2015 URBAN WATER MANAGEMENT PLAN

CITY OF SAN FERNANDO



June 2016
Final Copy

2015

URBAN WATER MANAGEMENT PLAN

THE CITY OF SAN FERNANDO

City of San Fernando

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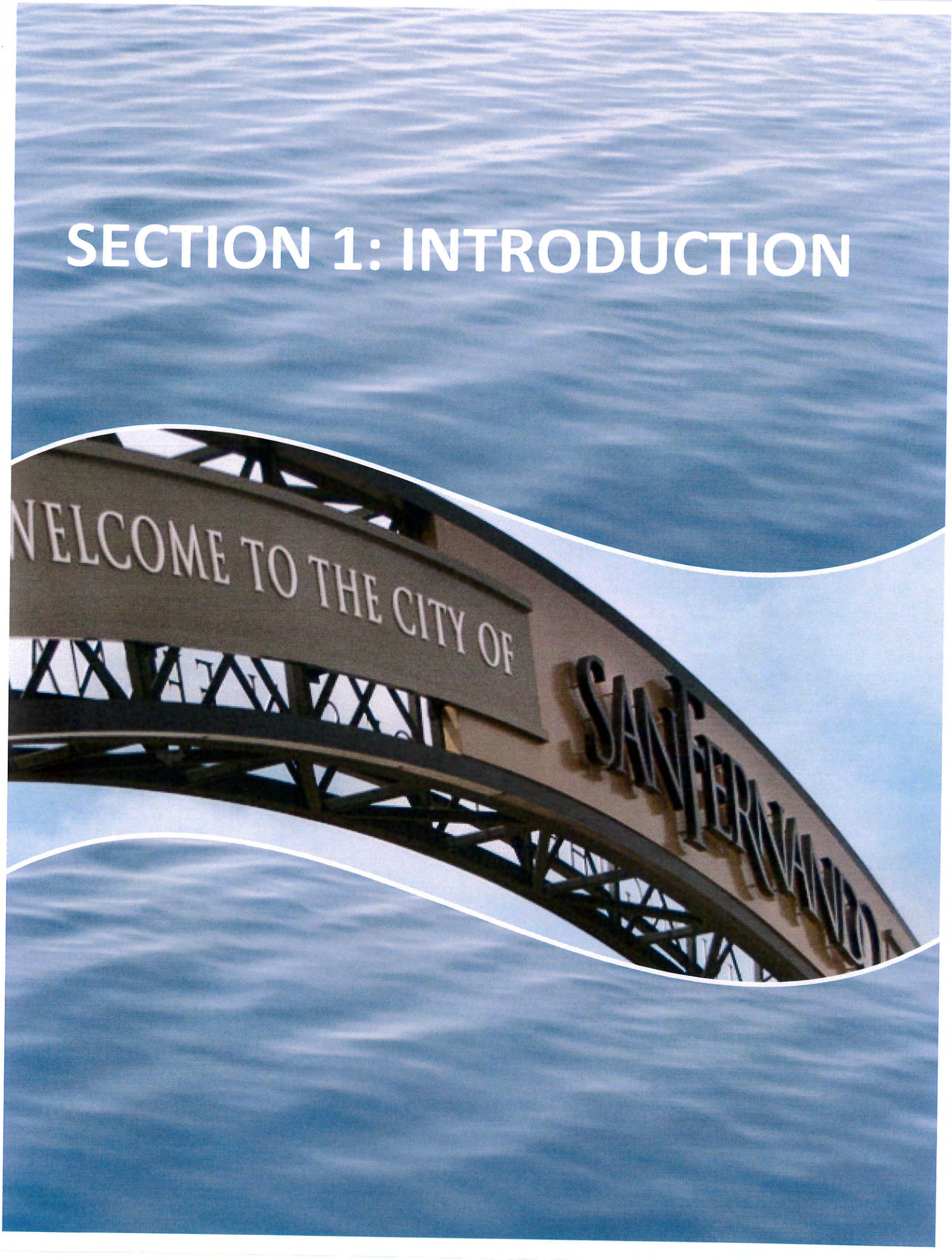
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ACRONYMS

Act	Urban Water Management Planning Act
AF	acre-feet
AFY	acre-feet per year
Basin	Sylmar Groundwater Basin
BMP	Best Management Practice
cfs	cubic feet per second
CII	Commercial Industrial Institutional
CIMIS	California Irrigation Management Information System
City	City of San Fernando
CRA	Colorado River Aqueduct
CUWCC	California Urban Water Conservation Council
DBPs	Disinfection Byproducts
DDW	State Water Resources Control Board Division of Drinking Water
DMM	Demand Management Measure
DOF	California Department of Finance
DWR	Department of Water Resources
eARDWP	electronic Annual Report to the Drinking Water Program
EPA	United States Environmental Protection Agency
ETo	Evapotranspiration
GPCD	Gallons per capita per day
gpd	gallons per day
gpm	gallons per minute
hcf	hundred cubic feet
HECW	High Efficiency Clothes Washer
HR	Hydraulic Region
IRP	Integrated Resources Plan
LADWP	City of Los Angeles Department of Water and Power
MAF	Million Acre-Feet
MCL	Maximum Contaminant Level
MGD	Million Gallons per Day
mg/L	milligrams per liter
µg/L	micrograms per liter
MARS	Member Agency Response System
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MWD	Metropolitan Water District of Southern California

NDMA	N-nitrosodimethylamine
NOAA	National Oceanic and Atmospheric Administration
PCE	Perchloroethylene
PHET	Premium High-Efficiency Toilet
PPCPs	Pharmaceuticals and Personal Care Products
SBx7-7	Senate Bill x7-7: The Water Conservation Act of 2009
SMSS	Soil Moisture Sensor System
SWP	State Water Project
TCE	Trichloroethylene
TDS	Total Dissolved Solid
ULARA	Upper Los Angeles River Area
UWMP	Urban Water Management Plan
VOCs	Volatile Organic Compounds
WARN	Water Agencies Response Network
WBIC	Weather-Based Irrigation Controller
WSAP	Water Supply Allocation Plan
WSDM	Water Surplus and Drought Management Plan

SECTION 1: INTRODUCTION



SECTION 1: INTRODUCTION

1.1 PURPOSE AND SUMMARY

This is the 2015 Urban Water Management Plan (UWMP) for the City of San Fernando (City). This plan has been prepared in compliance with the Urban Water Management Planning Act (Act), which has been codified at California Water Code sections 10610 through 10657 and can be found in **Appendix A** to this 2015 Plan.

As part of the Act, the legislature declared that waters of the state are a limited and renewable resource subject to ever increasing demands; that the conservation and efficient use of urban water supplies are of statewide concern; that successful implementation of plans is best accomplished at the local level; that conservation and efficient use of water shall be actively pursued to protect both the people of the state and their water resources; that conservation and efficient use of urban water supplies shall be a guiding criterion in public decisions; and that urban water suppliers shall be required to develop water management plans to achieve conservation and efficient use.

The Act requires "every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually, to prepare and adopt, in accordance with prescribed requirements, an urban water management plan." These plans must be filed with the California Department of Water Resources (DWR) every five years describing and evaluating reasonable and practical efficient water uses, reclamation, and conservation activities. (*See generally* Wat. Code § 10631).

The Act has been amended on several occasions since its initial passage in 1983. New requirements of the Act due to SBx7-7 state that per capita water use within an urban water supplier's service area must decrease by 20 percent by the year 2020 in order to receive grants or loans administered by DWR or other state agencies. The legislation sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. The state shall make incremental progress towards this goal by reducing per capita water use by at least 10 percent by December 31, 2015. Each urban retail water supplier shall develop water use targets by July 1, 2016. Effective beginning of 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for state water grants or loans.

As part of the City's past and current sustainability goals, the City is currently implementing all facets of this plan to achieve its target conservation by 2020.

1.2 COORDINATION

In preparing this 2015 Plan, the City has encouraged broad community participation as indicated by **Table 1.1**. Copies of the City's draft plan were made available for public review at City Hall and the local public libraries in the City. The City noticed

a public hearing to review and accept comments on the draft plan with more than two weeks in advance of the hearing. The notice of the public hearing was published in the local press and mailed to the City Clerk. On June 20, 2016, the City held a noticed public hearing to review and accept comments on the draft plan. Notice of the public hearing was published in the local press. Following the consideration of public comments received at the public hearing, the City adopted the 2015 Plan on June 20, 2016. A copy of the City Council resolution approving the 2015 Plan is included in **Appendix D**.

As required by the Act, the 2015 Plan is being provided by the City to DWR, the California State Library, and the public within 30 days of the City's adoption.

Table 1.1
Coordination and Public Involvement

	Participated In Plan Preparation	Notice of Preparation /Contacted for Assistance	Commented on Draft	Notified of Public Hearing	Attended Public Hearing
City Water Dept. Staff	x	x	x	x	x
City Public Works Dept. Staff		x	x	x	x
City Manager's Office				x	x
City Council				x	x
The Metropolitan Water District (MWD)		x		x	x
LA County Dept. of Public Works				x	
LADWP		x		x	
ULARA Water Master		x		x	
City of LA Bureau of Sanitation		x		x	
Interested General Public			x	x	x

1.3 FORMAT OF THE PLAN

The sections and information contained in this 2015 UWMP correspond to the items in the UWMP Act and other amendments to the Water Code, including the Water Conservation Act of 2009 (SBx7-7), as follows:

Section 1 - Introduction

This section describes the Act, the City's planning process, the history of the development of the City's water supply system, a description of its existing service area, the local climate, population served, and the City's water distribution system.

Section 2 – Water Supply Resources

This section describes the existing water supplies available to the City, including imported water from the Metropolitan Water District of Southern California (MWD) and local groundwater extracted from the Sylmar Groundwater Basin. In addition, this section discusses potential future water supplies, including transfers and exchanges, recycled water, and desalinated water.

Section 3 – Water Quality

This section discusses the quality of the City's imported and groundwater sources. This section also discusses the effect of water quality on management strategies and supply reliability.

Section 4 – Water Demand

This section describes past, current and projected water usage within the City's service area. This chapter also discusses the requirement of the SBx7-7.

Section 5 – Reliability Planning

This section presents an assessment of the reliability of the City's water supplies by comparing projected future water demands with expected available water supplies under three different hydrologic conditions: normal year; a single dry year; and multiple dry years. This 2015 Plan concludes that if projected imported and local supplies are developed as anticipated, no water shortages are anticipated in the City's service area during the planning period.

Section 6 – Conservation Measures

This section addresses the City's implementation of the current Best Management Practices (BMPs). The BMPs correspond to 7 required Demand Management Measures (DMMs), which were previously categorized as the 14 DMMs listed in the Act, and are described in this section.

Section 7 – Contingency Planning

This section describes the City's response plan to water shortages (City Ordinance No. 1638, adopted Oct. 20, 2014), as well as those efforts that will be utilized in the event of a water supply interruption, such as drought. The City's water shortage contingency plan was developed in consultation and coordination with other MWD member agencies. In addition, MWD's Water Surplus and Drought Management Plan (WSDM) is also described.

Appendices

The appendices contain references and specific documents that contain the data used to prepare this 2015 Plan.

1.4 UPDATES TO THE 2015 PLAN

In addition to updated data, the City's UWMP has undergone several changes from 2010-2015 UWMP years (2011-2016 calendar years). A summary of the changes to the UWMP, by section, are provided:

- **Section 2:** Updated information of water supplies.
- **Section 4:** Updated information on the City's SBx7-7 targets and its 2020 sustainability goals.
- **Section 5:** Added a discussion on the recent California drought.
- **Section 6:** Updated DWR's list of DMMs.

In addition to the above changes, there are multiple minor changes. The changes reflect both those that are required by the Water Code and those that the City has elected to include or modify.

1.5 WATER SYSTEM HISTORY

In the early 1900s, much of the western Los Angeles area was unincorporated, which prompted the City of Los Angeles to offer a reliable imported water supply (via the Los Angeles Aqueduct) as an incentive for annexation to the City of Los Angeles. For many areas, this was a welcomed opportunity for many communities. In 1911 however, the City of San Fernando was incorporated and remained autonomous by relying on groundwater to meet its water needs.



Figure 1.1: San Fernando Valley

Due to the continued development of Southern California, several water agencies came together to form the MWD in 1928. MWD was originally created to build the Colorado River Aqueduct to supplement the water supplies of the original founding members. In 1972, MWD augmented its supply sources to include deliveries from the State Water Project via the California Aqueduct. Today, the MWD serves more than 145 cities and 94 unincorporated communities through its 26 member agencies.



Figure 1.2: Metropolitan Water District (MWD)

As a result of the City's urban growth, the City of San Fernando realized the benefits of reliable imported supplies and became a member agency of MWD in 1971 (due to an earthquake that destroyed the City's wells). Today, the City of San Fernando is one of 14 retail water agencies served by MWD and receives imported water to supplement its groundwater supplies on an as-needed basis only.

Typically, the City has been able to meet 100 percent of its demand from its groundwater wells. Occasionally, the City experiences high water demand which causes the City to purchase imported water. For this reason, the City is working

on equipping two of the City wells (Well 7A and Well 3) with an ion-exchange nitrate treatment system in order to decrease the need for imported water while increasing groundwater utilization. Currently, Well No. 7A's treatment system is near completion of the construction phase and will have the capacity of approximately 1,000 gallons per minute (gpm). Well No. 3's treatment system is planned for the near future and also has a capacity of 1,000 gpm.

1.6 WATER SERVICE AREA

The City is located in the San Fernando Valley northwest of downtown Los Angeles and is bounded on all sides by the City of Los Angeles. The City's total area is 1,550 acres or 2.42 square miles and overlies both the San Fernando and Sylmar groundwater basins. The water service area comprises the entire City limits and serves all of the City's residents. The City is primarily a residential community but also has a mixture of commercial, industrial, and landscape water users. The water service area and zoning map are shown in **Figures 1.5** and **1.6** on pages 1-7 and 1-8.

1.7 CLIMATE

San Fernando has a Mediterranean climate with moderate, dry summers with an average temperature of about 73°F and cool, wet winters with an average temperature of 55°F. The average annual rainfall for the region is approximately 18 inches. Evapotranspiration (ETo) in the region averages approximately 58 inches annually. **Table 1.2** lists the average ETo, temperatures, historical rainfall from 1975 to 2015 and rainfall averages in the past five years for the City.

Table 1.2
Historical Climate Characteristics

Month	Avg. ETo (in.)	Avg. Temp. (°F)	Annual Rainfall (in.)	
			1975-15	2011-15
Jan.	2.6	57.4	4.73	2.51
Feb.	3.0	56.8	5.68	2.93
Mar.	5.2	60.2	3.95	1.93
Apr.	5.5	61.8	1.38	1.17
May	5.1	67.5	0.68	0.39
Jun.	6.6	71.6	0.21	0.01
Jul.	6.7	77.2	0.07	0.17
Aug.	7.2	77.7	0.16	0.01
Sep.	5.7	76.0	0.53	0.31
Oct.	4.6	68.8	1.09	0.93
Nov.	3.1	62.1	1.60	1.18
Dec.	2.4	56.0	3.05	4.72
Annual	**57.7**	**66.1**	**23.13**	**11.67**

Monthly average ETo data was obtained from the California Irrigation Management Information System (CIMIS) and temperature and rainfall data was obtained from the National Oceanic and Atmospheric Administration (NOAA). As noted in the table above, the average rainfall for the past 5 years were significantly lower than the average historical annual rainfall. This indicates that the region was in a drought period. The region is expected to be in an El Nino year for 2016.

1.8 POPULATION

According to the most recent population figures from the California Department of

Finance (DOF), the current 2015 resident population of the City is approximately 24,560 persons. Since the City's service area accounts for all of the City's total residents, the total current resident population served by the City's water system is approximately 24,560 persons. Population growth over the past 5 years, was approximately 0.4 percent. Population projections in accordance with this growth rate over the next 25 years are shown in **Table 1.3**:

Table 1.3
Service Area Population Projections

Year	Service Area Population
2020	25,003
2025	25,456
2030	25,917
2035	26,387
2040	26,865

Since the City is a not a major commercial center for the region, daytime populations estimates are not significantly higher than the City's resident population. However, the City does experience some increases in daytime population that affect overall water consumption.

1.9 WATER SYSTEM

1.9.1 Imported Water

The City's imported water supply is delivered through its 48-inch connection to MWD. Imported water is conveyed from Northern California via the State Water Project and treated by MWD at its Joseph Jensen Treatment Plant. The City's imported water supply does not consist of water received from the Colorado River.



Figure 1.3: MWD's Jensen Treatment Plant

1.9.2 Groundwater

Currently, the City produces groundwater from two active wells (Well 2A and 4A). The wells extract groundwater from the Sylmar Groundwater Basin and range in capacity from 450 gpm to 2,100 gpm. Currently, Well 3 is in stand-by and Well 7A is inactive due to high nitrate levels.



Figure 1.4: Well No. 2A

1.9.3 Distribution System

The City distributes water to approximately 5,264 service customers through a 66.5-mile network of distribution mains ranging from 4 to 20 inches in size. The water system consists of two pressure zones that provide modified pressure to customers. The water service area and zoning map are shown in **Figures 1.5** and **1.6** on the following pages.

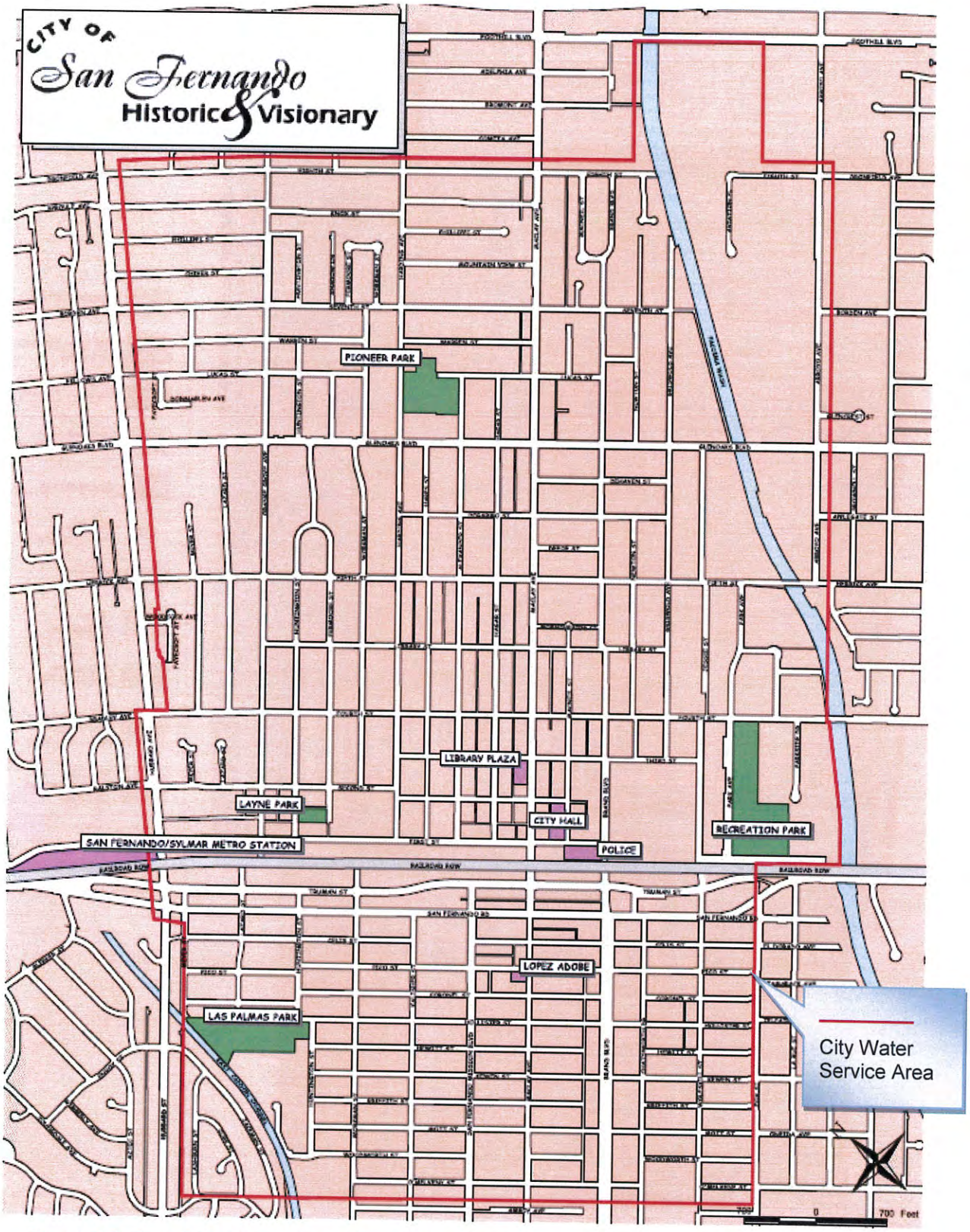


Figure 1.5: City of San Fernando Water Service Area

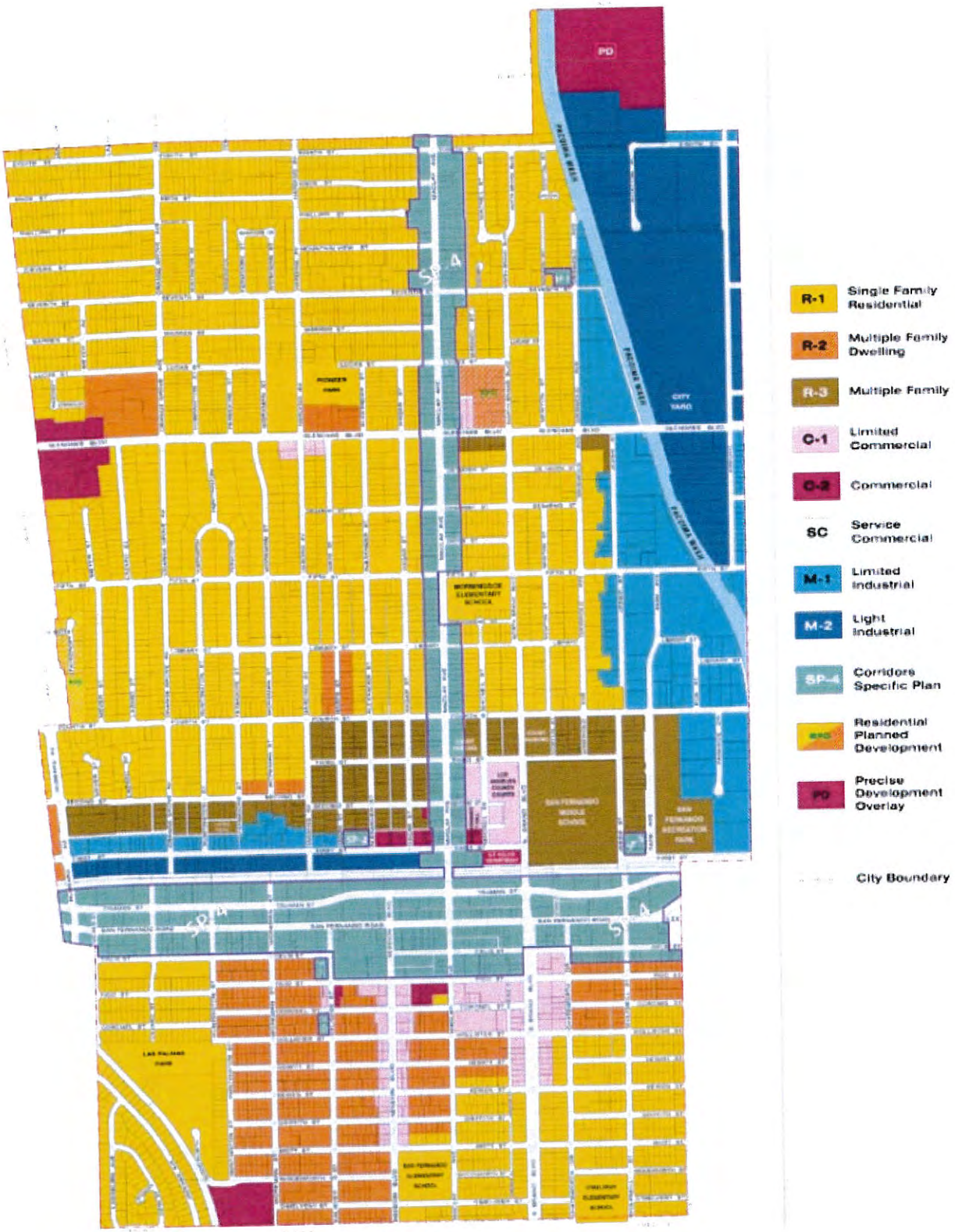


Figure 1.6: City of San Fernando Zoning Map

Water Storage

For storage needs, the City of San Fernando maintains 4 storage reservoirs with a combined storage capacity of 8.9 MG. The City's reservoirs, which are designated as 2A, 3A, 4, and 5, are located adjacent to the City limits.



