (ppm) (b)&(f)	45	45	0.47	0.01-1.87	2009	N	Leaching from fertilizer (animal waste), septic tanks and sewage; erosion of natural deposits

San Antonio Water Company  
Potable Water Quality Data

CONTAMINATE (CCR Units)	State MCL	State PHG Fed [MCLG]	SAWCo. Water	Range of detection	Most Recent Sample Yr.	Violation	Typical Source of Contaminate and Pertinent Notations
<u>Synthetic Organics (incl. Pesticides &amp; Herbicides)</u>							
(b) Dibromochloropropane (ppm) DBCP	2	1.7	0.1	0-0.1	2007	N	Leaching of Nematocide used in soils (banned) in groves, vineyards and crop fields
<u>Additional Parameters Tested</u>							
Bicarbonate	NS	NS	60.45	180-250	2009	N	Leaching from naturally-occurring materials
Calcium (ppm)	NS	NS	12.00	41-66	2009	N	Leaching from naturally-occurring materials
Chloride (ppb)	500	NS	0.71	2.3-5.3	2009	N	Leaching from natural deposits and seawater influence
Hardness [CaCO3] (ppm)	NS	NS	44.91	0.12- 141.7	2009	N	Bonding of naturally-occurring calcium and carbonate ions is solution
Magnesium (ppm)	NS	NS	3.15	9.9-13	2009	N	Leaching from naturally-occurring materials
Order-threshold (Units)	3	NS	0.25	1-1	2009	N	Naturally-occurring organic materials
pH (Units)	NS	NS	1.97	7.8-7.9	2009	N	Naturally-occurring leachate blend from acid and base materials
Potassium (ppm)	NS	NS	.55	2.1-2.4	2009	N	Leaching from naturally-occurring materials
Sodium (ppm)	NS	NS	2.27	8.4-13	2009	N	Leaching from naturally-occurring materials
Specific Conductance (micro-ohms)	1,500	NS	294.97	330-520	2007	N	Substances that form ions when in water and seawater influence
Sulfate (ppm)	500	NS	24.55	24-29	2007	N	Leaching from natural deposits and industrial wastes
Total Dissolved Solids (ppm)	1,000	NS	58.99	230-340	2009	N	Leaching from natural deposits
Turbidity [groundwater] (T.U.)	TT	NS	0.00	0-0	2009	N	Soil runoff. This is a good indicator of water quality and the probable effectiveness of disinfectants

San Antonio Water Company  
Potable Water Quality Data

CONTAMINATE (CCR Units)	State MCL	State PHG Fed [MCLG]	SAWCo. Water	Range of detection	Most Recent Sample Yr.	Violation	Typical Source of Contaminate and Pertinent Notations
Corrosivity (Langlier Index @ 60 degree C)	N/A	NS	0.69	.57-1.21	2008	N	A positive number indicates the water to be non-corrosive.
TTHM (ppm)	.080	NS	0.01	0.000- 0.01	2006	N	Stage I disinfection by-product sampling. By products are formed when disinfectants used in water react with natural organic matter present in source water, forming these groups of chemicals that may be harmful to human health. Extensive research is underway to better understand potential risk to exposure.
HAA5 (ppm)	.060	NS	ND	ND	2006	N	Stage I disinfection by-product sampling. By products are formed when disinfectants used in water react with natural organic matter present in source water, forming these groups of chemicals that may be harmful to human health. Extensive research is underway to better understand potential risk to exposure.
Perchlorate	6	NS	ND	ND	2008	N	





## Appendix N

### 60-Day Notifications



March 2, 2016

San Bernardino County  
385 N. Arrowhead Avenue  
San Bernardino, CA 92415-0120

Attention: Greg Devereaux, Chief Executive Officer

Subject: Notification of the Preparation of a 2015 Urban Water Management Plan for the  
San Antonio Water Company

Dear Mr. Devereaux:

The San Antonio Water Company (SAWCo), pursuant to §10621(b) of the California Water Code, is hereby providing notification to the San Bernardino County of the preparation of the 2015 Urban Water Management Plan (UWMP) in compliance with the Urban Water Management Planning Act.