Figure 1.7: Upper Reservoirs 3A and 4

Table 1.4 lists the City's reservoirs and their capacities:

Table 1.4
City of San Fernando Reservoirs

Reservoir	Description	Capacity (MG)
2A	Concrete/ Partially Underground	3
3A	Concrete/ Partially Underground	2.5
4	Concrete/ Partially Underground	1
5	Concrete/ Partially Underground	2.4
	Total Capacity:	**8.9**

Emergency Interconnections

In addition to its imported water and groundwater, the City's water supply system also includes a 6-inch emergency connection with the City of Los Angeles Department of Water and Power (LADWP) distribution system. During emergencies, this connection enables the City to provide a minimum amount of water to its citizens.

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SECTION 2: WATER SOURCES & SUPPLIES



SECTION 2: WATER SOURCES & SUPPLIES

2.1 INTRODUCTION

The City's water supply sources consist of imported water from MWD, and groundwater produced from the Sylmar Groundwater Basin.

2.2 WATER SUPPLY SOURCES

2.2.1 Imported Water

The City has access to imported water from the Colorado River and the Sacramento-San Joaquin River Delta in Northern California. These two water systems provide Southern California with over 2 million acre-feet (MAF) of water annually for urban uses.

Colorado River

The Colorado River supplies California with 4.4 MAF annually for agricultural and urban uses with approximately 3.85 MAF used for agriculture in Imperial and Riverside Counties. The remaining unused portion (600,000 - 800,000 acre-feet (AF)) is used for urban purposes in MWD's service area.



Figure 2.1: Parker Dam at Colorado River

Bay Delta

In addition to the Colorado River, the Sacramento-San Joaquin River Delta provides a significant amount of supply annually to Southern California. The Delta is located at the confluence of the Sacramento and San Joaquin Rivers east of the San Francisco Bay and is the West Coast's largest estuary. The Delta supplies Southern California with over 1 MAF of water annually.



Figure 2.2: Sacramento-San Joaquin Delta

The use of water from the Colorado River and the Sacramento-San Joaquin Delta continues to be a critical issue. In particular, Colorado River water allotments have been debated among the seven basin states and various regional water agencies at both the federal and state levels. The use of Delta water has been debated as competing uses for water supply and ecological habitat have jeopardized the Delta's ability to meet either need and have threatened the estuary's ecosystem.

In order to provide Southern California imported water, two separate aqueduct systems (one for each source of supply) are

utilized to obtain its supplies. These two aqueduct systems convey water from each source into separate reservoirs whereupon the water is pumped to one of several treatment facilities before entering MWD's distribution system. One of these aqueduct systems is known as the Colorado River Aqueduct (CRA). The CRA was constructed as a first order of business shortly after MWD's incorporation in 1928. The CRA is 242 miles long and carries water from the Colorado River to Lake Matthews and is managed by MWD.



Figure 2.3: Colorado River Aqueduct

In addition to the CRA, MWD receives water from northern California via the California Aqueduct. Also known as the State Water Project (SWP), the California Aqueduct is 444 miles long and carries water from the Delta to Southern California and is operated by DWR.



Figure 2.4: California Aqueduct

The previously mentioned aqueducts supply Southern California with a significant amount of its water and are crucial to its sustainability. In addition to these two water systems, there are also several other aqueducts that are vital to the State. The major aqueducts in California are shown in **Figure 2.5** on page 2-3.

Imported Water Purchases

As a wholesale agency, MWD distributes imported water to 26 member agencies throughout Southern California as shown in **Figure 2.6**. The City is one of 14 retail agencies served by MWD. The City has one 48-inch imported connection to MWD with a capacity of approximately 4,400 gpm (about 7,100 AFY). **Table 2.1** presents the City's imported water purchased from 2010 to 2015:

Table 2.1
Imported Water Supply 2010-2015
(Purchases from MWD)

Year	Purchases (AF)
2010	51
2011	19
2012	114
2013	74
2014	108
2015	0
Average:	**61**
2005-2009 Average:	**340**

As can be noted from **Table 2.1** above, the City imports water on an as-needed basis only. The City currently has a preferential right of 0.10 percent of MWD's supplies and a Tier 1 limit of 629 AFY.

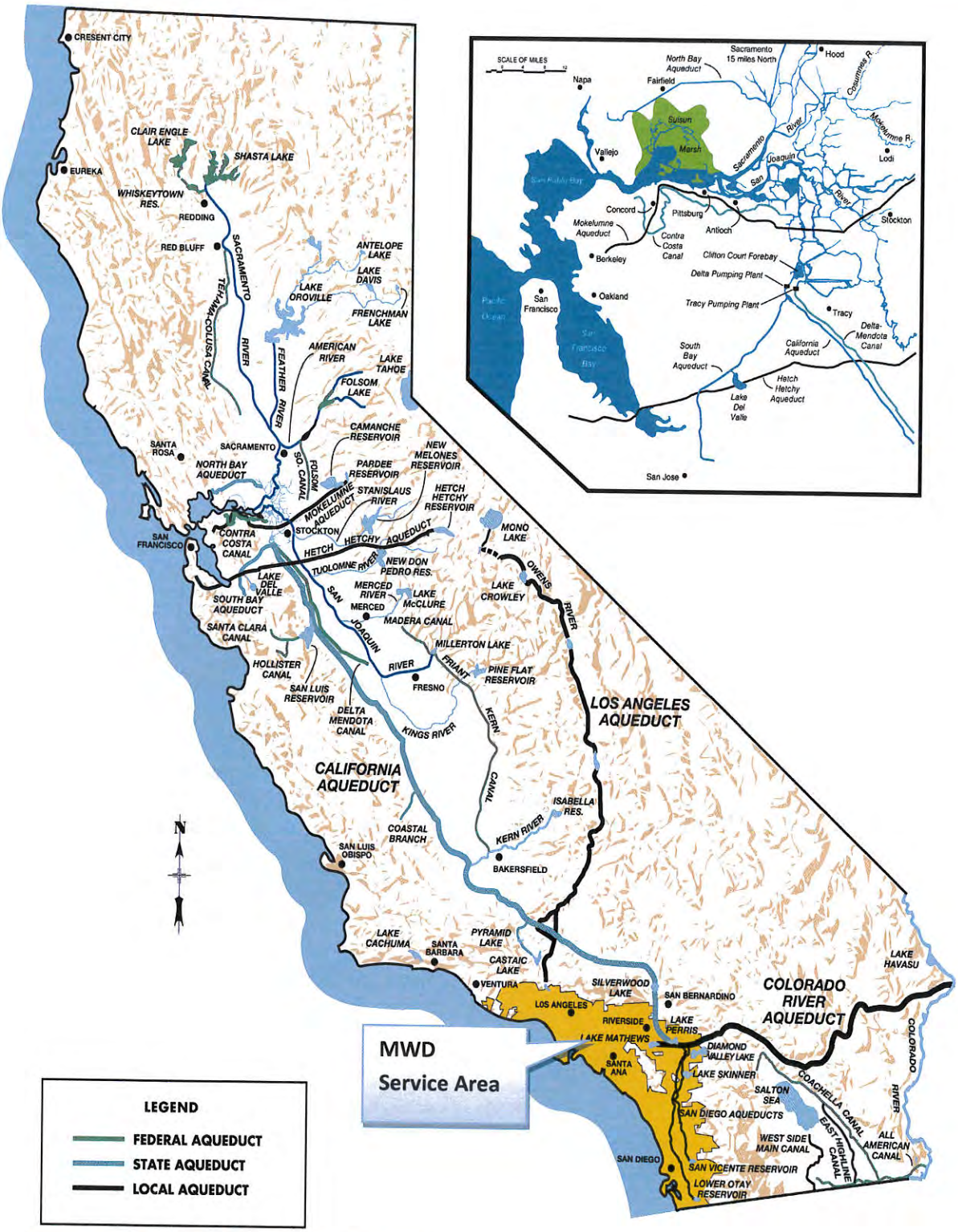


Figure 2.5: Aqueduct Systems in California

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Agency Map

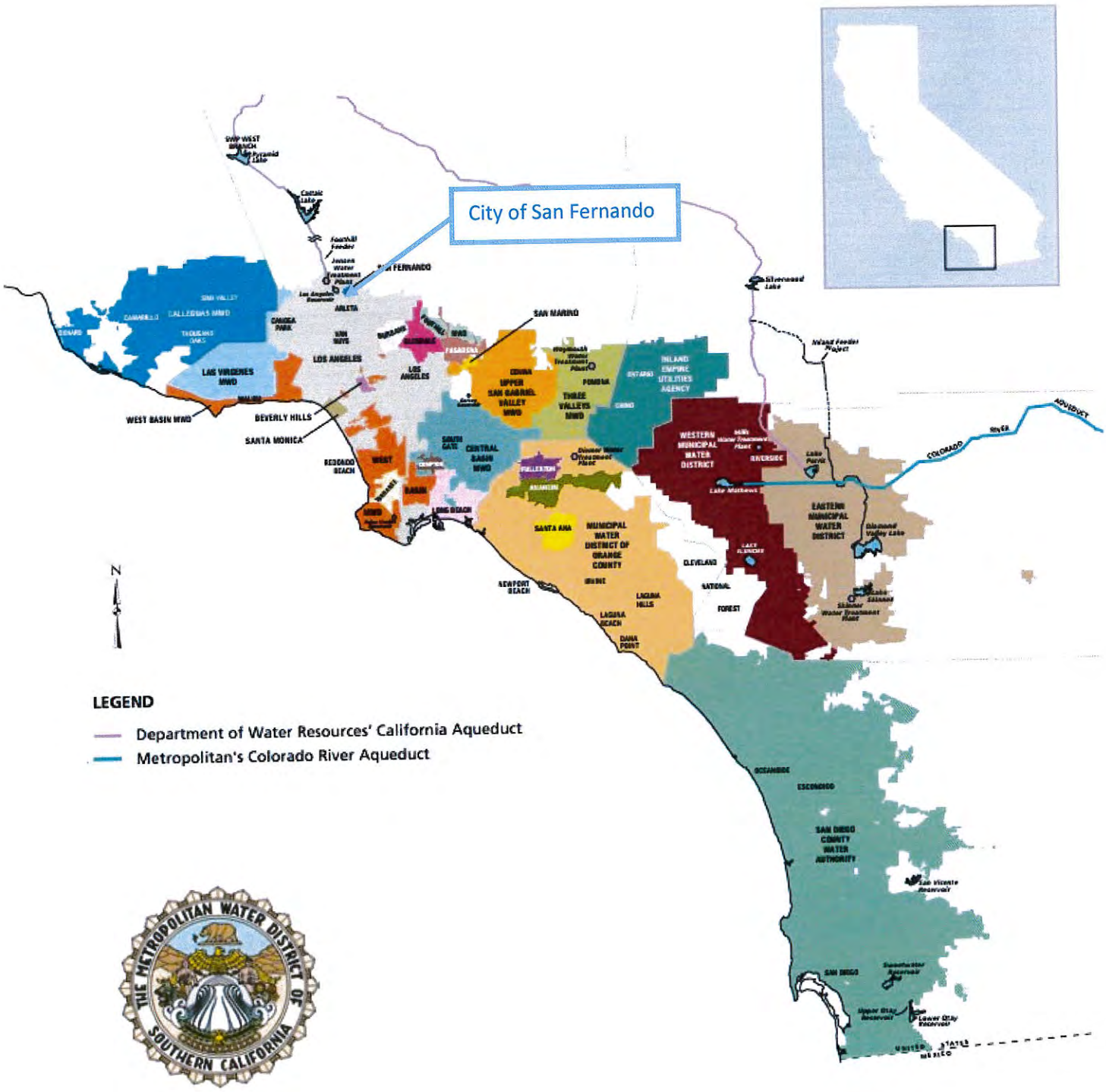


Figure 2.6: MWD Service Area Map

2.2.2 Groundwater

The City obtains its groundwater supply from the Sylmar Groundwater Basin (Basin). The Basin is located in the San Fernando Valley and underlies the City of San Fernando and unincorporated communities of the City of Los Angeles (see **Figures 2.7** and **2.8**). The Basin is in the northerly part of the Upper Los Angeles River Area (ULARA) basins (as shown in **Figure 2.7**), and consists of 5,600 acres and comprises 4.6 percent of the total valley fill. The Sylmar Basin is separated from the San Fernando Basin by the Sylmar Fault zone. The Basin is bounded to the north and northeast by the San Gabriel Mountains, and to the north and northwest by the Santa Susana Mountains.

Water-bearing deposits of the Sylmar Basin include unconsolidated and semi-consolidated marine and alluvial sediments deposited over time. The water-bearing sediments consist of the lower Pleistocene Saugus Formation, Pleistocene and Holocene age alluvium (CSWRB 1962). The ground-water in this basin is mainly unconfined with some confinement within the Saugus Formation in the western part of the basin and in the Sylmar and Eagle Rock areas (CSWRB 1962). The average specific yield for deposits within the basin varies from about 14 to 22 percent (DPW 1934). Well yield averages about 1,220 gpm with a maximum of about 3,240 gpm.

Groundwater in the Basin is replenished naturally by percolation from precipitation, receiving an average annual precipitation of about 23.13 inches, and by stream flow and subsurface inflows from the Santa Susana and San Gabriel Mountains. Since the Basin is mostly urbanized and soil surfaces have been paved to construct roads, homes, buildings, and flood channels, natural replenishment to the basin's water-bearing formations is limited to only a small portion of basin soils. Since the Basin does not receive any artificial recharge through injection wells or spreading basins, groundwater production is limited by low safe-yield limits.

Groundwater levels in the Sylmar Basin are typically at or above mean sea level (MSL), with water levels of about 1,000 feet underneath the City of San Fernando. A few portions of the Basin, however, contain deeper aquifers with groundwater as deep as 6,000 feet below surface levels.

Groundwater flow in the Sylmar Basin is generally from the Santa Susana and San Gabriel Mountains in the north towards the south/southeast into the San Fernando Basin in the south as water levels are substantially higher in the Sylmar Basin. However, there are no stipulations regarding these outflows into the San Fernando Basin.

The total storage in the Sylmar Basin is estimated to be about 310,000 AF. The natural safe yield is currently estimated to be about 7,140 AFY according to a July 2012 assessment. This is a temporary safe yield that will be in place for at least five years. In the 1984 Sylmar Basin Judgment, the Cities of Los Angeles and San Fernando were granted an equal share to the safe yield of the Sylmar Basin, which stood at 6,210 AFY at the time the judgment was issued. Since then, the safe yield limit was increased three times and currently stands at 7,140 AFY (3,570 AFY per City) according to the

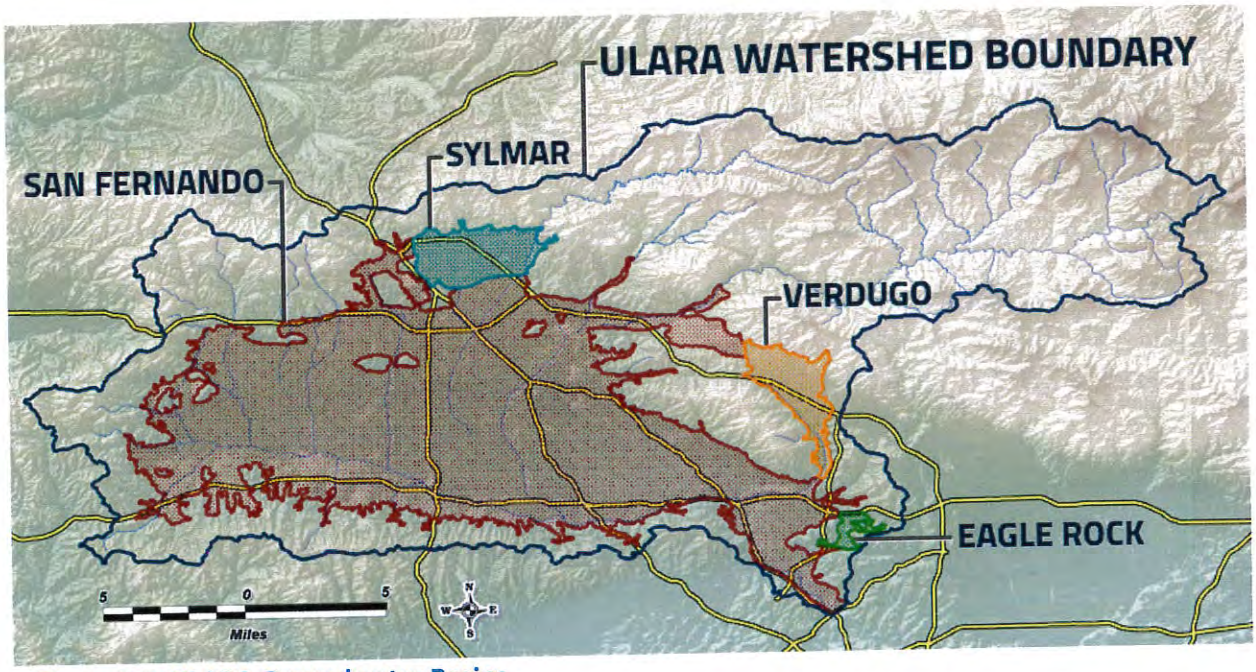


Figure 2.7: ULARA Groundwater Basins

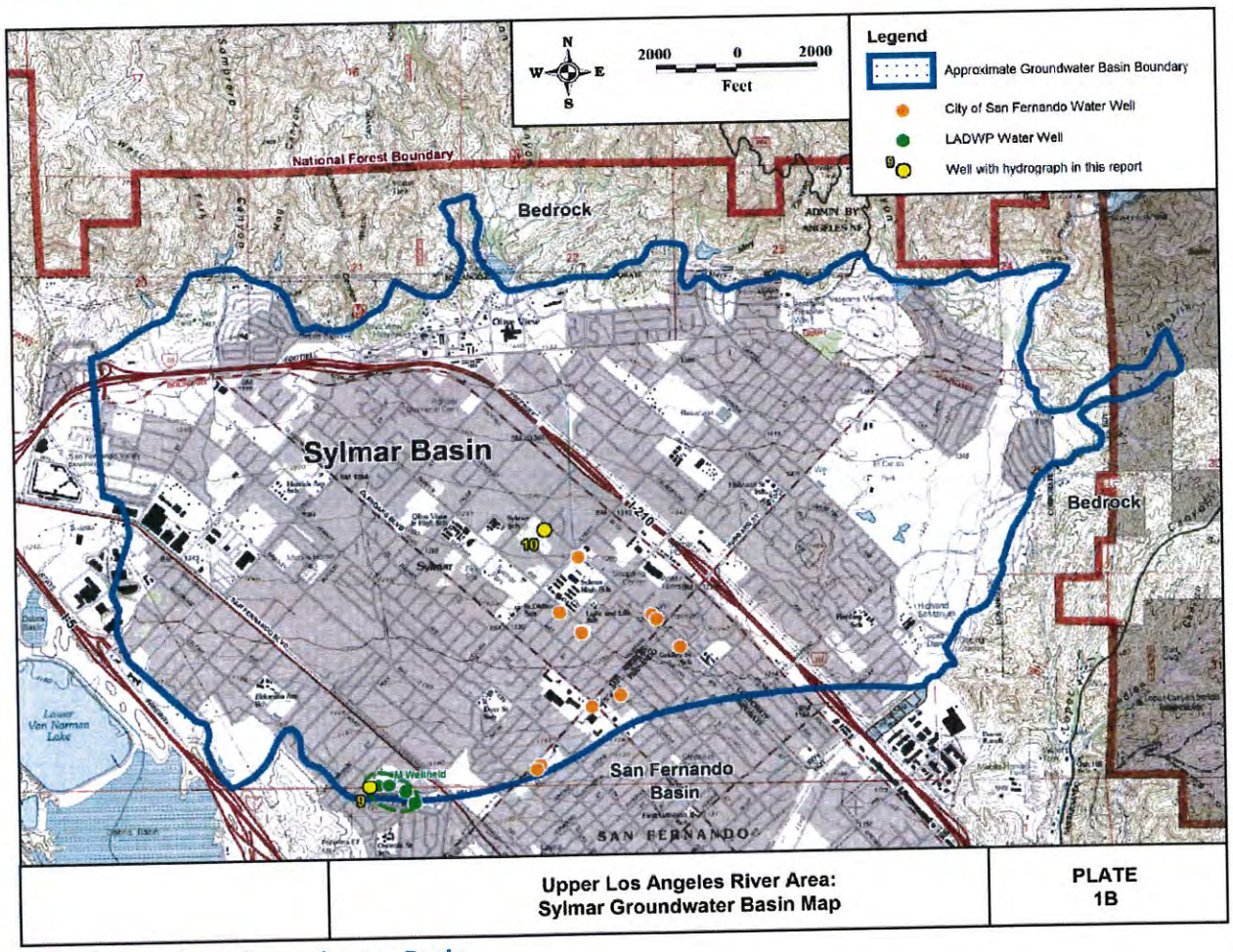


Figure 2.8: Sylmar Groundwater Basin

July 2012 provision titled "Final Report—Sylmar Basin Safe Yield, 5-Year Re-assessment" (see **Appendix H**). Additionally, San Fernando and Los Angeles each has the right to receive stored water credit in the Sylmar basin.

The Sylmar Basin is an adjudicated basin and the management of water resources and operations in the Basin is provided by the ULARA Watermaster. A copy of the judgment is attached in **Appendix I**. The California State Water Resources Control Board's Division of Drinking Water (DDW) helps monitor groundwater quality and contaminant levels.