This notification is intended to inform the San Bernardino County of the opportunity to consult with, and submit comments for consideration by, SAWCo regarding the UWMP during the review process.

The UWMP is being prepared by Civiltec Engineering. For more information, you can contact Greg Ripperger at (626) 357-0588 or [gripperger@civiltec.com](mailto:gripperger@civiltec.com)

Sincerely,

Charles Moorrees  
General Manager



March 2, 2016

Monte Vista Water District  
10575 Central Avenue  
Montclair, CA 91763

Attention: Mark Kinsey, General Manager

Subject: Notification of the Preparation of a 2015 Urban Water Management Plan for the  
San Antonio Water Company

Dear Mr. Kinsey:

The San Antonio Water Company (SAWCo), pursuant to §10621(b) of the California Water Code, is hereby providing notification to the Monte Vista Water District of the preparation of the 2015 Urban Water Management Plan (UWMP) in compliance with the Urban Water Management Planning Act.

This notification is intended to inform the Monte Vista Water District of the opportunity to consult with, and submit comments for consideration by, SAWCo regarding the UWMP during the review process.

The UWMP is being prepared by Civiltec Engineering. For more information, you can contact Greg Ripperger at (626) 357-0588 or [gripperger@civiltec.com](mailto:gripperger@civiltec.com)

Sincerely,

Charles Moorrees  
General Manager



March 2, 2016

City of Upland  
460 N. Euclid Avenue  
Upland CA 91786

Attention: City Planning Department

Subject: Notification of the Preparation of a 2015 Urban Water Management Plan for the  
San Antonio Water Company

Whom It May Concern:

The San Antonio Water Company (SAWCo), pursuant to §10621(b) of the California Water Code, is hereby providing notification to the City of Upland of the preparation of the 2015 Urban Water Management Plan (UWMP) in compliance with the Urban Water Management Planning Act.

This notification is intended to inform the City of Upland of the opportunity to consult with, and submit comments for consideration by, SAWCo regarding the UWMP during the review process.

The UWMP is being prepared by Civiltec Engineering. For more information, you can contact Greg Ripperger at (626) 357-0588 or [gripperger@civiltec.com](mailto:gripperger@civiltec.com)

Sincerely,

Charles Moorrees  
General Manager



March 2, 2016

Cucamonga Valley Water District  
10440 Ashford St.  
Rancho Cucamonga, CA 91730-2799

Attention: Martin E. Zvirbulis, General Manager

Subject: Notification of the Preparation of a 2015 Urban Water Management Plan for the  
San Antonio Water Company

Dear Mr. Zvirbulis:

The San Antonio Water Company (SAWCo), pursuant to §10621(b) of the California Water Code, is hereby providing notification to the Cucamonga Valley Water District of the preparation of the 2015 Urban Water Management Plan (UWMP) in compliance with the Urban Water Management Planning Act.

This notification is intended to inform the Cucamonga Valley Water District of the opportunity to consult with, and submit comments for consideration by, SAWCo regarding the UWMP during the review process.

The UWMP is being prepared by Civiltec Engineering. For more information, you can contact Greg Ripperger at (626) 357-0588 or [gripperger@civiltec.com](mailto:gripperger@civiltec.com)

Sincerely,

Charles Moorrees  
General Manager



March 2, 2016

City of Ontario  
303 East B Street  
Ontario, CA 91764

Attention: Steve Wilson, Environmental Water/Wastewater Engineer

Subject: Notification of the Preparation of a 2015 Urban Water Management Plan for the  
San Antonio Water Company

Dear Mr. Wilson:

The San Antonio Water Company (SAWCo), pursuant to §10621(b) of the California Water Code, is hereby providing notification to the City of Ontario of the preparation of the 2015 Urban Water Management Plan (UWMP) in compliance with the Urban Water Management Planning Act.

This notification is intended to inform the City of Ontario of the opportunity to consult with, and submit comments for consideration by, SAWCo regarding the UWMP during the review process.