The key characteristics of the Sylmar Basin are listed below in **Table 2.2**:

Table 2.2
Sylmar Basin
Summary of Characteristics

Item	Capacity
Depth to Groundwater	50-6,000 ft.
Thickness of Groundwater Table	180-1,050 ft.
Storage Capacity	310,000 AF
Operating Safe Yield	7,140 AFY
Adjudicated Rights	7,140 AFY
Spreading Basins (Total)	0
Wells (Active)	3
Wells (Inactive)	1

Groundwater Production

The City currently has two active wells (2A and 4A) for groundwater extraction. Well No. 3 is currently on stand-by due to high nitrate levels; however, a nitrate treatment plant for this well is currently in the planning stages. Well No. 7A is also undergoing a nitrate treatment system upgrade. In the past ten years, the City has upgraded all of its wells. Well No. 2A is the City's most productive well with a rated capacity of 2,100 gpm. Occasionally, the City's groundwater facilities experience contamination issues that can affect their supply reliability. In the past, the City has used imported water to maintain supply reliability. However, in more recent years, the City has looked to other options in order to decrease imported water while increasing groundwater quality and production.

The City is currently in the final stages of the construction phase for a nitrate treatment ion-exchange plant for Well No. 7A. The project is expected to be completed in 2017. A similar ion-exchange treatment plant is also in the planning stages for Well No. 3.



Figure 2.9: City Well No. 7A Facility

The City's groundwater well pumping capacities are summarized in **Table 2.3**:

Table 2.3
City Groundwater Wells

Well No.	Capacity (gpm)
2A	2,100
3	1,000
4A	450
7A	900
Total Capacity:	**4,450**

To monitor the City's groundwater extraction, each of the City's wells are equipped with flowmeters to measure well production. Well production is recorded monthly by City water staff and reported monthly to the ULARA Watermaster and annually to DDW. Every year, as part of their conservation and documentation efforts, the City completes and submits the Electronic Annual Report to the Drinking Water Program (eARDWP), as pursuant to Section 116530 of the California Health and Safety Code. The total groundwater production since 2010 is shown below in **Table 2.4**:

Table 2.4
2010-2015 Groundwater Production

Year	Production (AF)
2010	3,070
2011	3,122
2012	3,215
2013	3,332
2014	3,166
2015	2,768
Average:	**3,112**

2.3 WATER SUPPLY SUMMARY

Over the past five years, the City's groundwater pumping ability has led the City to be mostly independent of imported water, particularly in the past few years. Due to rising costs of imported water, the continued reliance of groundwater vs. imported water will provide cost savings for the City.

Table 2.5 lists The City's supply totals:

Table 2.5
Water Supply Summary

Year	Imported (AF)	Ground (AF)	Total (AF)
2010	51	3,070	3,121
2011	19	3,122	3,141
2012	114	3,215	3,329
2013	74	3,332	3,406
2014	108	3,166	3,274
2015	0	2,768	2,768
Average (2010-2015):	**61**	**3,112**	**3,173**
Average (2005-2009):	**340**	**3,292**	**3,632**

2.4 PROJECTED WATER SUPPLY

The City expects to maintain their low levels of imported water purchases through groundwater production from its well facilities. It is unlikely that the City will add to these supply sources to include recycled water, as the infrastructure is not in place to receive recycled water. **Table 2.6** displays the City's projected supply availability outlook during a normal water year based on the City's adjudicated groundwater rights and preferential right of 0.10 percent of MWD's annual supplies:

Table 2.6
Projected Water Supply Availability

Year	Imported (AF)	Ground (AF)
2020	3,653	3,570
2025	3,755	3,570
2030	3,925	3,570
2035	4,055	3,570
2040	4,091	3,570

Although the City's groundwater rights are currently at 3,570 AFY, the City's overall water supply reliability is expected to remain consistent or improve slightly due to limited population growth coupled with conservation. The City will also continue to benefit indirectly from regional conservation efforts and also through MWD's efforts to augment its supplies and improve reservoir storage capacities. **Section 5** discusses reliability issues and compares the City's projected water supplies to projected demands for normal, dry, and multiple dry years through 2040.

2.5 ALTERNATE WATER SOURCES

This section provides an overview of alternative water sources (non-potable supplemental supplies) and their potential uses. Alternative water sources include recycled water, recycled stormwater, greywater, and desalinated seawater.

2.5.1 Recycled Water

Recycled water is the reuse of treated wastewater for non-potable and indirect potable reuse applications. Wastewater is treated to different levels of purification based on the usage need. Recycled water is often used to irrigate landscapes, replenish groundwater aquifers, and provide industrial users with an alternative water supply to meet their non-personal water use needs.

Wastewater Collection & Treatment System

Municipal wastewater is generated in the City's service area from a combination of residential, commercial, and industrial sources. The quantities of wastewater generated are generally proportional to the population and the water used in the service area. Under a contract entered into in 1969, the City's wastewater is collected and discharged to the City of Los Angeles for treatment and disposal. The contract provides the City with purchased capacity rights in the Hyperion Treatment Plant in El Segundo, for average daily flow of 1.14 million gallons per day (MGD) and an instantaneous peak flow of 3.2 cfs.

Recycled Water Potential in the City

Due to the high costs involved in constructing recycled water infrastructure, the City has not considered using recycled water in the past and the City currently does not use recycled water. As a result, the City has not considered any formal plans nor has specifically identified any potential recycled water users. If the City were to use recycled water in the future (with help from LADWP or MWD), the City would benefit as typical recycled water users (large landscapes, City parks & medians, and dual-plumbed buildings) could receive recycled water. Currently, the City is investigating a potential option with Southern California Edison as a funding partner to install a scalping plant and supply recycled water to



Figure 2.10: Wastewater Treatment at Hyperion in El Segundo, CA

irrigation customers. If the City anticipates receiving recycled water in the near future, the City could prepare an optimization plan which identifies specific recycled water customers. Currently, the City encourages the efficient use of potable water while raising awareness of alternative water sources such as recycled water.

2.5.3 Greywater

Greywater systems have been used in California to provide a source of water supply for subsurface irrigation and also as a means to reduce overall water use. Greywater consists of water discharged from sinks, bathtubs, dishwashers, and washing machines. Greywater systems consist of an underground tank and pumping system. Greywater is currently legal for subsurface irrigation in the State of California; however, strict regulations and high installation costs have impeded installation of professional greywater systems and have the unintended consequence of undocumented and noncompliant use of greywater.

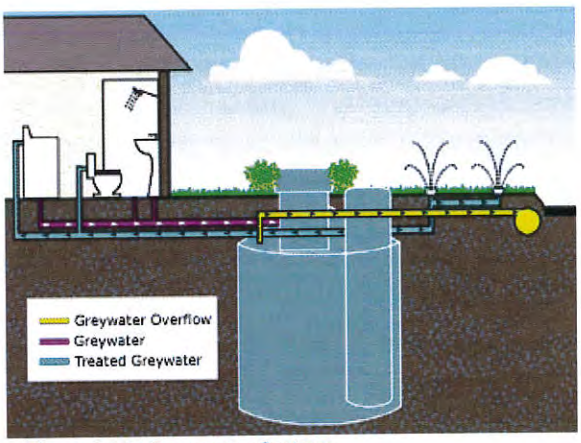


Figure 2.12: Greywater System

The promotion of greywater systems as a means to reduce the City's overall water use is not recommended since the use of

greywater is currently limited to subsurface irrigation and therefore the overall service area-wide reduction in water use (in AF) would be minimal at best. The City does not currently have a formal program in place to support greywater use.

2.5.4 Desalinated Seawater

Seawater desalination is a process whereby seawater is treated to remove salts and other constituents to develop both potable and non-potable supplies. There are over 10,000 desalination facilities worldwide that produce over 13 million AFY. Desalinated water can add to Southern California's supply reliability by diversifying its water supply sources and mitigating against possible supply reductions due to water shortage conditions. With its Seawater Desalination Program, the MWD facilitates implementation and provides financial incentives for the development of seawater desalination facilities within its service area.



Figure 2.13: Seawater Desalination Plant

A total of five member agencies submitted projects totaling 142,000 AFY. In 2004, MWD adopted an Integrated Resource Plan (IRP) update, which included a desalination goal of 150,000 AFY by the year 2025. Currently, the five member agency projects are in various levels of development. Since The City's service area is not located adjacent to the ocean, there are no plans to incorporate desalinated seawater into its supply sources.

2.6 TRANSFERS OR EXCHANGES

The City owns rights to extract 3,570 AF of groundwater annually; however, the City may experience at times reliability issues with its wells due to mechanical or water quality issues that limits the City's groundwater production. Conversely, the City may extract amounts in excess of 3,570 AFY based on the Sylmar Basin Judgment (up to 10 percent) or based on leases with the City of Los Angeles. The City may consider short-term or long term leases of its groundwater either to or from the City of Los Angles, based on the need. Additionally, the City has a 6-inch interconnection with the City of Los Angeles which is capable of transferring water to the City during short-term emergencies.

Over the long term, the City expects to reduce dependency on imported water while increasing water use efficiency. Groundwater is expected provide the majority of the City's water supplies while imported water will be purchased to meet the gap between total demand and groundwater production. Since the City's population is not expected to increase significantly, the City does not foresee a need to lease or to purchase groundwater rights as a long-term practice.

2.7 PLANNED SUPPLY PROJECTS

The City continually reviews practices that will provide its customers with adequate and reliable supplies. Due to this fact, the

City is currently in the design phase of a denitrification treatment plant for Well No. 3. This is in addition to the denitrification treatment plant that is currently nearing completion at Well No. 7A. Since Wells No. 3 & 7A have had nitrate readings slightly above the MCL of 45 mg/l in the past, they have been taken offline and production has temporarily halted. With the completion of these treatment plants, groundwater quality and production will be increased.

The City of San Fernando's local groundwater source from the Sylmar Basin provides a reliable local water source which is an asset utilized to minimize the City's dependence on imported water. The City will continue effective operation and maintenance efforts to ensure all well sites and water infrastructure are used in an efficient manner.

SECTION 3: WATER QUALITY



SECTION 3: WATER QUALITY

3.1 WATER QUALITY SUMMARY

In 1974, Congress passed the Safe Drinking Water Act in order to protect public health by regulating the nation's drinking water supply. As required by the Safe Drinking Water Act, the City provides annual Water Quality Reports to its customers. Currently, all of the water that the City distributes to its customers meet federal Environmental Protection Agency (EPA) standards and the State Water Resources Control Board (State Water Board) standards.

The quality of water distributed to the City water system is directly related to the quality of the supply sources from which they obtain their water. This section explores the quality of the City's supply sources and examines important water contaminants that are actively monitored as part of its efforts to supply safe drinking water to its customers.

3.2 QUALITY OF SOURCES

The two main sources of the City's water supply as mentioned in **Section 2** are imported water from MWD and groundwater from the Sylmar Basin. Thus, the quality of water delivered to the City's customers is a result of the efforts of both the City and MWD.

3.2.1 Imported Water Overview

The City receives imported water from MWD on an as-needed basis for emergency purposes to meet federal and state standards. Imported water obtained from the SWP and the CRA contain specific contaminants that are characteristic of the Bay Delta and the Colorado River regions. Some of the contaminants of concern include: salinity, biological loads, disinfection by-products, perchlorate, uranium, and arsenic. MWD's 2015 UWMP discusses the water quality concerns of its supplies in detail.

To provide safe drinking water to its customers, MWD treats its water supply at five separate treatment plants, three of which blend a mixture of SWP and CRA water. Of the five plants that serve Southern California, the City has access to treated effluent from the Jensen Treatment Plant.



Figure 3.1: Jensen Treatment Plant

Although MWD water meets all regulatory requirements, MWD understands the need for stringent testing and quality assurance for its customers. Water is analyzed and tested at one central, state-of-the-art treatment facility in addition to five satellite laboratories at each treatment facility to ensure the quality and safety of its water.

3.2.2 Imported Water Quality

MWD's two main supply sources (SWP and CRA) have different water quality issues. However, only water from the Bay-Delta in Northern California concerns the City. Some of the key water quality issues with water obtained from the Bay-Delta via the SWP are discussed as follows:

Total Organic Carbon and Bromide

Water containing high levels of Total Organic Carbon and Bromide, once treated with disinfectants such as chlorine or ozone, can lead to the production of Disinfection byproducts (DBPs). DBPs are known to cause certain cancers and pose a significant concern to the City's imported water supply. The EPA currently regulates DBPs with strict standards. MWD manages DBP concentration by participating in the CALFED Bay-Delta Program to safeguard SWP source water and also by providing advanced treatment operations.

Nutrients (Algal Productivity)

Elevated nutrient levels in the SWP can adversely affect the City's imported water quality by stimulating biomass growth such as algae and aquatic weeds. Nutrients can also provide a source of food leading to the growth of nuisance biological species. This can lead to taste and odor concerns and can impede normal treatment operations.

MWD offsets the nutrient rich SWP water by blending it with CRA water in MWD's blend reservoirs. Although nutrient loading is a concern, MWD does not expect there to be any effects on its supplies from the SWP.



Figure 3.2: Algal Growth in State Water Project

Arsenic

Arsenic is a naturally occurring element found in rocks, soil, water, and air. It is used in wood preservatives, alloying agents, certain agricultural applications, semi-conductors, paints, dyes, and soaps. Arsenic can get into water from the natural erosion of rocks, dissolution of ores and minerals, runoff from agricultural fields, and discharges from industrial processes. Long-term exposure to elevated levels of arsenic in drinking water has been linked to certain cancers, skin pigmentation changes, and hyperkeratosis (skin thickening).

The MCL for arsenic in domestic water supplies was lowered to 10 µg/L, with an effective date of January 2006 in the federal regulations, and an effective date of November 2008 in the California regulations. The standard impacts both groundwater and surface water supplies. Historically, MWD's water supplies have had low levels of this contaminant and would not require treatment changes or capital investment to comply with this new standard.

Other Emerging Imported Water Concerns

As the technology to discover contaminants advances, the City faces ongoing threats to its drinking water as new contaminants are discovered and existing contaminants are more readily detected. Some of the current contaminants not previously mentioned which pose a threat to the City's imported water supplies include, but are not limited to: Chromium VI, N-nitrosodimethylamine (NDMA), and Pharmaceuticals & Personal Care Products (PPCPs). Continued mitigation efforts may, however, lead to a decrease in the threat level of these contaminants, as has been demonstrated through past mitigation efforts

3.2.3 Groundwater Quality

In addition to imported water quality concerns, the City is also concerned with groundwater quality pumped from the Sylmar Basin. In general, groundwater in the main producing aquifers of the basins of the ULARA Basins has significant contamination issues. However, groundwater produced from the Sylmar Basin typically has better quality than groundwater produced form other ULARA Basins. Some of the main constituents of concern that have affected well production in the Sylmar Basin include perchlorate, nitrate and volatile organic compounds (VOCs), trichloroethylene (TCE) in particular, which have been detected in various wells over the past five years. Other ULARA constituents of concern include high total dissolved solids (TDS) and total hexavalent chromium. **Table 3.1** summarizes the main constituents of concern in the ULARA Basins.

Table 3.1
ULARA Groundwater Basin: Constituents of Concern

Constituent	Units	Range	Description
TDS Secondary MCL = 500	mg/L	280 to 729	Highest levels reported in the North Hollywood area of the San Fernando Basin.
VOCs **(TCE and PCE)** Primary MCL for TCE = 5 Primary MCL for PCE = 5	µg/L	<5 to over 100	The highest concentrations in Glendale and Burbank areas of the eastern San Fernando Basin are being treated. Other areas in the San Fernando Basin, which have levels significantly above the MCL, are currently being addressed through treatment or other means, while long-term solutions are being developed.
Perchlorate Notification level = 6	µg/L	ND to 8.9	Detected in 2 wells above notification level since 2000.
Nitrate (as N) Primary MCL = 10	mg/L	2.6 to 79.2	Highest levels reported in the Verdugo Basin and eastern portion of the San Fernando Basin
Total and Hexavalent Chromium Total Cr MCL = 50 Hexavalent Cr MCL = TBD	µg/L	ND to 423	Highest concentrations are in the Burbank and Glendale areas. These areas are currently being investigated. The city of Los Angeles discontinued pumping from one San Fernando Basin production well after total hexavalent chromium levels as high as 423 µg/L were detected.

3.3 WATER QUALITY EFFECTS

The previous subsection summarized the general water quality issues of MWDs imported water and the Basin's groundwater supplies. The same water quality concerns apply to the City's water supply. Groundwater that does not meet drinking water standards now must be provided wellhead treatment, since blending with imported water to meet state and federal standards is no longer in effect.

Due to the mitigation actions undertaken by the City and MWD, the City does not anticipate any reductions in its water supplies due to water quality issues. Future regulatory changes enacted by the EPA and/or the State legislature will be met through additional mitigation actions in order to meet the standards and to maintain water supply to the City's customers.

Additionally, during times of groundwater supply reduction due to water quality concerns, the city will import water to meet demand until mitigation actions are complete and the City is operating its groundwater facilities at full capacity. Thus, the City does not expect water quality to be a major factor in its overall supply reliability or management considerations.

SECTION 4: WATER DEMANDS



SECTION 4: WATER DEMANDS

4.1 INTRODUCTION

Water use within the City is variable and depends on a number of factors which range from irrigation to industrial use and from inefficient plumbing to water losses. Changes in residential plumbing fixtures and customer usage habits can significantly affect water usage for most agencies. This section explores the water usage trends within the City and quantifies total usage per customer type. In addition, the provisions of the SBx7-7 are explored in detail.

4.2 CURRENT CITY WATER NEEDS

The City of San Fernando, like many other cities of Southern California, began as an agricultural area and throughout the years has transformed into a suburban town. Initially the land uses in the City were primarily agricultural with some residential. By 1920, the City's population reached 3,204 persons and the City continued to grow at a rate of about 275 people per year until 1990, when the population growth rate began to level off.

The City's population growth rate has decreased in the past 20 years and is currently at under 0.5 percent annually. The City is approaching ultimate "built-out" with remaining expected future water demands primarily attributable to possible land use changes in residential densities, such as multi-story residence complexes, and in-fill land development projects. Due in part to this slowed growth, the City's water use over the past 15 years has been fairly consistent and recent total water consumption reported for calendar year 2009 is slightly less than total water consumption reported for calendar years 1995 through 1997. As a result, the City of San Fernando's local groundwater sources and imported supply capacity put the City in a position of providing a reliable source of quality water for its water users due to this consistency of water demands.



Figure 4.1: Residential Irrigation

The City of San Fernando supports water conservation while maintaining the beauty of its community parks, schools, and recreational facilities both in the private and in the public sector. Since the City is zoned mainly for residential use and the majority of residential water consumption in the City is used for non-personal purposes (i.e. irrigation, car washing, etc.), the City has a significant number of residential lots which require consistent irrigation to maintain landscapes. Of the water used for personal purposes, the majority of water consumed is attributable to toilet flushing and clothes washing.

In the commercial and institutional sector, water needs vary as customers range from restaurants to offices and from retail stores to schools. Office buildings and retail stores require significantly less water than restaurants and schools and are not usually the key focus of water conservation efforts.

In order to maintain civic pride and a sense of community, City parks and other City right of ways (medians, etc.) require consistent irrigation. To prevent water waste, the City follows an irrigation schedule that limits the length of irrigation to avoid overspray runoff and also eliminates evapotranspiration from daytime watering.



Figure 4.2: Las Palmas Park

Overall water use characteristics within the City's service area reflect regional water use characteristics within Southern California. As a result of these water needs, the City has passed a conservation ordinance similar to other agencies which limits or restricts non-personal water use during periods of drought to conserve water use for the more important health and safety needs of its customers. The City's Conservation Ordinance is discussed in greater detail in **Sections 6** and **7**.

4.3 HISTORIC WATER DEMAND

Water demands within the City's service area are met by groundwater from the Sylmar Basin and imported water from MWD. Annual water use since 2010 has ranged from 3,121 AF to 3,963 AF with an average of 3,431 AF as shown below in **Table 4.1**:

Table 4.1
Five-Year Historic Total Water Consumption

Year	Consumption (AF)
2010	3,121
2011	3,141
2012	3,329
2013	3,406
2014	3,274
2015	2,768
Average:	**3,173**

As indicated by **Table 4.1** above, annual water use fluctuates each year and is dependent on climatologic conditions.

4.4 WATER USE STATISTICS

The City maintains records of water consumption and bills its customers on a monthly basis for its water service. The City currently has over 5,100 service connections with a mixture of residential, commercial, institutional, industrial, and landscape irrigation customers. Over 80 percent of the total metered connections are residential (single & multi-family). Commercial & institutional accounts comprise nearly 10 percent of the City's metered connections. Industrial accounts make up about 3 percent of the total

metered connections and have the highest consumption rate at about 1.5 AFY per connection. Water sales data is compiled by City water staff and recorded on the eARDWP and submitted to DDW annually.

The total number of service connections and total water consumption since 2010 is shown below in **Tables 4.2** and **4.3**:

Table 4.2
Number of Service Connections (2010-2015)

Sector	2010	2011	2012	2013	2014	2015
Single Family Residential	3,756	3,802	3,802	3,790	3,800	3,837
Multi-Family Residential	472	462	462	456	457	459
Commercial/Institutional	423	455	455	438	446	599
Industrial	146	181	181	158	162	171
Landscape Irrigation	51	43	43	49	62	70
Other	143	184	184	144	0	6
Total Connections:	**4,991**	**5,127**	**5,127**	**5,035**	**4,927**	**5,142**

Table 4.3
Historic Water Demand by Sector (AF)

Sector	2010	2011	2012	2013	2014	2015
Single Family Residential	1,495	1,513	1,626	1,341	1,579	1,341
Multi-Family Residential	469	444	478	420	466	420
Commercial/Institutional	429	342	372	337	373	337
Industrial	220	203	220	188	212	188
Landscape Irrigation	58	71	87	100	132	100
Other	64	99	127	123	148	123
Total Water Sales:	**2,734**	**2,672**	**2,910**	**2,509**	**2,910**	**2,509**
Unaccounted for Water (%)	387 (12%)	469 (15%)	419 (13%)	897 (26%)	364 (11%)	259 (9%)
Total Water Consumption:	**3,121**	**3,141**	**3,329**	**3,406**	**3,274**	**2,768**

As indicated by **Table 4.3**, unaccounted for water contributes to a significant portion of the City's overall water use (at approximately 14 percent on average) of the total water supply into the City's distribution system. Unaccounted for water consists of routine flushing, unmetered use, and water losses. The reasons for water losses may be from a difference in accuracy of the meter at the production side compared to the service meters, periodic main line flushing, reservoir and other water system maintenance that is typical in the operation and maintenance of a water system.

Recently, the City has identified a leak in Reservoir No. 4, and is planning rehabilitation of this reservoir following the completion of the denitrification treatment plant for Well No. 3.

Although water losses have cost impacts on water agencies, they cannot be prevented entirely. Instead, effort is given to controlling the quantity of water losses (to a cost-effective extent) in order to reduce the cost impact of water losses on water operations.

4.5 WATER CONSERVATION ACT

4.5.1 SBx7-7 Background

Due to reductions of water in the San Joaquin Delta, the Legislature drafted the SBx7-7 to protect statewide water sources. The legislation called for a 20 percent reduction in water use in California by the year 2020. The legislation amended the water code to call for 2020 and 2015 water use targets in the 2010 UWMPs, updates or revisions to these targets in the 2015 UWMPs, and allows DWR to enforce compliance to the new water use standards. Beginning this year (2016) failure to comply with interim and final targets will make the City ineligible for grants and loans from the State needed to attain water self-sufficiency by 2020.