The UWMP is being prepared by Civiltec Engineering. For more information, you can contact Greg Ripperger at (626) 357-0588 or [gripperger@civiltec.com](mailto:gripperger@civiltec.com)

Sincerely,

Charles Moorrees  
General Manager



March 2, 2016

Three Valleys Municipal Water District  
1021 E. Miramar Avenue  
Claremont, CA 91711-2052

Attention: Richard W. Hansen, General Manager

Subject: Notification of the Preparation of a 2015 Urban Water Management Plan for the  
San Antonio Water Company

Dear Mr. Hansen:

The San Antonio Water Company (SAWCo), pursuant to §10621(b) of the California Water Code, is hereby providing notification to the Three Valleys Municipal Water District of the preparation of the 2015 Urban Water Management Plan (UWMP) in compliance with the Urban Water Management Planning Act.

This notification is intended to inform the Three Valleys Municipal Water District of the opportunity to consult with, and submit comments for consideration by, SAWCo regarding the UWMP during the review process.

The UWMP is being prepared by Civiltec Engineering. For more information, you can contact Greg Ripperger at (626) 357-0588 or [gripperger@civiltec.com](mailto:gripperger@civiltec.com)

Sincerely,

Charles Moorrees  
General Manager



March 2, 2016

Inland Empire Utilities Agency  
6075 Kimball Avenue  
Chino, CA 91710

Attention: Joe Grindstaff, General Manager

Subject: Notification of the Preparation of a 2015 Urban Water Management Plan for the  
San Antonio Water Company

Dear Mr. Grindstaff:

The San Antonio Water Company (SAWCo), pursuant to §10621(b) of the California Water Code, is hereby providing notification to the Inland Empire Utilities Agency of the preparation of the 2015 Urban Water Management Plan (UWMP) in compliance with the Urban Water Management Planning Act.

This notification is intended to inform the Inland Empire Utilities Agency of the opportunity to consult with, and submit comments for consideration by, SAWCo regarding the UWMP during the review process.

The UWMP is being prepared by Civiltec Engineering. For more information, you can contact Greg Ripperger at (626) 357-0588 or [gripperger@civiltec.com](mailto:gripperger@civiltec.com)

Sincerely,

Charles Moorrees  
General Manager





## Appendix O

### Public Notification Documents

## **NOTICE OF PUBLIC HEARING**

**Notice is hereby given** of a public hearing to be held before the San Antonio Water Company on June 21, 2016 at 5:00 PM, at the Upland City Hall Council Chambers, located at 460 N. Euclid Avenue, Upland, on the following matter:

### **Adoption of the San Antonio Water Company's 2015 Urban Water Management Plan**

A copy of the draft Urban Water Management Plan is available for public review in the office of San Antonio Water Company during regular business hours and online at [\[link to City website\]](#). Any person interested in the above proceedings may appear at the time and place indicated to testify in support of, or in opposition to, the item. Written comments will be accepted and should be received no later than June 17, 2016, and be addressed to the individual noted below. If you desire additional information or have any questions, please feel free to contact the San Antonio Water Company at 909-982-4107.

Charles Moorrees  
General Manager  
139 N. Euclid Avenue  
Upland, CA 91768

DATED this 7 day  
Of June, 2016

**SAN ANTONIO WATER COMPANY**  
**MINUTES OF THE SAN ANTONIO WATER COMPANY**  
**Tuesday, June 21, 2016**

An open meeting of the Board of Directors of the San Antonio Water Company (SAWCo) was called to order at 5:02 p.m. on the above date at the Upland City Hall Council Chambers, 460 North Euclid Avenue, Upland, California. Directors present were Tom Thomas, Will Elliott, Glenn Bozar, Sue Sundell, and John Gerardi. Also in attendance were Pierce Rossun with Carollo Engineers, C. Shem Hawes with Civiltec Engineering, Inc., SAWCo's General Manager Charles Moorrees, Assistant General Manager Teri Layton, and Administrative Specialist Kelly Mitchell. Director Thomas presided.

- Salute to the Flag
- 1. Recognitions and Presentations: Mr. Moorrees congratulated Ms. Layton on her promotion to Assistant General Manager. He then introduced Mr. Hawes with Civiltec Engineering, Inc. and Pierce Rossun with Carollo Engineers who will both be presenting later in the meeting. Mr. Moorrees also reminded the Board about the 12<sup>th</sup> Annual Watershed Clean-up Day taking place Saturday, July 9<sup>th</sup>.
- 2. Additions-Deletions to the Agenda: None.
- 3. Shareholder-Public Testimony: None.
- 4. Consent Calendar Items:
  - A. Approval of Board Meeting Minutes  
Regular Meeting Minutes May 17, 2016.
  - B. Planning, Resources, and Operations Committee (PROC) Meeting Minutes  
No meeting minutes to report.
  - C. Administrative and Finance Committee (AFC) Meeting Minutes  
AFC Meeting minutes of April 26, 2016.
  - D. Ad Hoc Committee Office/Yard Relocation Meeting Minutes  
Approval of Ad Hoc Meeting Minutes of April 13, 2016.
  - E. Financial Statement  
Comparative Income Statement and Balance Sheet for April 30, 2016 and year-to-date.
  - F. Investment Activity Report  
Monthly Report of Investments Activity
  - G. Water Production  
Bi-Monthly water production [Jan/Feb, Mar/Apr, May/June, July/Aug, Sept/Oct, Nov/Dec]
  - H. Prominent Issues Update  
Status summaries on certain on-going active issues.
  - I. Projects and Operations Update  
Status summaries on projects and operations matters.
  - J. Groundwater Level patterns [Quarterly in April, July, October & January]  
Tracking patterns of groundwater elevations relative to ground surface.
  - K. Correspondence of Interest – None.
    - Letter of appreciation from Citizens Patrol for contribution

Director Elliott moved and Director Gerardi seconded to approve the consent calendar as presented. Motion carried.

- 5. Board Committee – Delegate Report:
  - A. **Pomona Valley Protective Association (PVPA) Representative's Report** – Director Thomas reported on the most recent meeting. Debris in the retention basins on the Claremont side is being cleaned out by a construction company to improve percolation. The City of Pomona is continuing to weed abate.

The manual for the maintenance of the spreading grounds that was ordered by West End Consolidated on behalf of PVPA to manage the San Antonio Spreading Grounds as part of Six Basins is being distributed.

- B. Six Basins Representative Report** – Mr. Moorrees reported on a Special Six Basins Watermaster Meeting held on June 8, 2016 to discuss the Strategic Plan implementation and Proposition 1 Grant Fund opportunities.

Proposed projects and objectives were also discussed. Watermaster staff proposed applying for a Planning Grant pre-application for between \$40,000 and \$50,000. Although watermaster will prepare the application, institutional arrangements require a water agency to submit the application for the Grant. Three Valleys Water District (TVMWD) volunteered to make the application on behalf of the parties with a Memorandum of Understanding (MOU) for the party participation. The choice for the grant applications will be based on groundwater sustainability.

An Advisory Committee meeting has been scheduled for the following day to review the draft recommendation for sustainability injury analysis for TVMWD proposed Well 3. The draft application for the Proposition 1 funds will also be discussed.

- C. Chino Basin Representative Report** – Ms. Layton reported on the Chino Basin Watermaster 2015 Safe Yield Reset Agreement (SYRA). The Judge continued the scheduled hearing from June 10, 2016 to June 24, 2016 at 1:30 p.m. The attorney for the Agriculture Committee will be out of the country on June 24<sup>th</sup> and has asked to court to continue the hearing until July 29<sup>th</sup>. The court granted the July 29<sup>th</sup> date due to a family emergency for Judge Reichert. Jurupa Community Service District (JCSD) has now filed a continuance until either August 5<sup>th</sup> or August 12<sup>th</sup> due to the General Manager returning from leave and being a key witness. The court has not yet responded to this request.

Due to the SYRA not being approved and currently being challenged in court, the Watermaster did not issue an assessment package last year and instead assessed an interim fee equal to 50% of the previous year's charges. The City of Chino wants the desalter obligation to be included in the assessment and is therefore voting against the assessment package. The Pools and Advisory committees have approved the assessment package with City of Chino opposing. If the Board approves the assessment package at the next Board meeting, invoices will be mailed and payment will be due by July 25, 2016. Another assessment will be due in November which will put them back on schedule.