In addition to an overall statewide 20 percent water use reduction, the objective of SBx7-7 is to reduce water use in within each hydrologic region in accordance with the agricultural and urban water needs of each region. Currently, DWR recognizes 10 separate hydrologic regions in California as shown in **Figure 4.3** on page 4-5. Each hydrologic region has been established for planning purposes and corresponds to the State's major drainage areas. The service area of the City is located in the South Coast Hydrologic Region (HR), which includes all of Orange County, most of San Diego and Los Angeles Counties, parts of Riverside, San Bernardino, and Ventura counties, and a small amount of Kern and Santa Barbara Counties. The South Coast HR is shown in **Figure 4.4** on page 4-6.

Per capita water use, measured in gallons per capita per day (GPCD), in the South Coast HR varies between different water agencies, depending on the geographic and economic conditions of the agency's service area. Regions with more affluence, such as Beverly Hills, typically consume more water and therefore have higher GPCD numbers. The South Coast HR has an overall baseline per capita water use of 180 GPCD and DWR has established a regional target of 149 GPCD for the region as a compliance target to satisfy SBx7-7 legislation.



Figure 4.3: California's 10 Hydrologic Regions (with Baselines by Region)



Figure 4.4: South Coast Hydrologic Region

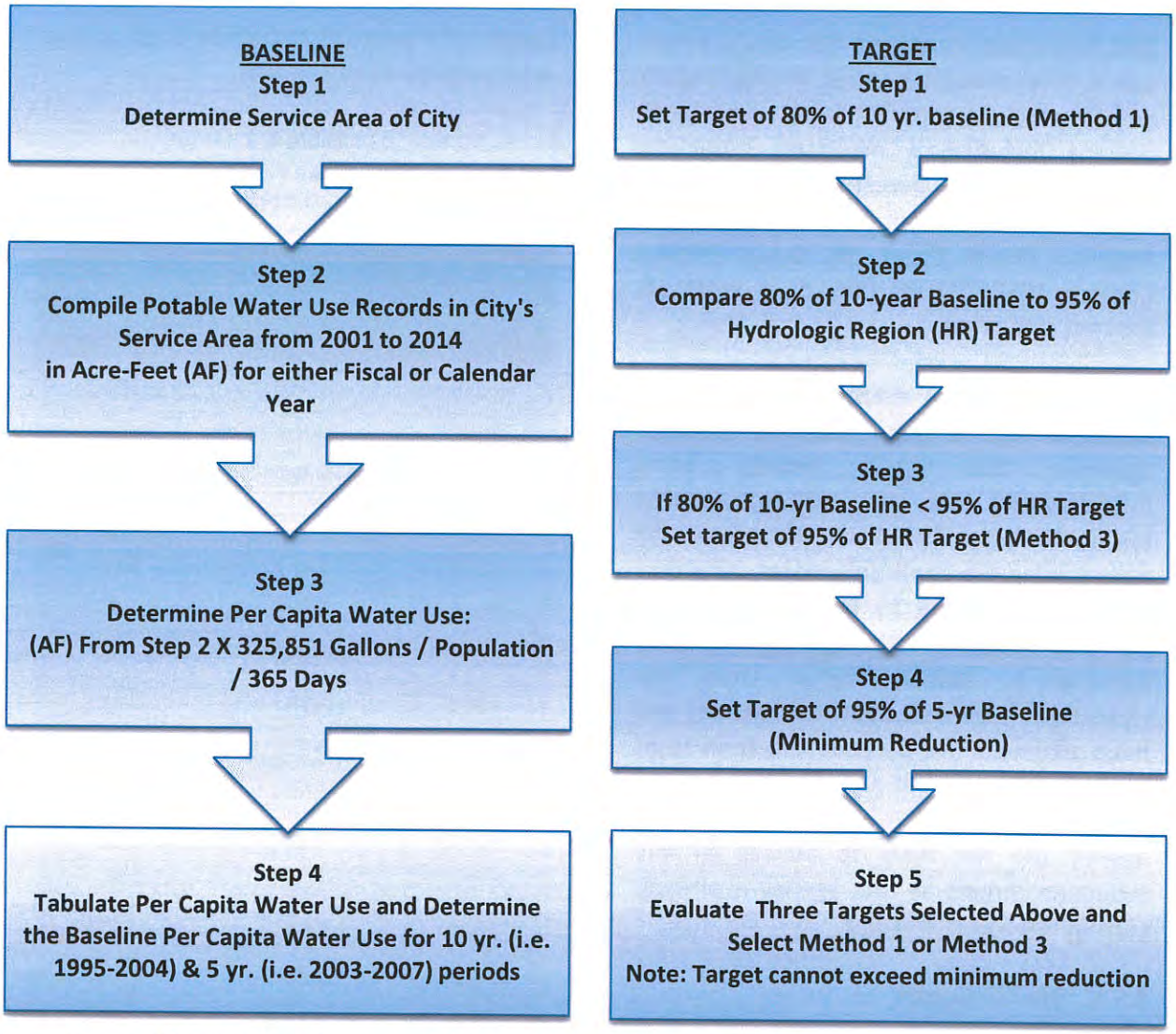


Figure 4.5: Procedure for Determining Baseline and Per Capita Water Use

4.5.2 SBx7-7 Methodologies

To satisfy the provisions of SBx7-7, the City previously established a per capita water use target for the year 2020 as well as an interim target (2015). DWR provided guidelines for determining these targets in its Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (2011) and also in the 2010 and 2015 UWMP Guidebooks. In the 2010 UWMP, the City's baseline water use was determined based on San Fernando's historic water use by the procedure shown above in **Figure 4.5**.

In the same fashion, the City was responsible for determining a 5-year baseline water use in accordance with DWR's guidelines. The Methodologies guidebook made provisions that allowed a water supplier to meet the target requirements by achieving any one of a number of target requirements, provided

that the water supplier's per capita water use is low enough relative to the region within which it supplies water. The basic options included a minimum reduction requirement of 5 percent (Water Code § 10620), a five percent reduction from the Regional (South Coast HR) target (Water Code § 10608.20 (b) (3)), or a strict 20 percent reduction.

These options were established in order to avoid placing any undue hardship on water agencies that have already been implementing water conservation measures for some time. The basic procedure for determining the applicable water reduction target is illustrated by **Figure 4.5** on the previous page. If an agency's 10-year baseline is slightly higher than the Hydrologic Region's target, that agency still must achieve a five percent reduction from its 5-year baseline. If an agency has a per capita water use of 100 GPCD or less, that agency will not have to adhere to any reduction targets as that agency is already considered water efficient.

4.5.3 SBx7-7 Targets

Since the City does not use recycled water, a 10-year instead of a 15-year rolling average was calculated. The City's baseline water use is **142 GPCD**, which was obtained from the 10-year period January 1, 1995 to December 31, 2004.

Table 4.5 shows historic (1996 to 2009) as well as recent (2010 to 2015) water use. The data was used to calculate the continuous 10-year and 5-year average baseline. Moreover, regardless of the compliance method adopted by the City, it will need to meet the minimum water use target of 5 percent reduction from a five-year baseline as calculated.

Table 4.5
City of San Fernando
Recent and Past GPCD Water Use

Year	Total Potable Consumption (AF)	Per Capita (GPCD)
2015	2,768	101
2014	3,274	121
2013	3,406	126
2012	3,329	125
2011	3,141	118
2010	3,121	118
2009	3,395	128
2008	3,653	138
2007	3,757	142
2006	3,699	140
2005	3,650	139
2004	3,894	148
2003	3,791	145
2002	3,786	145
2001	3,649	140
2000	3,735	144
1999	3,996	155
1998	3,324	129
1997	3,575	139
1996	3,564	139
1995	3,460	135
10-yr. Baseline (1995-2004) (SB7: 10608.20)		**142**
5-yr. Baseline (2003-2007) (SB7: 10608.22)		**143**
South Coast HR:		**187**

As determined previously in the City's 2010 UWMP, the City's 10-yr and 5-yr baselines were determined to be 142 GPCD and 143 GPCD, respectively. Thus, the same SBx7-7 targets apply.

In order to determine the correct compliance target, the City's baseline water use was compared to the regional compliance target in order to determine the applicable reduction amounts per the SBx7-7 additions to the water code. The legal stipulations applicable to the City and the required target to be enforced by DWR are shown below in **Table 4.6:**

Table 4.6
City of San Fernando
SBx7-7 2020 Water Use Targets

Min. Reduction Requirement (10608.22)	20% Target (10608.20) (b)(1)	5% Reduction from Regional Target (10608.20) (b)(3)
136	113	142
2020 Per Capita Target:		136
Interim (2015) Target:		140
2015 Per Capita Water Use:		101

As indicated by the above table, the City can select an SBx7-7 target of 136 GPCD (five percent from its five-year baseline) as this amount is less than 142 GPCD (five percent reduction from the South Coast HR's target). Therefore, SB7: 10608.22 applies to the City. In addition, since the City's 20 percent reduction target (113 GPCD) far exceeds the minimum reduction requirement of 136 GPCD, it is feasible for the City to select 136 GPCD as its 2020 water use target. Therefore, the City's compliance target for 2020 per capita water consumption is 136 GPCD in accordance with SB7: 10608.22.

Although the requirements of SBx7-7 seem stringent, it is noteworthy to mention that the City has seen an increase in water efficiency from 2000-2015. This is due in part to a greater achievement of conservation measures, saturation of water-saving plumbing fixtures, and overall water conservation awareness.

The City is not revising its interim or 2020 SBx7-7 targets that were calculated in its 2010 UWMP.

Altogether, the City is not only meeting its SBx7-7 requirements, but also exceeding them. In 2015, GPCD was 101, well below their 2015 interim target. Thus, the City is set to achieve its 2020 target.

4.5.4 Impacts on Bay-Delta

Through adherence to conservation measures, the City can participate in statewide efforts to conserve Sacramento-San Joaquin Bay-Delta Water and to protect the ecological habitat of the region. The Bay-Delta is crucial to the health of the state's natural environment, its residents, and the economy. As an estuary (an inland body of water where fresh river water mixes with salty seawater), the Delta and its islands create a habitat for hundreds of aquatic and terrestrial species, some of which are unique to the region. Delta water irrigates local farms where much of the nation's domestic fresh produce is grown. Finally, freshwater originating in the Sierra



Figure 4.6: SBx7-7 Seeks to Preserve the Waters of the Bay-Delta

Nevada flows through the Delta, providing water supplies for 25 million Californians and the economies in the San Francisco Bay Area, the Central Valley, and of course Southern California.

With increased public awareness of conservation requirements, it is likely that the public will begin to understand the importance of water conservation and will begin to use water even more efficiently.

4.6 PROJECTED WATER DEMAND

Future water use projections must consider significant factors on water demand, such as development and/or redevelopment, and climate patterns, among other less significant factors that affect water demand. Although redevelopment is expected to be an ongoing process, it is not expected to significantly impact water use since the City is already in a near "built-out" condition.

Rainfall and warmer temperatures, however, will continue to extend a major influence on demand as drought conditions and climate change could increase demand at a time when these supplies are limited. Therefore, it is imperative to continue implementing water conservation policies and programs to ensure permanent water savings not just short-term behavior change.

For planning purposes, the City's projected water use for 2020-2040 is broken down by sector, these water demands are included in future water demand projections for single and multi-family homes and listed in **Table 4.7**. The projections also include low-

income households within the City. According to the City's Draft 2013-2021 Housing Element, percentages for extremely low, very low, and low income levels are 18 percent, 17 percent, and 24 percent, respectively. A combined total of 59 percent of households within the City are considered low income.

Table 4.7
Projected Water Demand by Sector (2020-2040)
(Based on SBx7-7 Consumption Requirement of 136 GPCD)

Sector	2020	2025	2030	2035	2040
Water Service Area Population	25,003	25,456	25,917	26,387	26,865
Demands					
Single Family Residential	1,784	1,816	1,849	1,882	1,916
Multi-Family Residential	541	551	561	571	582
Commercial/Institutional	440	448	456	464	472
Industrial	247	251	256	261	265
Landscape Irrigation	110	112	114	116	118
Other	137	139	142	145	147
Total Water Sales:	**3,258**	**3,317**	**3,377**	**3,439**	**3,501**
Unaccounted for Water	551	561	571	581	592
Total Water Consumption (Total Supply into System):	**3,809**	**3,878**	**3,948**	**4,020**	**4,093**

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SECTION 5:
RELIABILITY PLANNING



SECTION 5: RELIABILITY PLANNING

5.1 INTRODUCTION

Drought conditions continue to be a critical issue for Southern California's water supply. As the population of Southern California continues to increase and as environmental regulations restrict imported and local water supplies, it is important that each agency manage its water consumption in the face of drought. Even during times of seasonal drought, each agency ought to anticipate a surplus of supply. This can be accomplished through conservation and supply augmentation, and additionally through prohibitions under penalty of law during times of seasonal or catastrophic shortage in accordance with local ordinances.

This section discusses local and regional efforts to ensure a reliable supply of water and compares projected supply to projected demand. Demand and supply projections are provided in **Tables 5.3 - 5.9**.

5.2 HISTORIC DROUGHTS

Climate data has been recorded in California since 1858. Since then, California has experienced several periods of severe drought: 1928-34, 1976-77, 1987-91, 2007-09 and most recently in 2012-14. California has also experienced several periods of less severe drought. According to DWR, water year 2014 is ranked as the third driest year on record in terms of statewide precipitation, with the three-year period of water years 2012-14 ranking as the driest consecutive three-year period on record in terms of statewide precipitation. The year 1977 is considered to be the driest year on record; however, Southern California sustained few adverse impacts from the 1976-77 drought, while the 1987-91 drought created considerably more concern.

As a result of previous droughts, the State legislature has enacted, among other things, the Urban Water Management Planning Act, which requires the preparation of this plan. Subsequent amendments to the Act have been made to ensure the plans are responsive to drought management. In 1991, several water agencies came together to form the California Urban Water Conservation Council (CUWCC) to manage the impacts of drought through the promotion of water conservation.



Figure 5.1: Lake Oroville: Drought Conditions

The drought of 2007-09 resulted in significant impacts on the State's water supplies, and in November 2009, SBx7-7 was signed into law by Governor Schwarzenegger. SBx7-7, also known as the

Water Conservation Act of 2009, requires mandatory water conservation up to 20 percent by 2020.

At the local level, water agencies have enacted their own ordinances to deal with the impacts of drought. The City has enacted several water conservation policies as part of the City's municipal code that manage water supply during droughts. Compliance ranges from voluntary to mandatory depending on the drought severity.



Figure 5.2: Recent Drought Effects

5.3 RECENT DROUGHT (2011-2015)

A significant drought has hit the state of California since 2011. The drought has depleted reservoir levels all across the state, as reflected by **Figure 5.2** above. In January of 2014, Governor Brown declared a state of emergency and directed state officials to take all necessary actions to prepare for water shortages. As the drought prolonged into 2015, to help cope with the drought, Governor Brown gave an executive order in April 2015 which mandated a statewide 25 percent reduction in water use.

In January of 2016, the DWR and the U.S. Bureau of Reclamation have finalized the 2016 Drought Contingency Plan that outlines State Water Project and Central Valley Project operations for February 2016 to November 2016. The plan was developed in coordination with staff from State and federal agencies. One of the key purposes

of this plan is to communicate goals for 2016 water management and the potential operations needed to achieve those goals for water resources stakeholders and the public.

Although the drought has more significantly impacted surfaces waters and other agencies that use water for agriculture, the City of San Fernando is still affected by the drought, primarily due to reduced reliability of imported water.

To date, Californians have reduced water use by about 25 percent since emergency conservation regulations took effect in June 2015. This continues to meet Governor Brown's 25 percent mandate (despite a decline in the statewide water-savings rate for the last two months).



Figure 5.3: MWD's 800,000 AF Reservoir: Diamond Valley Lake

5.4 REGIONAL SUPPLY RELIABILITY

As a result of continued challenges to its water supplies, MWD understands the importance of reliable water supplies. MWD strives to meet the water needs of Southern California by developing new projects to increase the capacity of its supplies while encouraging its member agencies to develop local supply project to meet the needs of its customers. Also, MWD is committed to developing and maintaining high-capacity storage reservoirs, such as Diamond Valley Lake, to meet the needs of the region during times of drought and emergency.

MWD operates Diamond Valley Lake, an 800,000 AF reservoir (pictured in **Figure 5.3**), to avoid the repercussions of reduced supplies from the SWP and CRA. In addition, MWD operates several additional storage reservoirs in Riverside, San Bernardino, and San Diego Counties to store water obtained

from the SWP and the CRA. Storage reservoirs like these are a key component of MWD's supply capability and are crucial to MWD's ability to meet projected demand without having to implement the Water Supply Allocation Plan (WSAP). This is crucial since the SWP and CRA have become more restricted, which could render the City's supplies more vulnerable to shortage.

5.4.1 Colorado River Aqueduct Reliability

Water supply from the CRA continues to be a critical issue for Southern California as MWD competes with several agricultural water agencies in California for unused water rights to the Colorado River. Although California's allocation has been established at 4.4 MAF per year, MWD's allotment stands at 550,000 AFY with additional amounts increasing MWD's allotment to 842,000 AFY if there is any unused water from the agricultural agencies.

MWD recognizes that competition from other states and other agencies within California has decreased the CRA's supply reliability. In 2003, the Quantification Settlement Agreement (QSA) was signed, which facilitated the transfer of water from agricultural agencies to urban uses. This historic agreement provides California the means to implement transfers and supply programs that will allow California to live within the State's 4.4 MAF basic annual apportionment of Colorado River water.

5.4.2 State Water Project Reliability

The reliability of the SWP impacts MWD's member agencies' ability to plan for future growth and supply. DWR's Bulletin 132-14, November 2015, provides certain SWP reliability information, and in July 2015, the DWR Bay-Delta Office prepared a report specifically addressing the reliability of the SWP. This report, The State Water Project Delivery Capability Report, provides information on the reliability of the SWP to deliver water to its contractors assuming historical precipitation patterns.

On an annual basis, each of the 29 SWP contractors, including MWD, request an amount of SWP water based on their anticipated yearly demand. In most cases, MWD's requested supply is equivalent to its full Table A Amount. After receiving the requests, DWR assesses the amount of water supply available based on precipitation, snow pack on northern California watersheds, volume of water in storage, projected carry over storage, and Sacramento-San Joaquin Bay Delta regulatory requirements. For example, the SWP annual delivery of water to contractors has ranged from 1.4 MAF in dry years to almost 4.0 MAF in wet years. Due to the uncertainty in water supply, contractors are not typically guaranteed their full Table A Amount, but instead a percentage of that amount based on the available supply.



Figure 5.4: State Water Project (SWP)

Each December, DWR provides the contractors with their first estimate of allocation for the following year. As conditions develop throughout the year, DWR revises the allocations. Currently, the 2016 is set at 4.2 MAF.

Due to the variability in supply for any given year, it is important to understand the reliability of the SWP to supply a specific amount of water each year to the contractors.

5.4.3 Current Reservoir Levels

Statewide, storage reservoir levels rise and fall due to seasonal climate changes, which induce increase in demand. During periods of drought, reservoir levels can drop significantly and can limit the amount of supplies available. As a result, both DWR and MWD monitor their reservoir levels regularly. In 2014, conditions of several key reservoirs indicated drought conditions. Currently, several reservoir levels are below historical average levels as indicated by **Figures 5.5** and **5.6** on the following pages.