The Special Budget Committee continues to work on getting better control over the budget. The next meeting is scheduled for June 30<sup>th</sup> at 10 a.m. An Engineering Committee may be formed to keep engineering costs in line.

- D. Administration and Finance Committee (AFC) Chairman's Report** – Ms. Sundell reported that staff development was discussed.

Mr. Moorrees added the rescheduling of June's regular AFC meeting to the beginning of the month to discuss the Water Rates and Fees Study which is presented to the Board on Item 7E on the agenda.

- E. Planning, Resources, & Operations Committee (PROC) Chairman's Report** – Mr. Elliott advised that all items discussed at the PROC are under the General Manager's Report on Activities.

- F. Office Feasibility Study Ad Hoc Committee** – Ms. Layton reported a kick off meeting with Claremont Environmental Design Group (CEDG) was held on June 15<sup>th</sup>. CEDG was awarded the task of the Needs Assessment. Interviews with office and field staff are scheduled for Friday, June

24<sup>th</sup>. Staff is expecting a questionnaire to distribute and prepare staff for the interview. The next Ad Hoc meeting will depend on deliverables from CEDG.

6. Open Public Hearing on Urban Water Management Plan:

Mr. Moorrees advised a copy of the "Draft" Urban Water Management Plan (UWMP) was included in the Board Meeting packet. He introduced Mr. Hawes with Civiltec Engineering, Inc. to provide a brief presentation on the "Draft" UWMP.

Director Thomas questioned whether this item is a public hearing. Mr. Moorrees advised that it is and notice was posted in the local newspaper twice.

Mr. Hawes gave a summary of the "Draft" UWMP which is a planning document for water supply and delivery required by the State of California. The submittal deadline for the UWMP is July 1, 2016.

Director Thomas opened the item up for public questions. Seeing none the item went up for Board adoption.

7. General Manager's Report on Activities:

**A. Adopt Resolution No. 2016-06-01 for 2016 Urban Water Management Plan (UWMP) –**

Director Elliott moved and Director Gerardi seconded to approve the adoption of Resolution No. 2016-06-01 for the UWMP. Motion carried.

**B. Edison Pond Expansion Study –** Mr. Moorrees stated the final study by Cannon Engineering for the Edison Pond Expansion Study was submitted to the PROC on May 17<sup>th</sup> with recommendation for the Board to receive and file the report.

Director Gerardi moved and Director Bozar seconded to receive and file the final report on the Edison Pond Expansion Study by Cannon Engineering. Motion carried.

**C. Tunnel Water Delivery Disposition –** Mr. Moorrees advised that staff met with the State Department of Drinking Water (DDW) on April 29<sup>th</sup>. Directions provided by DDW requires staff to take daily bac-t samples from the Tunnel for a period of two weeks. Staff began taking daily bac-t samples beginning Monday, May 3<sup>rd</sup> with the final sample taken on May 13<sup>th</sup>. Out of all the samples taken, only one came back absent of bacteria. Staff submitted the final results and the final Technical Memorandum from Aquality Engineering to the State. After review of the final round of water quality sampling, DDW requires SAWCo achieve a 4-Log removal by disinfection by providing a minimum of 3 hour contact time prior to delivery into the domestic system. This needs to be achieved in order for DDW to allow the Tunnel to be placed back into the domestic system

In earlier calculations, the consulting hydraulic engineer estimated the travel time from Shaft 6 to the Forebay to be at 3 hours. Moving the existing disinfection system from the Forebay to Shaft 6 with a mixing system of injection into the Tunnel pipeline with a post disinfection system at the Forebay should meet the DDW criteria.

Mr. Moorrees requested the \$400,000 originally budgeted for UV Treatment at the Tunnel be re-appropriated to allow for constructing housing for and relocating of the Hypochlorite Generation System (MIOX) system to Shaft 6. He is currently in the process of obtaining bids for the work.

Thus far staff has obtained information on the cost to construct housing for the MIOX system which should total \$75,000. SAWCo's electrical contractor, KSM Electric, has given an estimate of \$45,000 for the electrical work needed on the project. Mr. Moorrees believes \$200,000 is needed to complete the project.

Staff obtained a proposal from BESST, Inc. in the amount of \$16,075 to complete a tracer study to make the final determination on the amount of contact time from Shaft 6 to the Forebay. This data will then be submitted to the DDW for review and approval. Work on moving the MIOX system will take place after approval of the tracer study findings from DDW.

Mr. Moorrees recommended the Board 1) re-appropriate \$200,000 of the budgeted \$400,000 from Depreciation and Obsolescence (D&O) Reserves in CY2016 for the Forebay UV System to the project to construct housing for the relocated Hypochlorite Generation System (MIOX) and 2) approve staff to engage with required contractors, sub-contractors, and vendors to expedite the construction and relocation project as appropriate.

There was some confusion on the Board as to where the funds for the project were coming from. Mr. Moorrees clarified that \$400,000 is budgeted for CY2016 to purchase UV Treatment for the Tunnel. The determination from DDW in regards to SAWCo's Tunnel allows SAWCo to utilize their MIOX system to treat the tunnel water instead of using UV Treatment. The \$200,000 requested for moving and housing the MIOX system to treat the Tunnel water is being taken out of the \$400,000 already appropriated for Tunnel UV treatment.

Mr. Moorrees reiterated Tunnel water is SAWCo's cheapest water source at just over \$3/acre foot (AF). Other water sources such as Well 32 and booster, and Wells 15, 16, and 18 cost SAWCo \$162/AF and \$148/AF respectively.

Director Bozar moved and Director Elliott seconded to approve the General Manager's recommendation to re-appropriate \$200,000 of the \$400,000 originally budgeted from the D&O Reserves in CY2016 for the Forebay UV System to the project to construct housing for the MIOX system and approve staff to engage with required contractors, sub-contractors, and vendors to expedite the construction and relocation project as appropriate. Motion carried.

- D. 22<sup>nd</sup> Street Irrigation Booster Line** – Mr. Moorrees advised the Board that the City of Upland awarded a project to C.P. Construction for the replacement of a waterline on 22<sup>nd</sup> Street in Upland, California. Once the project is completed the City of Upland will have 22<sup>nd</sup> Street fully repaved with a 5 year moratorium on any street cuts.

SAWCo has been working with the City of Upland regarding concern of the Company's existing 14" 10 gauge irrigation line in the street. Staff determined this waterline has exceeded its asset life and recommends replacing it with the City of Upland's project providing a potential savings of \$160,000 for the cost of paving.

Originally staff requested 14 inch pvc pipe for the waterline, however, 12 inch ductile iron pipe will provide the flow SAWCo needs. The bid from C.P. Construction for the project came in at \$399,550.

Mr. Moorrees recommended the Board approve the project to replace the Company's 14" irrigation pipeline, appropriate \$440,000 from D&O Reserves, approve staff to negotiate cost for and contract to replace the Company's 14" waterline with approximately 3,650 linear feet of 12" ductile iron pipe.

Director Gerardi moved and Director Sundell seconded to approve the General Manager's recommendation. Motion carried.

- E. Proposals for Water Rate And Fee Study** – Mr. Moorrees reported that on March 18<sup>th</sup> staff submitted letters to Carollo Engineers, Raftelis Financial Consultants (RFC), and Black & Veatch requesting proposals to develop the Water Company's rate structure. These proposals were presented to the AFC on June 7<sup>th</sup> for comment and recommendation.

The AFC recommended the Board award the contract to Carollo Engineers and staff to negotiate the price. Carollo Engineers reduced their price from \$78,393 to \$72,924.

Director Gerardi inquired as to why there was such a variance in costs between the three proposals received. Mr. Moorrees replied that one consultant didn't understand how SAWCo operates and provided a 'cookie cutter' approach to the study. Another consultant only partially understood SAWCo's operations. These two approaches were less costly but did not provide the product SAWCo needed to prepare various scenarios.