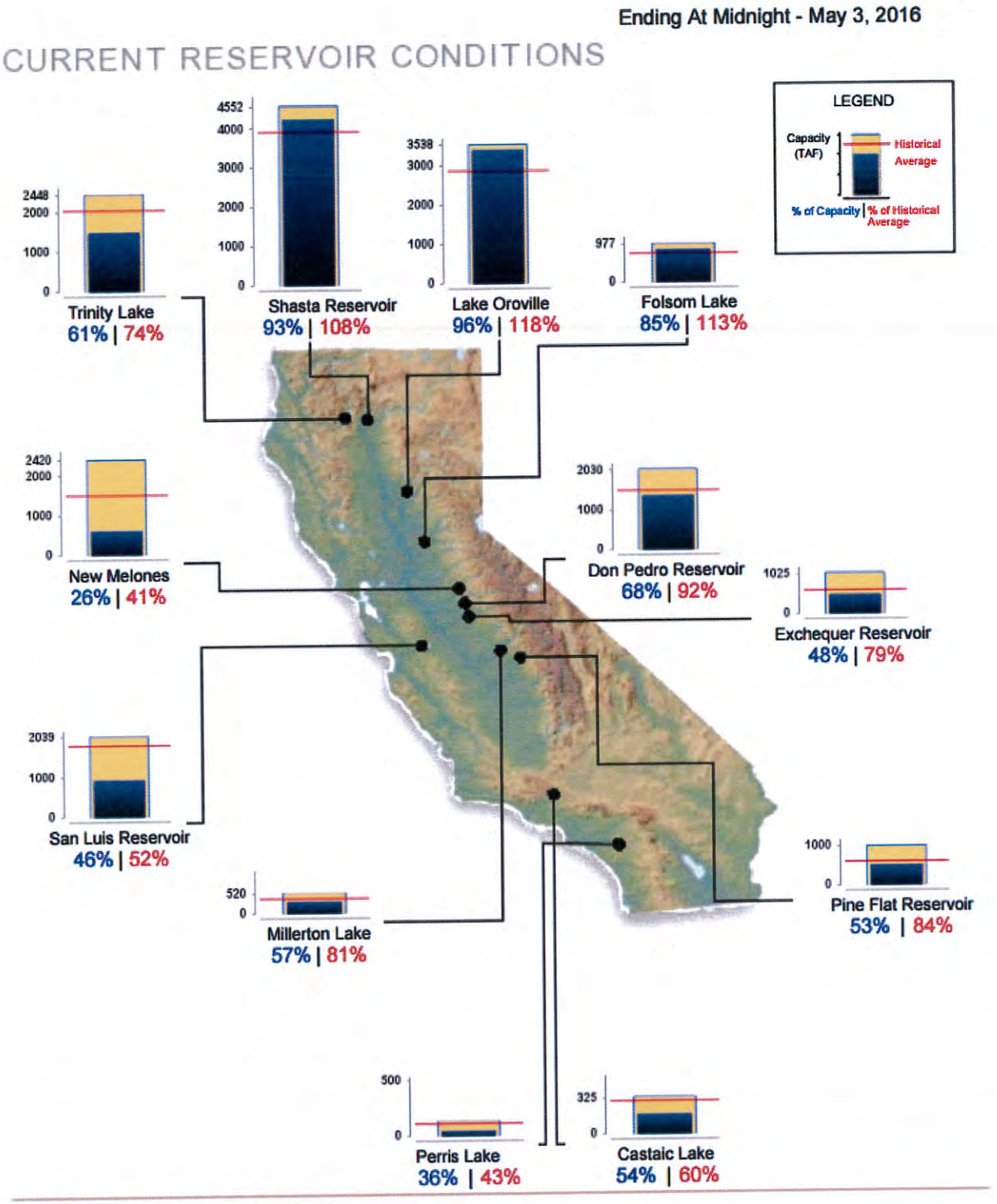


Figure 5.5: California State Reservoir Levels

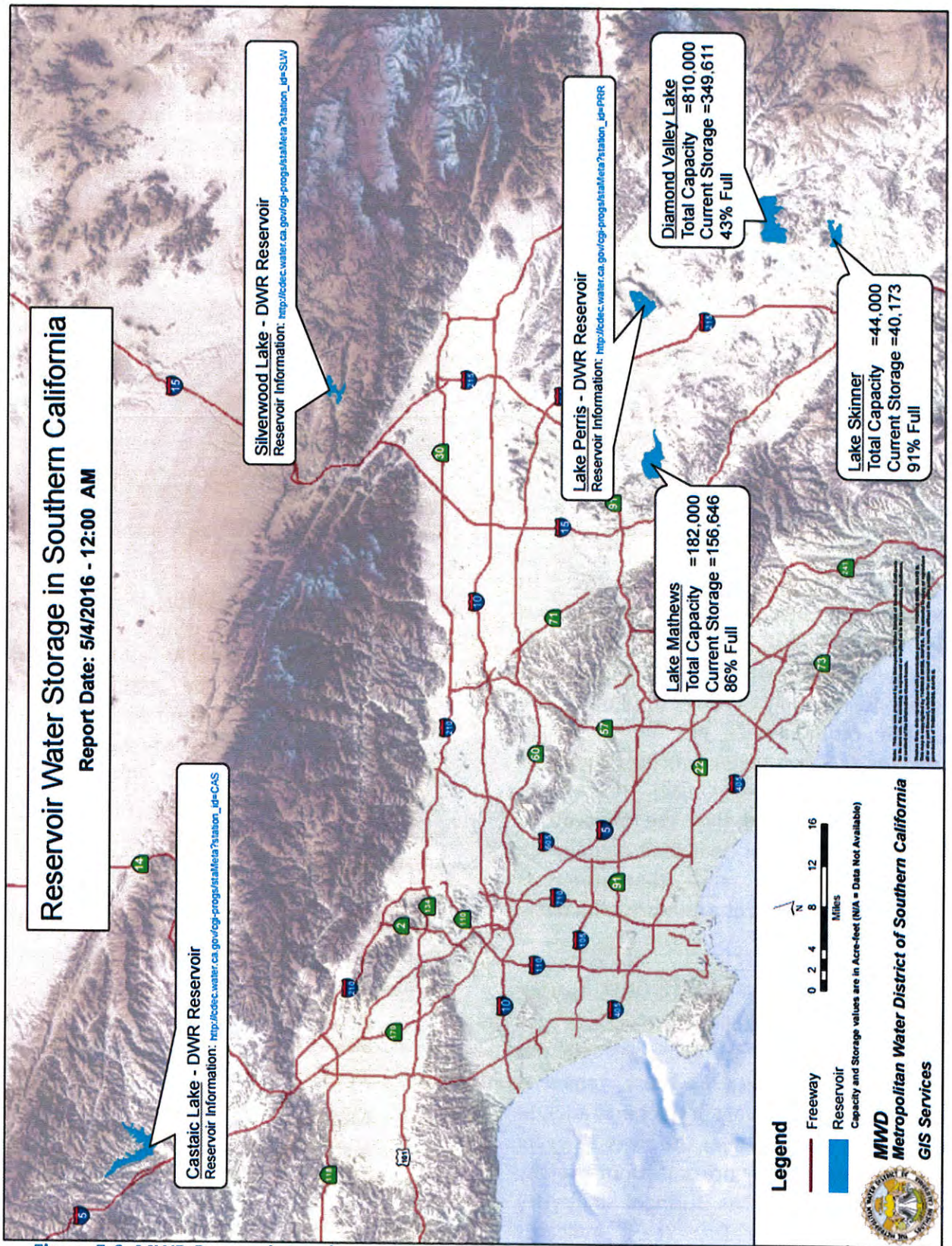


Figure 5.6: MWD Reservoir Levels

5.5 SUPPLY VS. DEMAND

As the City obtains its water sources from local groundwater and imported water the City's water supply reliability is based on the capacity and vulnerability of its infrastructure in addition to the seasonal demand changes brought about by periods of drought. MWD's reliability of supply has direct impact on the City. Population growth will also continue to be a factor in future reliability projections. Since the City is pursuing 100 percent local groundwater sustainability, having continued access to imported water increases the City's supply reliability.

5.5.1 Regional Supply Reliability

Southern California is expected to experience an increase in regional demands in the years 2020 through 2040 as a result of population growth. Although increases in demand are expected, they are limited due to the requirements of SBx7-7, which provides a cap on water consumption rates (i.e. per capita water use). It can be reasonably expected that the majority of agencies will be at or near their compliance targets by 2020 and thereafter as conservation measures are more effectively enforced.

Tables 2.8 – 2.10 of MWD's 2015 UWMP shows supply reliability projections for average and single dry years through the year 2040. The data in these tables is important to effectively project and analyze supply and demand over the next 25 years for many regional agencies. It is noteworthy that Projected Supplies During a Single Dry Year and Multiple Dry Years indicates MWD's projected supply will exceed its projected single dry year and multiple dry year demands in all years. Likewise, for average years, MWD supply exceeds projected demands for all years. The data contained in these tables has an indirect effect on the City's imported supply capacity, and thus this data will also be used to develop the City's projected supply and demand over the next 25 years. **Tables 5.1** and **5.2** show MWD's supply reliability.



Figure 5.7: Reservoir Storage

5.5.2 City Supply Reliability

To project future supply and demand comparisons, it will be assumed that demand will increase annually based on population growth and a constant of 136 GPCD in accordance with SBx7-7 requirements. During times of drought, however, demand will increase at a time when supply will decrease. To project demands during drought periods, the following factors measured from actual demand data from dry years 2012-2014 will be assumed:

- **Single Dry Year Demand Increase**: 118% of Normal
- **Multiple Dry Year Demand Increases (Years 1, 2, & 3)**: 106%, 127%, 122% of Normal

Tables 5.1 – 5.9, shown on the following pages, provide an analysis of MWD and City supply and demand projections.

Table 5.1
MWD Regional Imported Water Supply Reliability Projections
Average and Single Dry Years (AF)

Row	Region Wide Projections	2020	2025	2030	2035	2040
	Supply Information					
A	Projected Supply: Average Year	3,653,000	3,755,000	3,925,000	4,055,000	4,091,000
B	Projected Supply: Dry Year	2,537,000	2,639,000	2,744,000	2,874,000	2,910,000
C = B/A	Projected Dry Yr. / Avg. Yr. Supply (%)	**69.4%**	**70.3%**	**69.9%**	**70.9%**	**71.1%**
	Demand Information					
D	Projected Average Year Demand	1,860,000	1,918,000	1,959,000	2,008,000	2,047,000
E	Projected Dry Year Demand	2,005,000	2,066,000	2,108,000	2,160,000	2,201,000
F = E/D	Projected Dry Year / Avg. Year (%)	**107.8%**	**107.7%**	**107.6%**	**107.6%**	**107.5%**
	Surplus					
G = A-D	Projected Surplus: Average Year	1,793,000	1,837,000	1,966,000	2,047,000	2,044,000
H = B-E	Projected Surplus: Dry Year	532,000	573,000	636,000	714,000	709,000
	Programs Under Development					
I	Projected Capability of Programs (Average Year)	63,000	100,000	343,000	385,000	425,000
J	Projected Capability of Programs (Dry Year)	63,000	100,000	316,000	358,000	398,000
	Potential Surplus					
K=A+I-D	Projected Surplus: Average Year	1,856,000	1,937,000	2,309,000	2,432,000	2,469,000
L=B+J-E	Projected Surplus: Dry Year	532,000	573,000	636,000	714,000	709,000
	Comparisons					
I = A/D	Projected Avg. Yr. Supply/Demand (%)	**196.4%**	**195.8%**	**200.4%**	**201.9%**	**199.9%**
J = A/E	Projected Dry Yr. Supply/Demand (%)	**126.5%**	**127.7%**	**130.2%**	**133.1%**	**132.2%**

Table 5.2
MWD Regional Imported Water Supply Reliability Projections
Average and Multiple Dry Years (AF)

Row	Region Wide Projections	2020	2025	2030	2035	2040
	Supply Information					
A	Projected Supply: Average Year	3,653,000	3,755,000	3,925,000	4,055,000	4,091,000
B	Projected Supply: Multiple Dry Year	2,151,000	2,202,000	2,246,000	2,298,000	2,316,000
C = B/A	Projected Mult. Dry Yr. / Avg. Yr. Supply (%)	**58.9%**	**58.6%**	**57.2%**	**56.7%**	**56.6%**
	Demand Information					
D	Projected Average Year Demand	1,860,000	1,918,000	1,959,000	2,008,000	2,047,000
E	Projected Dry Year Demand	2,001,000	2,118,000	2,171,000	2,216,000	2,258,000
F = E/D	Projected Dry Year / Average Year (%)	**107.6%**	**110.4%**	**110.8%**	**110.4%**	**110.3%**
	Surplus					
G = A-D	Projected Surplus: Average Year	1,793,000	1,837,000	1,966,000	2,047,000	2,044,000
H = B-E	Projected Surplus: Multiple Dry Year	150,000	84,000	75,000	82,000	58,000
	Programs Under Development					
I	Projected Capability of Programs (Average Year)	63,000	100,000	343,000	385,000	425,000
J	Projected Capability of Programs (Multiple Dry Year)	43,000	80,000	204,000	245,000	286,000
	Potential Surplus					
K=A+I-D	Projected Surplus: Average Year	1,856,000	1,937,000	2,309,000	2,432,000	2,469,000
L=B+J-E	Projected Surplus: Multiple Dry Year	150,000	84,000	75,000	82,000	58,000
	Comparisons					
I = A/D	Projected Avg. Yr. Supply/Demand (%)	**196.4%**	**195.8%**	**200.4%**	**201.9%**	**199.9%**
J = A/E	Projected Dry Yr. Supply/Demand (%)	**107.5%**	**104.0%**	**103.5%**	**103.7%**	**102.6%**

Table 5.3
City of San Fernando Water Supply Availability & Demand Projections
Normal Water Year (AF)

Water Sources	2020	2025	2030	2035	2040
Population					
Water Service Area Population	25,003	25,456	25,917	26,387	26,865
Supply					
Imported Water*	3,653	3,755	3,925	4,055	4,091
Groundwater	3,570	3,570	3,570	3,570	3,570
Total Supply	**7,223**	**7,325**	**7,495**	**7,625**	**7,661**
Demand					
Total Normal Demand	**3,809**	**3,878**	**3,948**	**4,020**	**4,093**
% of 2010-2015 Avg. Demand (3,173)	120.0%	122.2%	124.4%	126.7%	129.0%
Supply/Demand Comparison					
Supply/ Demand Difference	3,414	3,447	3,547	3,605	3,568
Supply/Demand (%)	189.6%	188.9%	189.8%	189.7%	187.2%

Table is intended only to show City has the capacity to meet demand for all years per the following*:

1. Total Demand based on 136 GPCD multiplied by population projections shown above.

2. Imported Water Supply represents supply available to City, if needed, based on the City's preferential right of 0.10% multiplied by Table 5.1 Row A.

3. Groundwater Supplies based on the City's 2014-2015 adjudicated groundwater basin pumping right of 3,570 AFY.

**This Table is not intended to be a projection of City's actual groundwater production. City may pump amounts different (above or below) from its adjudicated right of 3,570 AFY based on leases to or from other agencies. The City may also overdraft up to 10% of this amount.*

**This Table is not intended to be a projection of City's actual demand. Demand of 136 GPCD was used based on the SBx7-7 2020 Target set for the City.*

Table 5.4
City of San Fernando Water Supply Availability & Demand Projections
Single Dry Year (AF)

Water Sources	2020	2025	2030	2035	2040
Population					
Water Service Area Population	25,003	25,456	25,917	26,387	26,865
Supply					
Imported Water**	2,151	2,202	2,246	2,298	2,316
Groundwater	3,570	3,570	3,570	3,570	3,570
Total Supply	**5,721**	**5,772**	**5,816**	**5,868**	**5,886**
Normal Year Supply	7,223	7,325	7,495	7,625	7,661
% of Normal Year	79.2%	78.8%	77.6%	77.0%	76.8%
Demand					
Total Dry Demand	4,059	4,132	4,207	4,283	4,361
Normal Year Demand	3,809	3,878	3,948	4,020	4,093
% of Normal Year	106.6%	106.6%	106.6%	106.6%	106.6%
Supply/Demand Comparison					
Supply/Demand Difference	1,662	1,640	1,609	1,585	1,525
Supply/Demand (%)	141.0%	139.7%	138.2%	137.0%	135.0%

Table is intended only to show City will be able to meet demand for all years per the following*:

1. Total Demand based on 136 GPCD multiplied by population projections shown above and by single dry year increase of 118%.

2. All other items derived in similitude to Table 5.3

**See notes below Table 5.3 for explanation of groundwater supply / overall demand.*

Table 5.5
City of San Fernando Water Supply Availability & Demand Projections
Multiple Dry Years (2016-2020) (AF)

Water Sources	2016	2017	2018	2019	2020
Population					
Water Service Area Population	24,646	24,735	24,824	24,913	25,003
Supply					
	Normal Years		**Multiple Dry Years**		
Imported Water	3,570	3,591	2,135	2,143	2,151
Groundwater	3,570	3,570	3,570	3,570	3,570
Total Supply	**7,140**	**7,161**	**5,705**	**5,713**	**5,721**
Normal Year Supply	7,140	7,161	7,181	7,202	7,223
% of Normal Year	100.0%	100.0%	79.4%	79.3%	79.2%
Demand					
	Normal Years		**Multiple Dry Years**		
Total Demand	**3,755**	**3,768**	**4,021**	**4,129**	**3,983**
Normal Year Demand	3,755	3,768	3,782	3,795	3,809
% of Normal Year	100.0%	100.0%	106.3%	108.8%	104.6%
Supply/Demand Comparison					
	Normal Years		**Multiple Dry Years**		
Supply/Demand Difference	3,385	3,392	1,684	1,584	1,738
Supply/Demand (%)	190.2%	190.0%	141.9%	138.4%	143.6%

Table is intended only to show City will be able to meet demand for all years per the following*:

1. Total Demand based on 136 GPCD multiplied by population projections shown above and by multiple dry year increases of 106%, 127%, and 122%.

2. All other items derived in similitude to Table 5.3.
**See notes below Table 5.3 for explanation of groundwater supply / overall demand.*

Table 5.6
City of San Fernando Water Supply Availability & Demand Projections
Multiple Dry Years (2021-2025) (AF)

Water Sources	2021	2022	2023	2024	2025
Population					
Water Service Area Population	25,093	25,183	25,274	25,365	25,456
Supply					
	Normal Years		**Multiple Dry Years**		
Imported Water	3,673	3,694	2,182	2,192	2,202
Groundwater	3,570	3,570	3,570	3,570	3,570
Total Supply	**7,243**	**7,264**	**5,752**	**5,762**	**5,772**
Normal Year Supply	7,243	7,264	7,285	7,305	7,325
% of Normal Year	100.0%	100.0%	79.0%	78.9%	78.8%
Demand					
	Normal Years		**Multiple Dry Years**		
Total Demand	**3,823**	**3,836**	**4,094**	**4,203**	**4,055**
Normal Year Demand	3,823	3,836	3,850	3,864	3,878
% of Normal Year	100.0%	100.0%	106.3%	108.8%	104.6%
Supply/Demand Comparison					
	Normal Years		**Multiple Dry Years**		
Supply/Demand Difference	3,421	3,428	1,658	1,559	1,717
Supply/Demand (%)	189.5%	189.3%	140.5%	137.1%	142.3%

Table is intended only to show City will be able to meet demand for all years per the following*:

1. Total Demand based on 136 GPCD multiplied by population projections shown above and by multiple dry year increases of 106%, 127%, and 122%.

2. All other items derived in similitude to Table 5.3.
**See notes below Table 5.3 for explanation of groundwater supply / overall demand.*

Table 5.7
City of San Fernando Water Supply Availability & Demand Projections
Multiple Dry Years (2026-2030) (AF)

Water Sources	2026	2027	2028	2029	2030
Population					
Water Service Area Population	25,548	25,640	25,732	25,824	25,917
Supply					
	Normal Years		**Multiple Dry Years**		
Imported Water	3,789	3,823	2,229	2,237	2,246
Groundwater	3,570	3,570	3,570	3,570	3,570
Total Supply	**7,359**	**7,393**	**5,799**	**5,807**	**5,816**
Normal Year Supply	7,359	7,393	7,428	7,463	7,495
% of Normal Year	100.0%	100.0%	78.1%	77.8%	77.6%
Demand					
	Normal Years		**Multiple Dry Years**		
Total Demand	**3,892**	**3,906**	**4,168**	**4,280**	**4,129**
Normal Year Demand	3,892	3,906	3,920	3,934	3,948
% of Normal Year	100.0%	100.0%	106.3%	108.8%	104.6%
Supply/Demand Comparison					
	Normal Years		**Multiple Dry Years**		
Supply/Demand Difference	3,467	3,487	1,631	1,528	1,687
Supply/Demand (%)	189.1%	189.3%	139.1%	135.7%	140.9%

Table is intended only to show City will be able to meet demand for all years per the following*:

1. Total Demand based on 136 GPCD multiplied by population projections shown above and by multiple dry year increases of 106%, 127%, and 122%.

2. All other items derived in similitude to Table 5.3.
**See notes below Table 5.3 for explanation of groundwater supply / overall demand.*

Table 5.8
City of San Fernando Water Supply Availability & Demand Projections
Multiple Dry Years (2031-2035) (AF)

Water Sources	2031	2032	2033	2034	2035
Population					
Water Service Area Population	26,011	26,104	26,198	26,292	26,387
Supply					
	Normal Years		**Multiple Dry Years**		
Imported Water	3,951	3,977	2,277	2,288	2,298
Groundwater	3,570	3,570	3,570	3,570	3,570
Total Supply	**7,521**	**7,547**	**5,847**	**5,858**	**5,868**
Normal Year Supply	7,521	7,547	7,574	7,600	7,625
% of Normal Year	100.0%	100.0%	77.2%	77.1%	77.0%
Demand					
	Normal Years		**Multiple Dry Years**		
Total Demand	**3,962**	**3,977**	**4,243**	**4,357**	**4,203**
Normal Year Demand	3,962	3,977	3,991	4,005	4,020
% of Normal Year	100.0%	100.0%	106.3%	108.8%	104.6%
Supply/Demand Comparison					
	Normal Years		**Multiple Dry Years**		
Supply/Demand Difference	3,559	3,570	1,604	1,501	1,665
Supply/Demand (%)	189.8%	189.8%	137.8%	134.4%	139.6%

Table is intended only to show City will be able to meet demand for all years per the following*:

1. Total Demand based on 136 GPCD multiplied by population projections shown above and by multiple dry year increases of 106%, 127%, and 122%.

2. All other items derived in similitude to Table 5.3.
**See notes below Table 5.3 for explanation of groundwater supply / overall demand.*

Table 5.9
City of San Fernando Water Supply Availability & Demand Projections
Multiple Dry Years (2036-2040) (AF)

Water Sources	2036	2037	2038	2039	2040
Population					
Water Service Area Population	26,482	26,577	26,673	26,769	26,865
Supply					
	Normal Years		**Multiple Dry Years**		
Imported Water	4,062	4,069	2,309	2,312	2,316
Groundwater	3,570	3,570	3,570	3,570	3,570
Total Supply	**7,632**	**7,639**	**5,879**	**5,882**	**5,886**
Normal Year Supply	7,632	7,639	7,647	7,654	7,661
% of Normal Year	100.0%	100.0%	76.9%	76.9%	76.8%
Demand					
	Normal Years		**Multiple Dry Years**		
Total Demand	**4,034**	**4,049**	**4,320**	**4,436**	**4,280**
Normal Year Demand	4,034	4,049	4,063	4,078	4,093
% of Normal Year	100.0%	100.0%	106.3%	108.8%	104.6%
Supply/Demand Comparison					
	Normal Years		**Multiple Dry Years**		
Supply/Demand Difference	3,598	3,591	1,558	1,446	1,606
Supply/Demand (%)	189.2%	188.7%	136.1%	132.6%	137.5%

Table is intended only to show City will be able to meet demand for all years per the following*:

1. Total Demand based on 136 GPCD multiplied by population projections shown above and by multiple dry year increases of 106%, 127%, and 122%.

2. All other items derived in similitude to Table 5.3.
**See notes below Table 5.3 for explanation of groundwater supply / overall demand.*

Based on the data contained in **Tables 5.3 - 5.9**, the City can expect to meet future demands through 2040 for all climatologic classifications. Projected groundwater supply capacities are not expected to be significantly affected during times of low rainfall and over short term dry periods of up to three years; however, during prolonged periods of drought, the City's imported water supply capacities may potentially be reduced significantly due to reductions in MWD's storage reservoirs resulting from increases in regional demand.

5.6 VULNERABILITY OF SUPPLY

Due to the semi-arid nature of the City's climate and as a result of past drought conditions, the City is vulnerable to water shortages due to its climatic environment and seasonally hot summer months. While the data shown in **Tables 5.3** through **5.9** identifies water availability during single and multiple dry year scenarios, response to a future drought would follow the water use efficiency mandates of the City's Water Conservation Plan (Ordinance No. 1638, see **Appendix G**) along with implementation of the appropriate stage of regional plans, such as the WSDM Plan (MWD). These programs are discussed in **Section 7**.

5.7 WATER SUPPLY OPPORTUNITIES

5.7.1 City Projects

The City continually reviews practices that will provide its customers with adequate and reliable supplies. Currently, the City is nearing completion of an ion exchange treatment plant for Well No. 7A, in order to mitigate high nitrate levels, found in the well. A similar treatment plant for Well No. 3 is in the planning stages, with construction expected to begin sometime after the completion of Well No. 7A's plant. In addition, renovations for Reservoir #4 are planned in the future, after Well. No. 3's project is complete, and as soon as funding allows.

In general, the City is always looking into possibilities for upgrades to its distribution infrastructure in order to ensure a reliable supply and to prevent system losses.

5.7.2 Regional Projects (MWD)

MWD is implementing water supply alternative strategies for the region and on behalf of member agencies to ensure available water in the future. Some of these strategies include:

- Conservation
- Water recycling & groundwater recovery
- Storage/groundwater management programs within the region
- Storage programs related to SWP and CRA
- Other water supply management programs outside of the region

MWD has made investments in conservation and supply augmentation as part of its long-term water management strategy. MWD's approach to a long-term water management strategy was to develop an Integrated Resource Plan (IRP) to include many supply sources. A brief description of the various programs implemented by MWD to improve reliability is included in **Table 5.10** on the following page.