Pierce Rossun with Carollo Engineers provided a presentation about the company and what services they are going to provide SAWCo in the Water Rates and Fee Study. The purpose of the study is to be able to adequately fund operations and capital in an equitable manner while minimizing the rate impact. This will be achieved by reviewing existing tiered rates, looking at industry trends, potential alternatives to the existing rate structure and making certain it is as equitable as possible to all shareholders. To achieve financial resilience they will try to understand shareholders who use all of their entitlement, not all of it, or more. Cost of service starts with revenue requirement analysis to determine what the costs are over the short and long term. Functional cost analysis will define equity determining who is using the water, how costs are incurred and whether they are variable or fixed costs. Rate design will be analyzed to figure out what is the best, fixed versus variable split.

Some of the challenges will be monthly entitlement distribution (shareholder mechanisms add complexity), understanding how shares are being utilized, reviewing the leasing of unused entitlements, and determining if the same benefits are being received from unused entitlement.

SAWCo is unique in terms of having a retail and wholesale system as well as having shareholders. No one rate structure will meet all the objectives equally. All aspects will be looked at such as possible rate structures, assessments, readiness to serve charges, water availability charges, and the possibility of having certain rates tie to the source of supply. Can different rates be charged for where the sources of water are coming from?

Carollo Engineers has served over 300 clients in the state of California recognized industry experts on rates and rate setting.

Director Gerardi questioned whether readiness to serve charges for inactive shareholders would be looked into and whether credit would be issued for shareholders that do not use all of their entitlement during a billing cycle. Mr. Rossun replied that these are being looked into as well as a multitude of other possibilities. Whether or not SAWCo has the technological capability to do these things will further aid in deciding what items to implement.

Mr. Moorrees recommended the Board approve Carollo Engineers to prepare the Company's Water Rate and Fee Study and appropriate funds from Operations as appropriate.

Director Bozar moved and Director Gerardi seconded to approve Carollo Engineers to prepare SAWCo's Water Rate and Fee Study in the amount of \$72,924 for Operations. Motion carried.

- F. Workers Compensation Insurance** – Mr. Moorrees advised the annual renewal for Workers' Compensation Insurance is due by July 1, 2016. SAWCo received a proposal from State Compensation Insurance as well from JPRIMA using Zenith. State Compensation Insurance's annual premium is less than JPRIMA's Zenith annual premium.

Mr. Moorrees recommended the Board approve renewing Workers' Compensation Insurance through State Compensation Insurance Fund at an annual premium of \$20,277.

Director Thomas moved and Director Elliott seconded to approve the General Manager's recommendation. Motion carried.

**G. Project Status Report –**

- **WFA Pipeline Connection** - Management met with DDW and WFA staff regarding the Bin classification. DDW made an error in their recommendation that SAWCo take bi-monthly samples

for one year for cryptosporidium and giardia. They failed to require SAWCo take bacteriological samples during the time period as well. DDW approved SAWCo making the connection to WFA with the agreement that LT2 samples taken by the City of Upland from the previous year and the current year could be submitted. SAWCo can deliver water from Well 31 to WFA through this connection as well, however, it has high nitrates and dbcp's. SAWCo has been working with Evoqua who has biological treatment equipment on using Well 31 as a possible pilot site. This would require the City of Upland and Cucamonga Valley Water District (CVWD) to participate in the pilot program. The state advised they would not approve CVWD having a pilot plant at one facility they would need it at all facilities. This has caused CVWD to back out of the arrangement. The City of Upland has also backed out of requesting Proposition 1 funding for this pilot program. If MVWD and City of Ontario will participate in the pilot program SAWCo can proceed in delivering water from Well 31 to the WFA and make the pre-application to Proposition 1 funding.