Table 5.10
MWD IRP Regional Resources Status

Supply	Description	
Colorado River Aqueduct (CRA)	MWD holds a basic apportionment of Colorado River water and has priority for an additional amount depending on availability of surplus supplies. Water management programs supplement these apportionments.	
State Water Project (SWP)	MWD receives water delivered under State Water Contract provisions, including Table A contract supplies, use of carryover storage in San Luis Reservoir, and Article 21 interruptible supplies.	
Conservation	MWD and the member agencies sponsor numerous conservation programs in the region that involve research and development, incentives, and consumer behavior modification.	
	Code-Based Conservation	Water savings resulting from plumbing codes and other institutionalized water efficiency measures.
	Active Conservation	Water saved as a direct result of programs and practices directly funded by a water utility, e.g., measures outlined by the CUWCC BMPs. Water savings from active conservation completed through 2008 will decline to zero as the lifetime of those devices is reached. This will be offset by an increase in water savings for those devices that are mandated by law, plumbing codes or other efficiency standards.
	Price Effect Conservation	Reductions in customer use attributable to changes in the real (inflation adjusted) cost of water.
Local Resources	*Groundwater*	Member-agency produced groundwater from the groundwater basins within the service area.
	Groundwater Recovery	Locally developed and operated, groundwater recovery projects treat contaminated groundwater to meet potable use standards. MWD offers financial incentives to local and member agencies through its Local Resources Program for recycled water and groundwater recovery. Details of the local resources programs are provided in Appendix 5.
	Los Angeles Aqueduct (LAA)	A major source of imported water is conveyed from the Owens Valley via the LAA by Los Angeles Department of Water and Power (LADWP). Although LADWP imports water from outside of MWD's service area, MWD classifies water provided by the LAA as a local resource because it is developed and controlled by a local agency.
	Recycling	Recycled water projects recycle wastewater for M&I use.
	Surface Water	Surface water used by member agencies comes from stream diversions and rainwater captured in reservoirs.
Groundwater Conjunctive Use Storage Programs	MWD sponsors various groundwater storage programs, including, cyclic storage programs, long-term replenishment storage programs, and contractual conjunctive use programs. Details of the groundwater storage programs are provided in Appendix 4.	
Surface Water Storage	MWD reservoirs (Diamond Valley Lake, Lake Mathews, Lake Skinner) and flexible storage in DWR reservoirs (Castaic Lake, Lake Perris). Details of the surface storage reservoirs are provided in Appendix 4.	
Central Valley Storage & Transfers	Central Valley storage programs consist of partnerships with Central Valley water districts to allow MWD to store SWP supplies in wetter years for return in drier years. MWD's Central Valley transfer programs consist of partnerships with Central Valley Project and SWP settlement contractors to allow MWD to purchase water in drier years. Details of the Central Valley Storage and Transfer programs are provided in Appendix 3.	

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SECTION 6:
CONSERVATION MEASURES



SECTION 6: CONSERVATION MEASURES

6.1 INTRODUCTION

As a result of diminished existing supplies and difficulty in developing new supplies, water conservation is important to Southern California's sustainability. Therefore, the City acknowledges that efficient water use is the foundation of its current and future water planning and operations policies. The City implements water conservation through a combination of programs, resources, and policies.



Figure 6.1: Water Waste Is Prohibited by City Code

To conserve California's water resources, several public water agencies and other interested parties of the California Urban Water Conservation Council (CUWCC) drafted the Memorandum of Understanding Regarding Urban Water Conservation (MOU) in 1991. The MOU establishes 14 Best Management Practices (BMPs) which are defined roughly as policies, programs, practices, rules, regulations, or ordinances that result in the more efficient use or conservation of water.

6.1.1 Updates to BMPs for 2015 UWMPs

In previous years, the 14 CUWCC BMPs coincided with the 14 Demand Management Measures (DMMs) defined in the UWMP Act. The DMMS are intended to reduce long-term urban demands from what they would have been without their implementation. The DMMs are in addition to programs which may be instituted during occasional water supply shortages.

For 2015 UWMPs, DWR has refined the list to 7 DMMs required to be reported in the 2015 UWMPs.

- ***DMM 1:*** *Water Waste Prohibition Ordinances*
- ***DMM 2:*** *Metering*
- ***DMM 3:*** *Conservation Pricing*
- ***DMM 4:*** *Public Education & Outreach*
- ***DMM 5:*** *Programs to Assess and Manage Distribution System Real Loss*
- ***DMM 6:*** *Water Conservation Program Coordination and Staffing Support*
- ***DMM 7:*** *Other Demand Management Measures (that have a significant impact on water use as measured in GPCD, including innovative measures, if implemented)*

As with previous UWMPs, agencies that are members of the CUWCC can submit the annual reports in lieu of proving details on the agency's DMMs. That is, in lieu of providing a description of each DMM, agencies can provide data on recent implementation and provide plans for future implantation.

6.2 CUWCC MEMBERSHIP

In 1994, the City became a signatory of the CUWCC by signing the MOU and has expedited implementation of water conservation measures. The City actively implements all five of the measures with good faith effort by achieving and maintaining the staffing, funding, and in general, the priority levels necessary to achieve the level of activity called for in each BMP's definition as described in the MOU. Water conservation is an integral part of the City's water policies.

As a member of CUWCC, the City is required to submit bi-annual reports to the CUWCC that document the implementation of each BMP.

6.2.1 Updates to CUWCC BMPs

As with the DMMs, the CUWCC BMPs have changed for CUWCC members. The BMPs for CUWCC members are now listed as:

- ***BMP 1**: Utility Operations*
- ***BMP 2**: Public Education & Outreach*
- ***BMP 3**: Residential Programs*
- ***BMP 4**: Commercial, Institutional, and Industrial Programs*
- ***BMP 5**: Landscape Programs*

6.3 CONSERVATION MEASURES

As signatory to the CUWCC MOU, the City has committed to use good-faith efforts to implement all applicable BMPs. In addition, the City has continued to work with the Metropolitan Water District (MWD) to increase the effectiveness of its DMM programs and educate people on the importance of water conservation.

Overall, the City's conservation efforts as a member of CUWCC have led to efficient water use. To this end, the City established a Water Conservation Program, which was adopted by the City Council in October 2014 as Ordinance No. 1638 (see **Appendix G**), originally derived from the Code of 1957. To this day, the City is continuously working with MWD towards implementing the BMPs through means of various conservation measures.

Table 6.1 on the following page provides a status overview of the City's Conservation Measures. It also includes the list of DMMs

Table 6.1: List of Current BMPs (for CUWCC Members) Relative to Current and Previous DMMs

2015 DMM No.	Description	Current 2015 DMM No.	Previous 2010 DMM No.
BMP No. 1: Utility Operations	*Deals with water waste prohibitions, water efficiency ordinances, metering, conservation pricing, and other items related to managing water use*	1, 2, 3, 5, 6	3, 4, 11, 12, 13
BMP No. 2: Public Education & Outreach	*Deals with outreach efforts including emails, newsletters, advertisements, presentations, promotions, etc. related to outreach & education*	4	7, 8
BMP No. 3: Residential Programs	*Deals with showerheads, faucets, toilets, and leak detection surveys related to residential water use and rebates for water conserving fixtures*	6, 7	1, 2, 6, 10, 14
BMP No. 4: Commercial, Institutional, & Industrial Programs	*Deals with toilets, urinals, steamers, cooling towers, food/restaurant equipment, medical equipment, and items related to commercial, institutional, and industrial water use*	6, 7	2, 6, 9, 10
BMP No. 5: Landscape Programs	*Deals with establishing parameters for large landscapes, including measurements, budgets, audits, prohibitions, incentives, etc., related to large landscapes*	6, 7	5, 10

6.3.1 BMP 1: Utility Operations (Now Corresponds with DMMs 1, 2, 3, 5, & 6)

This City BMP deals with water waste prohibitions, water efficiency ordinances, metering, conservation pricing, and other items related to managing water use.

Water Waste Prohibition Ordinance

Under City Ordinance No. 1638 (Section 4 – Water Conservation, 10-20-2014), "No person shall cause or permit water under his or her control to be wasted." A number of additional prohibition ordinances are summarized in **Section 7** with the complete list found in **Appendix G**.



Figure 6.2: Water Waste

Additionally, MWD supports its member agencies and cities to adopt ordinances that will reduce wasting water.

Metering

All of the City water accounts are metered and billed according to commodity rates and meter consumption. In addition, the City encourages the installation of dedicated landscape meters, which allows the City to recommend the appropriate irrigation schedules through future landscape programs. Meter calibration and periodic replacement insures that customers are paying for all of the water they consume, and therefore encourages conservation.

Metering allows the City to conserve a total of 20 to 30 percent of the water demand overall and up to 40 percent savings during peak demand periods as estimated by the CUWCC's BMP Costs and Savings Study. The measure of effectiveness will include a comparison of water use before and after meter calibration.



Figure 6.3: Water Meter

Conservation Pricing

The City's water rate structure consists of two components: a commodity charge and a fixed service charge. The fixed service charge is a fixed monthly charge, included in each customer's water bill that is based on the size of the customer's connection. As the service size increases, so does the amount of the service charge. The monthly service charge applies to domestic, commercial, agriculture, and municipal users, and was set to increase incrementally every year from years 2013 - 2017.

In addition to the fixed service charge, The City utilizes a three-tier water commodity charge rate structure to provide financial incentives for residential customers that conserve water. Residential customers who consume 0 – 9 hundred cubic feet (ccf) are charged at the Block 1 Rate (the lowest rate). While those who consume 10 – 18 ccf are charged at the Block 2 Rate, which is more than double the Block 1 Rate. Finally, those who consume 18+ ccf are charged at the highest rate: Block 3 Rate.

The measure of effectiveness of the rate structure in terms of acting as a catalyst for water conservation will be assessed based on decreases in the total amount of consumption since the charges are based on total consumption rates.

Programs to Assess and Manage Distribution System Real Loss

The City's surveillance of its water system to detect leaks is an on-going operation. The City recognizes the urgency of repairing leaks and responds to any leak in an expedient manner. Field employees are trained in detection of leaks and signs of unauthorized uses of water. In addition, the customer billing system flags high or unusual water bills, which are then investigated for possible leaks in customer piping. When a leak is first noticed, the pipeline is inspected and promptly repaired.

The City's system inspection and field reviews are triggered when pressure losses are experienced within the same locations of the distribution line.



Figure 6.4: Leak Detection

To evaluate the effectiveness of these conservation measures, staff will review the data records to confirm that the unaccounted-for water losses remain low and consistent.

Water Conservation Program Coordination and Staffing Support



Figure 6.5: The City's Water Department Staff

The City's Public Works (Water) Superintendent serves as the City's Conservation Coordinator for the water service area. Currently, the role of the Public Works Superintendent entails consistent water, street, and tree code enforcement, and as a result, regular communication with customers is provided. In addition, responsibilities of the Public Works Superintendent include conservation coordinator duties.

6.3.2 BMP 2: Public Education & Outreach (Now Corresponds with DMM 4)

This CUWCC BMP deals with outreach efforts including emails, newsletters, advertisements, presentations, promotions, etc., related to outreach & education.

The City's Water Department Staff actively provides the community with educational opportunities through public events outreach.

School Programs

The City provides school education programs through MWD's Education Unit for teachers and students from pre-Kindergarten through college. These programs help to promote water conservation and awareness.



Figure 6.6 School Programs Promote Water Awareness

In 2014 and 2015 during a National Public Works Week event, the City coordinated with after-school programs which bussed in approximately 200 school children. The City's Water Department set up a booth where staff explained the origins of water,

the importance of water conservation, and also passed out literature such as activity books, coloring books, and posters.



Figure 6.7 Public Outreach during Public Works Day

"Water is Life" Art Contest

Each year in the spring MWD sponsors an annual art contest that encourages youth to express the value of water through their artwork. Students in grades K-12 submit artwork through participating Member and Retail Agencies by March every year. This is a great way for students to remind us through art to consider how we use water today and whether there will be water available for the future.



Figure 6.8: "Water is Life" Art

MWD's World Water Forum

Ten years ago, in 2006, the "International Decade of Fresh Water" was proclaimed by the United Nations to raise awareness about global water issues. To underscore the importance of water quality and conservation issues, MWD partnered with the U.S. Bureau of Reclamation – U.S. Dept. of the Interior, Friends of the United Nations, Sanitation Districts of Los Angeles County and Water for People to create a grant competition for local colleges and universities that would promote new water conservation technologies and policies or communications programs. The Forum also helps to generate student interest in engineering, environmental science and related careers in the water industry, promoting economic and workforce development in Southern California.

MWD's Community Partnering Program

As a city member, the City of San Fernando is able to participate in MWD's Community Partnering Program. MWD created the Community Partnering Program in 1999. It provides sponsorships for community-based organizations including nonprofit groups, professional associations, educational institutions and public agencies.

Applications should promote discussion and educational activities for regional water conservation and water-use efficiency issues. MWD provides support for community water awareness programs, water-related education outreach programs, and public policy water conferences.

6.3.3 BMP 3: Residential Programs (Now Corresponds with DMMs 6 & 7)

This CUWCC BMP deals with showerheads, faucets, toilets, and leak detection surveys related to residential water use.

Water Survey Assistance

As a member city of MWD, the City receives funding for residential survey devices through MWD.



Figure 6.9: Residential Water Survey

The City also responds to customer inquiries to high water bills that prompt informal water surveys to be completed by trained City water staff. A high water bill triggers the City to inspect the accuracy of the water meter, conduct a flow test, and then suggest possible sources of water leaks or excessive water use.

Based on the CUWCC's savings rates set forth in the BMP Costs & Savings Study, savings from untargeted intensive home surveys results in an average of 21 gallons per day (gpd) per household (both single family and multi-family) total savings for future projections. This rate allows for the calculation of estimated total water savings that result from completion of residential water surveys. For the City, 21 gallons per household provides significant returns in their water conservation efforts.

The City will measure the effectiveness of water survey programs through analyzing the number of surveys distributed and the difference in water consumption for the families after the surveys are conducted.

Other Residential Programs from MWD

The City also participates in various MWD programs aimed at increasing landscape water use efficiency for residential customers, including rebate programs that provide financial incentives. SoCal Water$mart, formerly Save Water Save-A-Buck, is the conservation rebate program offered through MWD. The program offers rebates for high-efficiency clothes washers (HECW), premium high-efficiency toilets (PHET), weather-based irrigation controllers (WBIC), soil moisture sensor system (SMSS), rotating sprinkler nozzles, rain barrels/cisterns, and turf removal, as described below.

- ***Weather-Based Irrigation Controllers (WBIC) Program*** – This program, previously called the "Smart Timer Rebate Program," started in FY 2004/05. Under this regional program, residential and small commercial properties are eligible for a rebate when they purchase and install a weather-based irrigation controller, which has the potential to save 13,500 gallons a year per residence. Rebates start at $80 per controller for landscapes less than 1 acre in area and $35 per station for more than 1 acre.

- ***Rotating Nozzle Rebate Program*** – This rebate program started in 2007 and is offered to both residential and commercial customers. Through this program, site owners will purchase and install rotary nozzles, which can use up to 20 percent less water than conventional fan spray nozzles, in existing irrigation systems. These sprinklers reduce runoff onto sidewalks

and into local storm drain system and provide uniform water distribution onto the landscape. MWD offers $2 per nozzle with a minimum of 30 nozzles.

- ***Rain Barrels & Cisterns Program*** – Residential and commercial customers can receive rebates for installing rain barrels and/or cisterns to collect rainwater for re-use for watering their landscapes. Customers may receive rebates starting at $75 per barrel or $300 per cistern. The barrels and cisterns must adhere to specified design guidelines.



Figure 6.10: Rain Barrel

- ***Soil Moisture Sensor System Program*** – For large residential sites, a soil moisture sensor, which measures soil moisture content in the active root zone, can be installed to receive rebates starting at $80 or $35 per SMSS. The sensor must be connected to a compatible irrigation system controller.

- ***Turf Removal Program*** – Through this program, residential and small commercial customers of participating retail water agencies are eligible to receive a minimum of $2 per square foot of turf removed for qualifying projects. Currently, Turf Removal incentives are no longer being offered throughout the MWD region due to high popularity that led to the exhaustion of funds.

Residential Plumbing Retrofit

The City offers rebates through MWD's SoCal Water$mart program for high-efficiency clothes washers (HECWs) and premium high-efficiency toilets (PHETs) that use less than 1.1 gpf. Through this program, water-wasting plumbing fixtures are replaced with highly efficient ones with a rebate incentive for qualifying models.

6.2.4 BMP 4: Commercial, Institutional, & Industrial Programs (Now Corresponds with DMMs 6 & 7)

The City of San Fernando has a relatively small number of commercial, industrial, and institutional (CII) accounts. However, the City still offers financial incentives under MWD's SoCal Water$mart Program, which offers rebates for various water efficient devices to qualifying CII customers.

SoCal Water$mart – MWD launched this program on July 1, 2008 and offers rebates to assist CII customers in replacing high-flow plumbing fixtures with low-flow fixtures. Rebates are available only on those devices listed in **Table 6-2** on the following page. Installation of devices is the responsibility of each participant. Participants may purchase and install as many of the water saving devices as are applicable to their site.

Table 6.2: SoCal Water $mart Program Rebates

Retrofit Device	Rebate Amount
High Efficiency Toilet	$40
Ultra-Low-Water or Zero Water Urinal	$200
Connectionless Food Steamers	$485 per compartment
Air-Cooled Ice Machines	$1,000
Cooling Tower Conductivity Controller	$625
pH / Conductivity Controller	$1,750
Dry Vacuum Pumps	$125 per 0.5 HP
Weather Based Irrigation Controller and Computer Irrigation Controller	$35 per station
Rotating Nozzles for Pop-up Spray Head Retrofits	$2 (minimum of 30 per rebate)
Large Rotary Nozzles	$13 per set

6.3.5 BMP 5: Landscape Programs (Now Corresponds with DMMs 6 & 7)

The City supports large landscape conservation through MWD's regional programs including:

SoCal Water$mart Program – The City, through MWD, also offers rebates through SoCal Water$mart program for landscape plumbing retrofitting. Landscape rebates are available for Weather- Based Irrigation Controllers (WBIC), Soil Moisture Sensor System Program (SMSS), rotating sprinkler nozzles, and turf removal. The available landscape programs are described in detail in **Section 6.3.3** and listed below:

- WBIC Program
- SMSS Program
- Rotating Nozzle Rebate Program
- Rain Barrels & Cisterns Program
- Turf Removal Programs

6.4 REBATE PROGRAM PARTICIPATION

Over the past six years (2010-2015), the City has found success in offering rebates through MWD's SoCal Water$mart program. Since the beginning of 2010, there have been 129 HETs, 53 HECWs, 22 turf removals, 6 WBICs, and 3 rain barrels that have qualified and received rebates through the rebate program.

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SECTION 7:
CONTINGENCY PLANNING



SECTION 7: CONTINGENCY PLANNING

7.1 INTRODUCTION

Water supplies may be interrupted or reduced significantly in a number of ways including droughts, earthquakes, and power outages, which can hinder a water agency's ability to effectively delivery water. Drought impacts increase with the length of a drought as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline. The ability to manage water supplies in times of drought or other emergencies is an important part of water resources management for a community. Although the majority of the City's water supply is produced locally, response to an emergency will be a coordinated effort between its own staff and other local and regional water agencies.

During water shortage emergencies, the City will implement its Water Conservation Ordinance. The purpose of the ordinance is to reduce the effect of shortage water supplies on the City's customers during water shortage emergencies. In compliance with the Water Code requirements, this plan imposes up to a 50 percent mandatory reduction in the total water supply. The City will also coordinate with MWD to implement water shortage plans on a regional level.

7.2 CITY RESPONSE PLAN

The City has implemented a water conservation program to reduce water demands since the drought period of the early 1990s. On October 20, 2014, the San Fernando City Council adopted a new revised version Water Conservation Ordinance (Ordinance No. 1638, see **Appendix G**), which establishes three phases of water shortage severity based on predicted or actual water supply reductions. The City implements certain initiatives to optimize water supply during water shortages or drought conditions. In the event of a water shortage, the director of utilities will declare the appropriate water conservation stage by resolution.

The objectives of the response plan are to:

1. Prioritize essential uses of available water
2. Avoid irretrievable loss of natural resources
3. Manage current water supplies to meet ongoing and future needs
4. Maximize local municipal water supplies
5. Eliminate water waste city-wide
6. Create equitable demand reduction targets
7. Minimize adverse financial effects

The following priorities for uses of available water are listed in order from highest to lowest priority:

1. Health and Safety including: consumption and sanitation for all water users; fire suppression; hospitals, emergency care, nursing/convalescent homes and other similar health care facilities; shelters and water treatment

2. Institutions, including government facilities and schools such as public safety facilities, essential government operations, public pools and recreation areas
3. All non-essential commercial and residential water uses
4. Landscaped areas of significance, including parks, cemeteries, open spaces, government-facility landscaped areas and green belt areas
5. New water demand

7.2.1 Stages of Action

During water shortages, the City has the ability to meet its demands by applying a Phased Water Conservation Plan. This plan imposes phases of mandatory water reduction of water use up to 50 percent and consists of three phases that help reduce water use within the City's system in order to meet a water supply reduction target based on the severity of the drought conditions or supply shortage. The City's two potable water sources are local groundwater and imported deliveries through MWD. Rationing stages may be triggered by a shortage in one source or a combination of sources, and shortages may trigger a stage at any time. **Table 7.1** shows the stages of action of the ordinance:

Table 7.1
Water Shortage Reduction Targets

Shortage Phase	Restriction Type	Water Supply Reduction Target
I	Voluntary	5-10%
II	Mandatory	20%
III	Mandatory	50%

The City of San Fernando's City Council will implement the provisions of the Phased Water Conservation Plan, following a public hearing, upon determination that the projected water shortage and the appropriate measures should be implemented. Any provision requiring curtailment in the use of water shall become effective no sooner than the first billing period commencing on or after the date of publication of the measures adopted.

The type of event that may prompt the City Council to declare a water shortage and implement the Water Conservation Plan includes a drought, a state or local emergency, a natural disaster that critically impacts the supply or water conveyance system, and a localized event that critically impacts the water supply. The water supply can be impacted due to deficient water treatment and/or water quality, and problems with storage, transmission, or the water distribution system. Also, restricted use could be triggered by the City's wholesale water agency requesting extraordinary water conservation efforts in order to avoid mandatory water allocations in accordance with the Water Supply Allocation Plan (WSAP).

7.2.2 MWD WSDM Plan

In addition to the provisions of the City's Conservation Ordinance, the City will also work in conjunction with MWD to implement conservation measures within the framework of MWD's Water Surplus Drought Management (WSDM) Plan. The WSDM Plan was developed in 1999 by MWD with assistance and input with its member agencies. The plan addresses both

surplus and shortage contingencies.

The WSDM Plan guiding principle is to minimize adverse impacts of water shortage and ensure regional reliability. The plan guides the operations of water resources (local resources, Colorado River, SWP, and regional storage) to ensure regional reliability. It identifies the expected sequence of resource management actions MWD will take during surpluses and shortages of water to minimize the probability of severe shortages that require curtailment of full-service demands. Mandatory allocations are avoided to the extent practicable; however, in the event of an extreme shortage, an allocation plan will be implemented in accordance with the principles of the WSAP.



Figure 7.1: Severe Droughts Highlight the Importance of Conservation Ordinances

7.3 THREE-YEAR MINIMUM SUPPLY

Due to the surface and subsurface inflows from the Santa Susana and San Gabriel Mountains and natural percolation, the Sylmar Basin has moderate dry season groundwater supply protection. Additionally, due to the stipulations of the Sylmar Judgment, the City may extract up to 10% in excess of its adjudicated right of 3,570 AFY. If the City leases additional groundwater from the City of Los Angeles, this will result in even greater supply reliability benefits during dry seasons that may occur during the course of the City's lease. Furthermore, since the City will continue to have access to imported water, the City may import water to meet demand, if necessary.

Imported water supplies, like groundwater, are subject to demand increases and

reduced supplies during dry years; however, MWD modeling in its 2015 UWMP, as referenced in **Tables 5.1 – 5.9** in **Section 5**, results in 100 percent reliability for full-service demands through the year 2040 for all climatic conditions. Based on the conditions described above, the City anticipates the ability to meet water demand for all climatic conditions for the near future. **Table 7.2** displays the minimum water supply available to the City based on a three-year dry period for the next three years:

Table 7.2
Projected 3-yr Minimum Water Supply (AF)

Source	Supply (AF) 2016	Supply (AF) 2017	Supply (AF) 2018
Imported	2,151	2,151	2,151
Groundwater	3,570	3,570	3,570
Total	**5,721**	**5,721**	**5,721**

Based on the above analysis, the City should expect 100 percent supply reliability during a three-year drought period over the next three years.

7.4 CATASTROPHIC INTERRUPTIONS

A water shortage emergency could be caused by a catastrophic event such as result of drought, failures of transmission facilities, a regional power outage, earthquake, flooding, supply contamination from chemical spills, and other adverse conditions.

The City of San Fernando has an Emergency Operations Center that can be activated in times of local and regional emergencies. The City is also a part of the Member Agency Response System (MARS), a radio communication system developed by MWD, which allows the City to contact other water member agencies during an emergency or disaster for assistance. In addition, the City maintains its equipment and vehicles in good repair in preparation for responding to emergency conditions. The water system is designed with redundant features in its production, storage and distribution systems, and it has been recently automated by the installation of a telemetry and control system.

The City has prepared an Emergency Response Plan, which describes the actions the City will take during a catastrophic interruption of water supplies including, a regional power outage, an earthquake, a fire, emergency chlorination, damage or destruction to its facilities and other disaster.



Figure 7.2: Reservoirs Provide Emergency Supplies

Due to the planning efforts of the MWD, large reservoirs are capable of supplying the City's (and the region's) water needs for several months provided that the water use restrictions of each agency are met. Lake Castaic is a large nearby reservoir that can provide emergency supplies of up to

324,000 AF of emergency and non-emergency supplies.

During a disaster, the City will work cooperatively with LADWP and MWD through the radio communication MARS to facilitate the flow of information and requests for mutual-aid within MWD's 5,100 square mile service area. In the event of groundwater supply loss, all supply could be imported from MWD's reservoirs, and it is confirmed that the necessary capacity is available to do so.

Additional emergency services in the State of California include the Master Mutual Aid Agreement, California Water Agencies Response Network (WARN), and Plan Bulldozer. The Master Mutual Aid Agreement includes all public agencies that have signed the agreement and is planned out of the California Office of Emergency Services. WARN includes all public agencies that have signed the agreement to WARN and provides mutual aid assistance. It is managed by a State Steering Committee. Plan Bulldozer provides mutual aid for construction equipment to any public agency in times of disasters when danger to life and property exists.

7.5 PROHIBITIONS

7.5.1 Mandatory Prohibitions

In accordance with the City's conservation policies, the City has enacted several water use restrictions which are enacted during times of shortage as part of the City's Ordinance Code 1638 (see **Appendix G**). In addition, the City has planned to review its current conservation plan in the near future.

Prohibitions of the current conservation plan include, but are not limited to:

- *Gutter flooding* – No person shall cause or permit any water furnished to any property to run or escape into any gutter if such running can be reasonably prevented.
- *Washing hard-surfaced areas* – No person shall use any water furnished to any property within the city to wash sidewalks, driveways, etc. by hosing.
- *Irrigation* – No person shall water any type of vegetation or landscaping during the hours of 10:00 am and 5:00 pm.
- *Ornamental facilities* – No person shall refill any fountain, pool or other facility containing water solely for ornamental purposed.
- *Leaks* – No person shall permit leaks of water which he/she has the authority to eliminate.
- *Restaurants* – Restaurants shall only serve water to customers upon request.
- *Washing vehicles* – Washing of vehicles, trailers, boats, etc. shall be done only with a hand-held buckets or hose equipped with a shut-off nozzle for quick rinses, except that washing may be done with reclaimed water or a commercial car wash using recycled water.
- *Watering lawns and landscape* – All lawns and landscape shall be watered not more than every other day, on the assigned day (either an odd-numbered or even-numbered day).

- *Wasting generally* – No person shall cause or permit water under his or her control to be wasted.

7.5.2 Consumption Reduction Methods

In addition to the City's demand management measures, the following is a list of some of the consumption reduction methods that the City may implement during a water shortage:

- Reduced pressure in water mains
- Flow & water use restrictions
- Restrict building permits
- Restrict for only priority uses
- Water Shortage pricing
- Mandatory rationing

7.5.3 Penalties of Charges

Violation of the regulations and restrictions on water use in accordance with the City's Conservation Plan will result in penalties punishable by fees and additional water restrictions as follows:

1) *First Violation*: $50 fine
2) *Second Violation:* $100 fine
3) *Third Violation:* $200 fine along with a flow-restrictor at the customer's expense
4) *Fourth Violation:* Termination of service along with a $100 fee for termination

7.6 FISCAL IMPACTS

The City's water rate structure is designed to provide adequate reserves to allow operation of the system during periods of low consumption due to water shortages. The rates have been designed to recover fixed costs through the monthly service charge based on meter size, and commodity charge based on water usage. The City generates a positive revenue stream from continued water sales and maintains a reserve fund. This structure minimizes the City's vulnerability to funding shortages when water consumption levels are reduced.

7.7 COUNCIL ORDINANCE

On October 20, 2014, the City adopted Ordinance No. 1638 (see **Appendix G**) to implement several measures in order to curtail water consumption during times of supply shortages. The Ordinance includes specific stages of actions to be implemented during a declared water shortage, prohibited actions, and penalties for violations of the Ordinance. Additionally, the City Council will implement the provisions of the Water Conservation Plan by resolution following a public hearing to determine the projected water shortage and the appropriate measures or stages that should be implemented.

7.8 EVALUATION OF REDUCTIONS

Under normal conditions, potable water production figures are recorded daily. Weekly and monthly reports are prepared and monitored. This data is used as a baseline to measure the effectiveness of any water shortage contingency stage that may be implemented.

During rationing conditions, the water budget will be monitored on a weekly, daily, or hourly basis depending on the severity of the drought. During a disaster

shortage, production figures will be monitored on an ongoing basis. In addition, meter readings may be performed more frequently than the normal bi-monthly schedule.

The City prepares an annual report (eARDWP) that includes water production, consumption, and other information regarding its distribution system. Such reports are used to determine reductions in water use and take into consideration seasonal and annual fluctuations in water production.

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APPENDICES A-I



THE CITY OF SAN FERNANDO

Appendix A: Urban Water Management Planning Act

City of San Fernando 2015 Urban Water Management Plan

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

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

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

WATER CODE
SECTION 10610-10610.4

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

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

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

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

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

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

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

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

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

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

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

on water management strategies and supply reliability.

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

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

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

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

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

WATER CODE SECTION 10611-10617

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

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

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

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

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

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

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

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

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

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

WATER CODE SECTION 10620-10621

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

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

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

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

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

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

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

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

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

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

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

WATER CODE
SECTION 10630-10634

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

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

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

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

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

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

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

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

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

(A) An average water year.

(B) A single dry water year.

(C) Multiple dry water years.

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

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

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

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

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

(I) Agricultural.

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

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

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

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

(B) Residential plumbing retrofit.

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

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

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(i) Compliance on an individual basis.

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

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

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

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

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

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

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

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

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

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

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

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

sequence for the agency's water supply.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

WATER CODE SECTION 10635

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

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

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

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

WATER CODE
SECTION 10640-10645

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

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

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

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

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

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

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

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

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

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

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

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

WATER CODE
SECTION 10650-10656

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

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

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

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

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

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

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

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

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

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

California Water Code
Sustainable Water Use and Demand Reduction

California Water Code Division 6, Part 2.55.

Chapter 1. General Declarations and Policy §10608-10608.8
Chapter 2. Definitions §10608.12
Chapter 3. Urban Retail Water Suppliers §10608.16-10608.44
Chapter 4. Agricultural Water Suppliers §10608.48
Chapter 5. Sustainable Water Management §10608.50
Chapter 6 Standardized Data Collection §10608.52
Chapter 7 Funding Provisions §10608.56-10608.60
Chapter 8 Quantifying Agricultural Water Use Efficiency §10608.64

Chapter 1. General Declarations and Policy

SECTION 10608-10608.8

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

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

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

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.

(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.

(i) Require implementation of specified efficient water management practices for agricultural water suppliers.

(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.

(k) Advance regional water resources management.

10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

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

Chapter 2 Definitions

SECTION 10608.12

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

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retailwater supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "Commercial water user" means a water user that provides or distributes a product or service.

(e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(h) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification

System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(i) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(l) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(A) Metered.

(B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(C) Treated to a minimum tertiary level.

(D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3 Urban Retail Water Suppliers

SECTION 10608.16-10608.44

10608.16. (a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

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

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

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

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

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

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

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

(2) 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.

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

10608.24. (a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26. (a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's

implementation plan for complying with this part shall consider the conservation of that military installation under federal Executive Order 13514.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28. (a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

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

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

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

10608.42. (a) The department shall review the 2015 urban water management plans and report to the Legislature by July 1, 2017, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

(b) A report to be submitted pursuant to subdivision (a) shall be submitted in compliance with Section 9795 of the Government Code.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

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

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

Chapter 4 Agricultural Water Suppliers

SECTION 10608.48

10608.48. (a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

Chapter 5 Sustainable Water Management

Section 10608.50

10608.50. (a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

(b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

Chapter 6 Standardized Data Collection

SECTION 10608.52

10608.52. (a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Chapter 7 Funding Provisions

Section 10608.56-10608.60

10608.56. (a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

10608.60. (a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

(b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

Chapter 8 Quantifying Agricultural Water Use Efficiency

SECTION 10608.64

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

THE CITY OF SAN FERNANDO

Appendix B: DWR UWMP Tables

City of San Fernando 2015 Urban Water Management Plan

THE CITY OF SAN FERNANDO

Appendix C: DWR Checklist

City of San Fernando 2015 Urban Water Management Plan

UWMP Checklist

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

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

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

Checklist Arranged by Water Code Section

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	

10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use	System Supplies	Section 2.5.1	

	projections from that source.			
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of	System Supplies (Recycled Water)	Section 6.5.2	

	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.	System Supplies (Recycled Water)	Section 6.5.2.2	
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	

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

Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**N/A**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.2**

10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.2 Appendix E**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 1.6**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.7**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 1.8**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 1.8**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 1.8**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 4.4 Section 4.6**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 4.4**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 4.6**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 4.5.3**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	**Section 4.5.3**
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**N/A**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 4.5.3**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the	Baselines and Targets	Section 5.8.2	**N/A**

	basis for, and data supporting the adjustment.			
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**N/A**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 4.5.3**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 2.4**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 2.2.2**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.2.2 Appendix I**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.2.2 Appendix J**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**N/A**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	**Section 2.2.2**
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 2.4**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 2.6**
10631(g)	Describe the expected future water	System	Section 6.8	

	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.	Supplies		
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 2.5.4**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 2.4**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**N/A**
N/A	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	**Section 2.5**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 2.5**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 2.5**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 2.5**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 2.5**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	**Section 2.5**
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions	System Supplies (Recycled	Section 6.5.5	**Section 2.5**

	in terms of acre-feet of recycled water used per year.	Water)		
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 2.5**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 5.3** **Section 5.6**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 5.5.2**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**Section 5.7**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 5.5**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 5.5.2**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 7.2.1**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 7.3**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 7.4**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 7.5.1**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency	Section 8.4	**Section 7.5.2**

		Planning		
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**7.5.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 7.2.1** **Section 7.8**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 7.7** **Appendix G**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 7.8**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 6.3**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**N/A**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**Section 6.3**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 1.2** **Appendix E**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Appendix xx**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or	Plan Adoption, Submittal, and	Section 10.4.4	**Appendix E**

	county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Implementation		
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix xx**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Section 1.2 Appendix E**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Appendix xx**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Appendix xx**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Appendix xx**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Appendix xx**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Appendix xx**

THE CITY OF SAN FERNANDO

Appendix D: City Council Resolution Adopting 2015 UWMP

City of San Fernando 2015 Urban Water Management Plan

RESOLUTION NO. 7743

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN FERNANDO, CALIFORNIA, ADOPTING ALL COMPONENTS OF THE 2015 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California State Legislature enacted Assembly Bill 797 - Urban Water Management Planning Act, requiring preparation of water management plans by urban water purveyors serving a specified number of customers; and

WHEREAS, the City of San Fernando falls under the requirements of AB 797 and must prepare and adopt an updated urban water management plan every five years for its service area; and

WHEREAS, this plan (Exhibit "A") was prepared in compliance with California Water Code, Division 6, Part 2.6 describing and evaluating reasonable and practical efficient water uses, reclamation, and conservation activities; and

WHEREAS, the people served by the City of San Fernando Water Department benefit from the implementation of effective water conservation programs that help to manage available water supplies;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SAN FERNANDO DOES HEREBY RESOLVE, FIND, DETERMINE, AND ORDER AS FOLLOWS:

Section 1. The San Fernando City Council adopts the City of San Fernando 2015 Urban Water Management Plan for the City of San Fernando.

Section 2. The City of San Fernando City Council declares its intent to support water conservation activities within the City boundaries.

PASSED, APPROVED, AND ADOPTED this 29th day of June, 2016.

Robert C. Gonzales, Mayor

ATTEST:

Elena G. Chávez, City Clerk

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) **ss**
CITY OF SAN FERNANDO)

I HEREBY CERTIFY that the foregoing Resolution was approved and adopted at a regular meeting of the City Council held on the 29th day of June, 2016, by the following vote to wit:

AYES: Gonzales, Lopez, Fajardo, Ballin – 4

NOES: None

ABSENT: Soto – 1

Elena G. Chávez

Elena G. Chávez, City Clerk

THE CITY OF SAN FERNANDO

Appendix E: Public Notification

City of San Fernando 2015 Urban Water Management Plan

THE CITY OF SAN FERNANDO

March 30, 2016

Ms. Gail Farber, Director
Los Angeles County Department of Public Works
900 N. Fremont Avenue
Alhambra, CA 91803

RE: Notice of Preparation of the City of San Fernando's 2015 Urban Water Management Plan

Dear Ms. Farber:

In accordance with the State of California Urban Water Management Act, this notice is to advise you that the City of San Fernando is preparing the 2015 update to its *Urban Water Management Plan* (UWMP). A public hearing is tentatively scheduled for Monday, June 20, 2016 at 6:00 P.M. and held in the City of San Fernando City Council Chambers, 117 Macneil Street, and at which time and place, any and all interested persons may appear and be heard thereon with respect to this 2015 update.

Another notice will be sent two weeks prior to the actual public hearing date.

A copy of the draft 2015 UWMP will be available two weeks prior to the public hearing, for your review at the City Clerk's Office, San Fernando City Hall or at the County of Los Angeles San Fernando Public Library at 217 North Maclay Avenue, San Fernando, California 91340. The UWMP may also be viewed on the City's website: **http://www.ci.san-fernando.ca.us**.

Should you have any questions regarding any of the aforementioned, you may contact me at (818) 898-1222.

Sincerely,

Patsy Orozco,
Civil Engineering Assistant II

THE CITY OF SAN FERNANDO

March 30, 2016

Mr. Ron Nichols, General Manager
City of Los Angeles
Department of Water and Power
111 N. Hope Street, Room 15th Floor
Los Angeles, CA 90012

RE: Notice of Preparation of the City of San Fernando's 2015 Urban Water Management Plan

Dear Mr. Nichols:

In accordance with the State of California Urban Water Management Act, this notice is to advise you that the City of San Fernando is preparing the 2015 update to its *Urban Water Management Plan* (UWMP). A public hearing is tentatively scheduled for Monday, June 20, 2016 at 6:00 P.M. and held in the City of San Fernando City Council Chambers, 117 Macneil Street, and at which time and place, any and all interested persons may appear and be heard thereon with respect to this 2015 update.

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Should you have any questions regarding any of the aforementioned, you may contact me at (818) 898-1222.

Sincerely,

Patsy Orozco,
Civil Engineering Assistant II

THE CITY OF
SAN FERNANDO

NOTICE OF A
PUBLIC HEARING
BEFORE THE SAN FERNANDO CITY COUNCIL

NOTICE IS HEREBY GIVEN that the City Council of the City of San Fernando will hold a Public Hearing to consider the adoption of the Urban Water Management Plan 2015.

All those wishing to testify for or against are requested to be present at the regular meeting of the City of San Fernando City Council.

The time, date, and place of the Public Hearing is as follows:

DATE:	Monday, June 20, 2016
TIME:	6:00 p.m.
LOCATION:	Council Chambers, 117 Macneil Street, San Fernando, CA 91340

A copy of the Draft Urban Water Management Plan 2015 is on file in the Office of the City Clerk for public review.

Dated: May 19, 2016

Your Return Mailing Address
Name: San Fernando Sun
Address: 601 S. Brand Blvd. Suite 202
City: San Fernando State CA zip code: 91340

1st Proof of Publication –

(2015.5 C.C.P.)

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES
I am a citizen of the United States, and a resident of the county aforesaid; I am over the age of eighteen years; and I am not a party to or interested in the notice published. I am the chief legal advertising clerk of the publisher of the

San Fernando Valley Sun

a newspaper of general circulation, printed and published weekly in the City of San Fernando

County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California,

Under the date of 8-16, 1945

Case Number 503894

that the notice, of which the annexed is a printed copy has been published in each regular and entire issue of said newspaper and not in any supplement There of on the following dates, to-wit:

06/02/16

all in the year 2016. I certify (or declare) under penalty of perjury that the foregoing is true and correct. Dated at San Fernando California,

this 2nd day of **June, 2016**

Signature,

Y. Galvan

YESENIA GALVAN
SAN FERNANDO VALLEY SUN
601 S. BRAND BLVD., SUITE 202
SAN FERNANDO, CA 91340

NOTICE OF A PUBLIC HEARING BEFORE THE SAN FERNANDO CITY COUNCIL

NOTICE IS HEREBY GIVEN that the City Council of the City of San Fernando will hold a Public Hearing to consider the adoption of the Urban Water Management Plan 2015.

All those wishing to testify for or against are requested to be present at the regular meeting of the City of San Fernando City Council.

The time, date, and place of the Public Hearing is as follows:

DATE: Monday, June 20, 2016

TIME: 6:00 p.m.

LOCATION: Council Chambers, 117 Macneil Street, San Fernando, CA 91340

A copy of the Draft Urban Water Management Plan 2015 is on file in the Office of the City Clerk for public review.

Dated: May 19, 2016
Publish: 6/2 & 6/9/16
L11518

THE CITY OF SAN FERNANDO

Appendix F: Water and Sewer Rates

City of San Fernando 2015 Urban Water Management Plan

ORDINANCE NO. 1613

AN ORDINANCE OF THE CITY OF SAN FERNANDO AMENDING DIVISION 3 OF ARTICLE III OF CHAPTER 94 OF THE SAN FERNANDO CITY CODE RELATING TO WATER UTILITY SERVICE CHARGES

The City Council of the City of San Fernando does hereby ordain as follows:

SECTION 1. Section 94-261 ("Quantity water charges and service charges by meter size") of Division 3 ("Rates and Charges") of Article III ("Water") of Chapter 94 ("Utilities") of the San Fernando City Code is hereby amended to read as follows:

"Sec. 94-261. – Water service charges.

The following commodity charge and fixed service charge are established and shall be charged and collected by the city for all water sold, supplied, distributed, or transported to or for consumers situated in the city and shall be applicable to all metered water within the city for which no other rate is specified:

Commodity Charge. The commodity charge per meter shall be as follows:

Description	FY 2012-2013	FY 2013-2014	FY 2014-2015	FY 2015-2016	FY 2016-2017
Residential					
Block 1 Rate per hcf (0-9 hcf)	$ 0.89	$ 1.00	$ 1.11	$ 1.20	$ 1.31
Block 2 Rate per hcf (10-18 hcf)	1.81	2.04	2.25	2.45	2.67
Block 3 Rate per hcf (18+ hcf)	2.42	2.72	3.00	3.27	3.56
Non-Residential	1.62	1.82	2.00	2.18	2.38

Sources: City of San Fernando; Willdan Financial Services.

Fixed Service Charge. The commodity charge set forth above shall be added to the fixed service charge set forth below:

		FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
CUSTOMER COSTS						
Total Customer Costs		$ 422,031	$ 474,407	$ 522,275	$ 574,972	$ 632,987
Number of Accts		4,731	4,779	4,826	4,875	4,923
Monthly Customer Cost Charge per Account		$ 14.87	$ 16.55	$ 18.04	$ 19.66	$ 21.43
METER AND SERVICES COSTS						
Total Meter and Services Costs		$ 546,651	$ 614,492	$ 676,494	$ 744,753	$ 819,898
Number of Equivalent Meters		7,416	7,490	7,565	7,640	7,717
Monthly Meter Charge per 5/8" - 3/4" Meter		$ 12.29	$ 13.67	$ 14.90	$ 16.25	$ 17.71
Meter Size	AWWA Equivalent Meter Factor					
5/8", 3/4"	1.0	$ 12.29	$ 13.67	$ 14.90	$ 16.25	$ 17.71
1"	2.5	30.72	34.19	37.26	40.62	44.27
1 1/2"	5.0	61.43	68.37	74.52	81.23	88.54
2"	8.0	98.29	109.39	119.24	129.97	141.67
3"	16.0	196.58	218.78	238.48	259.94	283.33
4"	25.0	307.15	341.85	372.62	406.15	442.71
6"	50.0	614.30	683.70	745.23	812.31	885.41
TOTAL COMBINED MONTHLY FIXED CHARGE						
Meter Size	AWWA Equivalent Meter Factor					
5/8", 3/4"	1.0	$ 27.15	$ 30.22	$ 32.94	$ 35.90	$ 37.37
1"	2.5	45.58	50.73	55.30	60.27	63.93
1 1/2"	5.0	76.30	84.92	92.56	100.89	108.20
2"	8.0	113.16	125.94	137.27	149.63	161.32
3"	16.0	211.44	235.33	256.51	279.60	302.99
4"	25.0	322.02	358.40	390.65	425.81	462.37
6"	50.0	629.17	700.25	763.27	831.96	905.07

Sources: City of San Fernando; Willdan Financial Services.

SECTION 2. Section 94-262 ("Lifeline rate") of Division 3 ("Rates and Charges") Article III ("Water") of Chapter 94 ("Utilities") of the San Fernando City Code is hereby deleted in its entirety.

SECTION 3. Section 94-264 ("Purchased water adjustment") of Division 3 ("Rates and Charges") of Article III ("Water") of Chapter 94 ("Utilities") of the San Fernando City Code is hereby amended to read as follows:

"Sec. 94-264. – Purchased water adjustment.

(a) Beginning July 1, 2012 and for each fiscal year through June 30, 2017, the commodity charges specified in section 94-261 shall be subject to an overriding unit adjustment to be applied to each 100 cubic feet of water sales to reflect changes in the cost of purchased water as defined in this section.