- **Water Master Plan** – The planning criteria, stakeholder requirements, and hydraulic modeling will be developed over the next three months.
- **Basin 6 Desilting** – The initial study is being finished. It will be up for 60 days for the comment period. The City of Upland had no comments on the initial study.
- **Cucamonga Basin – Desilting Project at Crosswalls** – A letter of approval for the Holliday Rock haul route was received from the City of Upland's Planning Administrative Committee. The application to Army Corps of Engineers for a nationwide permit is needed. The office of Diane Feinstein responded that they cannot control the expedition of this project but they can encourage the regulators to move forward on it. Army Corps of Engineers will need 60 days to process the application for the permit. SAWCo is moving forward with amending the environmental portion of the adopted mitigated negative declaration to accommodate the alternative haul route on 22<sup>nd</sup> Street. It has been submitted to the City of Upland for review who is requiring notifying residents within 1,000 feet.

Director Thomas felt SAWCo needed to go out to bid on this project for the clearing of the rock and silt from the site and repairing the walls. Mr. Moorrees stated that once approval is received to move forward he could consider bids and present it to the PROC and then to the Board of Directors. Director Gerardi echoed Director Thomas' statement.

7. Closed Session: The Board of Directors and Mr. Moorrees exited the meeting and entered into closed session to carry out the General Manager's Performance Review at 6:04 p.m. [subdivision 9b) of Section 54957, CGC]

Mr. Moorrees returned to the meeting from closed session at 6:38 p.m.

The Board of Directors returned from closed session to the meeting at 6:51 p.m. Director Thomas advised the performance review for the General Manager was complete. No direct information on the cost of living was available during the closed session therefore the Board deferred to the AFC to look at cost of living and make any recommendations to the Board at that time.

8. Director's Comments and Future Agenda Items: None.

Adjournment: Seeing no further business the meeting was adjourned at 6:52 p.m.

Future Meetings:

- The next Board Meeting will be held on Tuesday, July 19, 2016 at 5:00 p.m.

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Assistant Secretary  
Charles Moorrees





## Appendix P

Resolution No. 2016-06-01 of Adoption

RESOLUTION No. 2016 – 06 - 01  
A RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
SAN ANTONIO WATER COMPANY ADOPTING THE 2015 URBAN WATER  
MANAGEMENT PLAN

WHEREAS, the California Legislature enacted Assembly bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objectives of which are to verify the adequacy and reliability of existing and planned sources of water supply and to plan for the conservation and efficient use of water; and

WHEREAS, the San Antonio Water Company (Water Company) supplies domestic and irrigation shareholders;

WHEREAS, the Water Company provides 10% of its supply to domestic shareholders in the San Antonio Heights; 7% to shareholders outside of San Antonio Heights for irrigation, agricultural and industrial purposes; and 80% to Municipal water districts at wholesale. Inactive shareholders represent approximately 3%;

WHEREAS, the 2015 Urban Water Management Plan (UWMP) identifies the Water Company as a wholesaler; and

WHEREAS, the Board recognizes that this document is a useful planning document that will be periodically reviewed at least once every five years in conjunction with the update of the Water Master Plan and shall make amendments or changes to its plan indicated by the review; and

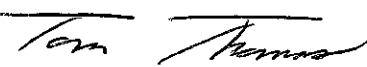
WHEREAS, the plan must be adopted after public review and hearing, and filed with the California State Library and the California Department of Water Resources within thirty days of adoption; and

WHEREAS, the Water Company has therefore, prepared and circulated for public review a draft of the UWMP, and a properly noticed public hearing regarding said Plan was held by the Board of Directors of the Water Company on June 21, 2016.

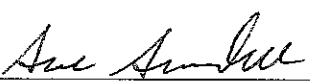
WHEREAS, the Water Company did prepare and shall file said Plan with the California State Library and the California Department of Water Resources; and

NOW THEREFORE, BE IT RESOLVED by the Board of Directors of the San Antonio Water Company that the 2015 Urban Water management Plan is hereby adopted and the General Manager is hereby authorized and directed to file the 2015 Urban Water Management Plan with the California State Library and the California Department of Water Resources within 30 days of this date.

This Resolution was passed and adopted on the 21st day of June, 2016.

  
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Tom Thomas, President  
San Antonio Water Company

Attest:

  
\_\_\_\_\_  
Sue Sundell, Secretary  
San Antonio Water Company



Prepared By:

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