(b) Determination of the overriding unit adjustment shall be made from city accounting records six times yearly for each of the 12-calendar-month periods ending with January 31, March 31, May 31, July 31, September 30, and November 30 as follows: The annual cost of all water purchased for distribution by the city shall be divided by the division's total water sales (in units of one hundred cubic feet HCF) for the same 12-month period. The quotient so obtained shall be expressed to the nearest $0.0001 per HCF of water and shall be multiplied

by all units of one hundred cubic feet of water sales as shown on customer billings for a period of water use regularly scheduled to end within the second and third billing months following the 12-month period used for the unit adjustment computation. The resultant product in each case shall be expressed to the nearest $0.01 and, unless otherwise provided therein, shall be the total overriding adjustment to be added to each water service billing.

(c) Cost of purchased water shall include the total cost to the city of all water delivered to the division's system from the metropolitan water district or other suppliers. Reimbursements received by the city for purchased water costs which are or have been included in the calculation of the overriding unit adjustment shall be included as a credit in the determination of the cost of purchased water for the month in which such reimbursement is received."

SECTION 4. Section 94-270 ("Annual increase") of Division 3 ("Rates and Charges") of Article III ("Water") of Chapter 94 ("Utilities") of the San Fernando City Code is hereby amended to read as follows:

"Sec. 94-270. – Annual increase.

(a) On July 1, 1993 and on July 1 of each year thereafter, the then-existing rates imposed under this article, sections 94-265, 94-267 and 94-268, shall automatically increase by the percentage increase, if any, in the Consumer Price Index for all Urban Consumers for Los Angeles—Anaheim—Riverside (1982-84 equals 100) as published by the United States Department of Labor, Bureau of Labor Statistics ("index"), rounded to the nearest cent. The increases shall be cumulative. In determining the percentage increase, the index for the month of May immediately preceding the adjustment date shall be compared with the index for the like month of the previous year. In no event, however, shall the rates imposed be adjusted downward to reflect a percentage decrease in the index.

(b) On July 1, 2016, the then-existing rates imposed under this article, section 94-261, shall automatically increase by the percentage increase, if any, in the Consumer Price Index for all Urban Consumers for Los Angeles—Anaheim—Riverside (1982-84 equals 100) as published by the United States Department of Labor, Bureau of Labor Statistics ("index"), rounded to the nearest cent. The increases shall be cumulative. In determining the percentage increase, the index for the month of May immediately preceding the adjustment date shall be compared with the index for the like month of the previous year. In no event, however, shall the rates imposed be adjusted downward to reflect a percentage decrease in the index."

SECTION 5. The City Council is taking action only on those fees charges that have been amended. All charges not modified herein shall continue and remain in effect unless and until modified by resolution or other action of the City Council.

SECTION 6. If any section, subsection, subdivision, paragraph, sentence, clause or phrase in this ordinance or any part thereof is for any reason held to be unconstitutional or invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the validity or effectiveness of the remaining portions of this ordinance or any part thereof. The City Council hereby declares that is would have passed each section, subsection, paragraph, sentence,

clause or phrase thereof irrespective of the fact that any one or more subsections, subdivisions, paragraphs, sentences, clauses or phrases be declared unconstitutional, or invalid, or ineffective.

SECTION 7. The City Clerk shall certify to the passage of this Ordinance and shall cause this Ordinance to be published or posted as required by law.

PASSED, APPROVED, and ADOPTED at a regular meeting held on this 7th day of May, 2012.

Brenda Esqueda, Mayor

ATTEST:

Elena G. Chávez, City Clerk

APPROVED AS TO FORM:

Maribel S. Medina, City Attorney

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF SAN FERNANDO)

I, ELENA G. CHÁVEZ, City Clerk of the City of San Fernando, do hereby certify that the foregoing Ordinance was adopted a regular meeting of the City Council held on the 7th day of May, 2012 and was carried by the following roll call vote:

AYES: Lopez, De La Torre, Ballin, Hernández – 4

NOES: None

ABSENT: Esqueda – 1

ABSTAIN: None

Elena G. Chávez, City Clerk

ORDINANCE NO. 1614

AN ORDINANCE OF THE CITY OF SAN FERNANDO AMENDING DIVISION 2 OF ARTICLE II OF CHAPTER 94 OF THE SAN FERNANDO CITY CODE RELATING TO SEWERS AND SEWER DISPOSAL UTILITY SERVICE CHARGES

The City Council of the City of San Fernando does hereby ordain as follows:

SECTION 1. Section 94-66 ("Sewer service charges generally") of Division 2 ("Rates and Charges") of Article II ("Sewers and Sewage Disposal") of Chapter 94 ("Utilities") of the San Fernando City Code is hereby amended to read as follows:

"Sec. 94-66. – Sewer service and use charges.

The following sewer service and use charges are established and shall be charged and collected by the city for all services furnished in connection with its sanitary sewer system. Such sewer service and use charges shall be applied to or for each premises which is connected, directly or indirectly, to the sanitary sewer system or any part thereof for each premises from which any sewage is conveyed or discharged directly or indirectly into the sanitary sewer system. The amount of sewer service and use charges for each premises shall be the sum of the base fee and the unit cost per hundred cubic feet of water used as follows:

Customer Class	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
Residential	$ 28.32	$ 31.15	$ 32.70	$ 32.70	$ 32.70
Group II Commercial	16.30	17.93	18.83	18.83	18.83
Group III Commercial	16.30	17.93	18.83	18.83	18.83
Group IV Commercial	16.30	17.93	18.83	18.83	18.83
City Property	16.30	17.93	18.83	18.83	18.83
Industrial	16.30	17.93	18.83	18.83	18.83
Schools	16.30	17.93	18.83	18.83	18.83
Higher Education	16.30	17.93	18.83	18.83	18.83

Unit Cost for ($/HCF) Water Used

Customer Class	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
Group II Commercial	$ 1.63	$ 1.80	$ 1.89	$ 1.89	$ 1.89
Group III Commercial	2.63	2.90	3.04	3.04	3.04
Group IV Commercial	3.94	4.35	4.57	4.57	4.57
City Property	1.25	1.37	1.44	1.44	1.44
Industrial	1.25	1.37	1.44	1.44	1.44
Schools [1]	1.11	1.22	1.28	1.28	1.28
Higher Education[1]	1.11	1.22	1.28	1.28	1.28

[1] Charge per student (ADA).

Sources: City of San Fernando; Willdan Financial Services.

SECTION 2. Section 94-69 ("Annual amendment to charges based on Consumer Price Index") of Division 2 ("Rates and Charges") of Article II ("Sewers and Sewage Disposal") of Chapter 94 ("Utilities") of the San Fernando City Code is hereby amended to read as follows:

"Sec. 94-69. – Annual increase.

(a) On July 1, 1993 and on July 1 of each year thereafter, the charges imposed under section 94-61 shall automatically increase by the percentage increase, if any, in the Consumer Price Index for all Urban Consumers for Los Angeles—Anaheim—Riverside (1982-84 equals 100) as published by the United States Department of Labor, Bureau of Labor Statistics ("index"), rounded to the nearest cent. The increases shall be cumulative. In determining the percentage increase, the index for the month of May immediately preceding the adjustment date shall be compared with the index for the like month of the previous year. In no event, however, shall the rates imposed be adjusted downward to reflect a percentage decrease in the index.

(b) Commencing on July 1, 2015 and on July 1, 2016 and July 1, 2017, the charges imposed under this article, section 94-66, shall automatically increase by the percentage increase, if any, in the Consumer Price Index for all Urban Consumers for Los Angeles—Anaheim—Riverside (1982-84 equals 100) as published by the United States Department of Labor, Bureau of Labor Statistics ("index"), rounded to the nearest cent. The increases shall be cumulative. In determining the percentage increase, the index for the month of May immediately preceding the adjustment date shall be compared with the index for the like month of the previous year. In no event, however, shall the rates imposed be adjusted downward to reflect a percentage decrease in the index."

SECTION 3. The City Council is taking action only on those fees charges that have been amended. All charges not modified herein shall continue and remain in effect unless and until modified by resolution or other action of the City Council.

SECTION 4. If any section, subsection, subdivision, paragraph, sentence, clause or phrase in this ordinance or any part thereof is for any reason held to be unconstitutional or invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the validity or effectiveness of the remaining portions of this ordinance or any part thereof. The City Council hereby declares that is would have passed each section, subsection, paragraph, sentence, clause or phrase thereof irrespective of the fact that any one or more subsections, subdivisions, paragraphs, sentences, clauses or phrases be declared unconstitutional, or invalid, or ineffective.

SECTION 5. The City Clerk shall certify to the passage of this Ordinance and shall cause this Ordinance to be published or posted as required by law.

PASSED, APPROVED AND ADOPTED by the City Council of the City of San Fernando at a regular meeting held on this 7th day of May, 2012.

Brenda Esqueda, Mayor

ATTEST:

Elena G. Chávez, City Clerk

APPROVED AS TO FORM:

Maribel S. Medina, City Attorney

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF SAN FERNANDO)

I, ELENA G. CHÁVEZ, City Clerk of the City of San Fernando, do hereby certify that the foregoing Ordinance was adopted a regular meeting of the City Council held on the 7th day of May 2012 and was carried by the following roll call vote:

AYES: Lopez, De La Torre, Ballin, Hernández – 4

NOES: None

ABSENT: Esqueda – 1

ABSTAIN: None

Elena G. Chávez, City Clerk

THE CITY OF SAN FERNANDO

Appendix G: City Ordinance No. 1638

City of San Fernando 2015 Urban Water Management Plan

DIVISION 4. - WATER CONSERVATION

FOOTNOTE(S):

--- (2) ---

Editor's note— Ord. No. 1638, § 1, adopted Oct. 20, 2014, repealed former Div. 4, §§ 94-296—94-303, in its entirety and enacted new provisions numbered as §§ 94-295—94-306. In order to avoid conflicts in section numbering the editor has renumbered the provisions added by Ord. No. 1638 as herein set out. Former Div. 4 pertained to water wastage and derived from the Code of 1957, §§ 28.9—28.15.

Sec. 94-281. - Purpose.

Upon declaration by the city council that a water shortage emergency exists, this plan shall be implemented to provide a vehicle to protect the public peace, health and safety by significantly and equitably reducing the consumption of potable water over an extended period. The plan shall remain in effect until the city council declares the water shortage emergency has ended.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-282. - Definitions.

The following words, terms and phrases, when used in this division, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Person means any individual, firm, partnership, association, company or organization of any kind.

Water means water supplied by the city.

(Ord. No. 1638, § 1, 10-20-2014)

Cross reference— Definitions generally, § 1-2.

Sec. 94-283. - Applicability.

This division shall apply to all persons using water in this city, regardless of whether any person using water shall have a contract for water service.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-284. - Reclamation wastewater system required for carwashes.

All carwashes shall be constructed with a wastewater reclamation system approved by the public works director. No carwash shall be exempted pursuant to section 94-289 from the requirements of this section.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-285. - Phase I water shortage (voluntary conservation).

(a) A phase I shortage shall be declared when the city determines that a shortage of up to ten percent will occur in water supplies.

(b) All elements of section 94-288 (Prohibitions) shall apply in phase I on a voluntary basis only.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-286. - Phase II water shortage (mandatory conservation).

(a) A phase II shortage shall be declared when the city determines that a shortage of up to 20 percent will occur in water supplies.

(b) All elements of section 94-288 (Prohibitions) shall apply in phase II on a mandatory basis.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-287. - Phase III water shortage (mandatory conservation).

(a) A phase III shortage shall be declared when the city determines that a shortage above 20 percent will occur in water supplies.

(b) All elements of section 94-288 (Prohibitions) shall apply in phase III on a mandatory basis except that:

(1) Restrictions on watering lawns, landscaped or other turf areas shall be modified to prohibit watering more often than every third day in a schedule to be set by the public works director, with watering only during the hours of 5:00 p.m. and 10:00 a.m.;

(2) Commercial nurseries and other water-dependent industries shall be prohibited from watering lawn, landscaped and other turf areas more often than every third day on a schedule to be determined by the public works director, and shall water only during the hours between 5:00 p.m. and 10:00 a.m.

(3) Water used on a one-time basis for purposes such as construction and dust control, shall be limited to that quantity identified in a plan submitted by the user which describes water use requirements. The plan shall be submitted to the city for approval. Water sources other than potable water shall be utilized where available;

(4) The use of water from fire hydrants shall be limited to fire fighting and related activities and other uses of water for municipal purposes shall be limited to activities necessary to maintain the public health, safety and welfare.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-288. - Prohibitions.

(a) *Gutter flooding.* No person shall cause or permit any water furnished to any property within the city to run or to escape from any hose, pipe, valve, faucet, sprinkler or irrigation device into any gutter or otherwise to escape from the property if such running or escaping can reasonably be prevented.

(b) *Washing hard-surfaced areas.* No person shall use any water furnished to any property within the city to wash sidewalks, walks, driveways and parking lots by hosing.

(c) *Irrigation.* No person shall water or irrigate any shrubbery, trees, lawns, grass, ground covers, plants, vines, gardens, vegetables, flowers or other vegetation between the hours of 10:00 a.m. and 5:00 p.m. No water users shall cause or allow the water to run off landscaped areas into adjoining streets, sidewalks or other paved areas due to incorrectly directed or maintained sprinklers or excessive watering.

(d) *Ornamental facilities.* No person shall refill any fountain, pool or other facility containing water solely for ornamental purposes emptied during the effectiveness of this division.

(e) *Leaks.* No person shall permit leaks of water which he has the authority to eliminate.

(f) *Restaurants.* Restaurants shall only serve water to customers upon request.

(g) *Washing vehicles.* Washing of motor vehicles, trailers, boats and other types of equipment shall be done only with a hand-held bucket or a hose equipped with a positive shutoff nozzle for quick rinses, except that washing may be done with reclaimed wastewater, or by a commercial car wash using recycled water.

(h) All lawns, landscaped or other turf area shall be watered not more often than every other day and with watering only during the hours between 5:00 p.m. and 10:00 a.m., with even-numbered addresses

watering on even-numbered days of the month and odd-numbered addresses watering on odd-numbered days of the month. This provision shall apply to residential, commercial, industrial and public agencies but shall not apply to commercial nurseries, golf courses and other water-dependent industries.

(i) *Wasting generally.* No person shall cause or permit water under his control to be wasted.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-289. - Exemptions.

(a) *Permit.* A person may be exempted from application of this division to a certain type of use if the city's public works director issues a permit allowing such use and if such permit issuance is based on a finding that enforcement of the applicable restriction would either:

(1) Cause an unnecessary and undue hardship to the applicant or the public; or

(2) Cause or threaten an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or the public.

(b) *Conservation devices.* The public works director may require the use of such water conservation devices or practices as he deems appropriate as a condition of the exemption permit. He shall promulgate a list of approved devices.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-290. - Enforcement.

(a) The public works director, the fire chief, police chief, water superintendent, or designee have the duty and are authorized to enforce this division and shall have all the powers and authority contained in Penal Code § 836.5, including the power to issue written notice to appear.

(b) Each law enforcement officer shall, in connection with his duties imposed by law, diligently enforce this division.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-291. - Remedies; penalties.

(a) *Notice of violation; procedure upon failure to correct.* Prior to enforcement pursuant to section 94-290, any person who is suspected of violating this division shall be given a preliminary notice in writing of such violation, with the description of violation set forth in such preliminary notice. The person shall have 24 hours to correct the violation or terminate the use. If the violation is not corrected or the use terminated, the water division may forthwith either:

(1) Disconnect service;

(2) Install flow-restricting devices restricting water service; or

(3) Order issuance of a second preliminary notice.

Service disconnected or restricted pursuant to subsection (a)(1) or (2) of this section shall be restored only upon payment of the turn-on and other charges fixed by this article or the rules and regulations of the water division.

(b) *Penalties.* Any person who has received a preliminary notice of violation of a particular section of this division and against whom the water division has taken action pursuant to this section and who has not corrected or terminated the use or at a subsequent time violates the same section of this division, regardless of whether the type of use was previously specified in any preliminary notice of violation, shall be:

(1) Issued an administrative citation as described in the city's comprehensive fee schedule; or

(2) Guilty of a misdemeanor, punishable as provided in section 1-10. Each day any violation of this division is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.

(Ord. No. 1638, § 1, 10-20-2014)

Sec. 94-292. - Conflict with state law.

This division shall be inoperative to the extent any regulations and restrictions adopted pursuant to Water Code §§ 350—359 conflict.

(Ord. No. 1638, § 1, 10-20-2014)

Secs. 2-293—2-303. - Reserved.

THE CITY OF SAN FERNANDO

Appendix H: Sylmar Basin Safe Yield, 5 Year Reassessment

City of San Fernando 2015 Urban Water Management Plan

Re: City of Los Angeles vs. City of San Fernando, et. al.
Case No. 650079 – County of Los Angeles

July 31, 2012

To: Mr. Ron Ruiz
Public Works Director
City of San Fernando
117 MacNeil Street
San Fernando, CA 91340-2993

Job No. 500-LAS10

Mr. Milad Taghavi
Assistant Director of Water Quality,
Los Angeles Department of Water and Power
111 N. Hope Street
Los Angeles, CA 90012

Re: Final Report –
Sylmar Basin Safe Yield, 5-Year Re-assessment

In order to comply with an approximate 5-year timing requirement for an updated assessment of the safe yield of the Sylmar Groundwater Basin, I have prepared this final report, along with its tables and figures, to document my current re-assessment of the safe yield value for this basin. This final report includes: an initial discussion in the Background section of key documents prepared for the Final ULARA Judgment of January 26, 1979 and of other key documents prepared by the two prior ULARA Watermasters; a discussion of the construction of two groundwater monitoring wells drilled at/near the Sylmar notch by the City of San Fernando; my analysis of numerous water level hydrographs prepared for several water wells owned by Los Angeles and San Fernando in the basin; and my findings and conclusions regarding this updated assessment of the safe yield of Sylmar Basin.

This 5-year assessment of the safe yield of Sylmar Basin (including analyses of available data) has been prepared by the Watermaster with the assistance of key support services by Mr. Anthony Hicke, Assistant to the Watermaster and a senior groundwater geologist with Richard C. Slade & Associates LLC, Consulting Groundwater Geologists. A copy of the Final Updated Draft of this report has been previously reviewed and approved by key representatives of the cities of Los Angeles and San Fernando, and by Mr. Melvin Blevins, Consultant to the Watermaster.

BACKGROUND

The following paragraphs list the documents reviewed for this updated assessment, and summarizes the principal findings and conclusions of each in regard to the safe yield of the Sylmar Groundwater Basin.

1. ULARA Judgment Subsection 4.2.4 of Section 4 "Declaration Re: Geology and Hydrology" of the 1979-dated ULARA Judgment originally established the safe yield of the Sylmar Groundwater Basin to be 6,210 acre feet per year (AF/yr) for the 1964-65 Water Year. Further, Subsection 4.2.5 "Separate Basins – Separate Rights" in the Judgment stated that "the rights of the parties to extract groundwater within ULARA are separate and distinct..." Originally, and at the time of the 1979 Judgment, the Sylmar Basin "[was] not in overdraft" (subsection 4.2.6.2 "Sylmar Basin"). The Judgment defined overdraft to be "a condition which exists when the total annual extractions of groundwater from a basin exceed its safe yield, and when any temporary surplus has been removed" (Section 2 "Definitions and Attachments").

2. August 26, 1983 Watermaster Letter to Court
   According to an August 26, 1983 letter from then ULARA Watermaster, Melvin Blevins, to the Superior Court (Honorable Harry L. Hupp, presiding), the Watermaster is to notify the Court and parties concerned in the event the San Fernando Groundwater Basin entered a condition of overdraft (Section 10.2 of the Final Judgment). Further, in this same letter, the then-Watermaster opined that the Sylmar Basin "is in a condition of overdraft ...based on the hydrologic data available for the past ten years and the present rate of groundwater extractions."

   Section 7 "Continuing Jurisdiction" and in particular subsections 7.1 "Jurisdiction Reserved", allows the Court to retain jurisdiction to enforce the 1979-dated Judgment in Case No. 650079, City of Los Angeles vs City of San Fernando, et al. As the then-Watermaster, Mr. Blevins further stated in this letter to the Court that the Watermaster [including the current ULARA Watermaster, Richard C. Slade] has the [ongoing] responsibility of assisting the Court in the administration and enforcement of the Judgment, and also in the reporting of changed hydrologic conditions within the Sylmar Basin (the Watermaster's assistance and enforcement actions are described in Section 8 "Watermaster" and Section 10 "Miscellaneous Provisions" of the 1979 Judgment).

   In this August 26, 1983 letter to the Court, Mr. Blevins stated that the "annual extraction of the groundwater in the Basin has exceeded this Safe Yield value in ten of the last 11 years [water years] 1971-72 through 1981-82." Specifically, the "cumulative withdrawal from the groundwater storage has exceeded the Safe Yield by approximately 4,700 acre-feet"; a key table showing groundwater extractions was attached to that 1983 letter to document groundwater extractions of the parties at that time.

   Mr. Blevins also noted that "it was uncertain at the date of the 1979 Judgment as to how much 'temporary surplus' was available in [Sylmar Basin], even though extractions have exceeded the Safe Yield continuously for the period 1971-72 through 1978-79." From 1979

to 1981-82, the August 26, 1983 letter stated that "...approximately 2,700 acre-feet of groundwater have been extracted in excess of the Safe Yield value. This amount came from the temporary surplus. In my opinion, the temporary surplus has been exhausted and overdraft has begun [in Sylmar Basin]."

To help document his opinion, Mr. Blevins noted (pg. 2, August 26 1983 letter) that water levels in this basin have declined an average of 3 feet per year for the past 11 water years (1971-72 through 1981-82), although "water levels have shown an upward trend in recent years due to above-normal rainfall".

Finally, the August 26, 1983 letter (pgs. 2 and 3) to the Court by Mr. Blevins discussed then-recent groundwater extractions by the parties from the Sylmar Basin. Specifically, for the 14-year period 1968-69 through 1981-82, those extractions by all parties averaged 6,450 AF/yr. Virtually all of those extractions during that 14-year period were by the cities of Los Angeles and San Fernando. Total extractions for a then more-recent period (1978-79 through 1981-82) were noted in that letter to have averaged 6,885 AF/yr; Mr. Blevins stated that this average value was "675 AF/yr in excess of the Safe Yield value [that safe yield value was 6,210 AF/yr for the entire Sylmar Basin].

As an added conclusion to this referenced letter, Mr. Blevins opined (pg. 3) that "pumping in excess of Safe Yield at recent rates [annual volumes] [and] for a short period of time (5 to 10 years) would not be adverse to the basin. "However, eventually the total pumping should be reduced to the Safe Yield value of 6,210 AF/yr. "It may even be necessary to re-evaluate the Safe Yield value, in the event that parties in the basin feel that the number has changed."

A table titled "Sylmar Basin Groundwater Extractions" was appended to the August 26, 1983 letter by Mr. Blevins; data provided thereon were for all parties for the period 1968-69 through 1981-82. Review of that table revealed that total groundwater extractions from Sylmar Basin by all parties during that time period ranged from a low of 4,836 AF in 1970-71 to a high of 7,497 AF in 1980-81; other years of high production were 7,232 AF in 1977-78 and 7,164 AF in 1978-79. Further review of those tabulated values revealed that for the 7-year period of 1977-78 through 1983-84, average annual groundwater extractions by the 2 cities were 6,852 AF from Sylmar Basin.

3. October 1, 1984 Superior Court Stipulation

As a result of the above-referenced letter to the Court from Mr. Blevins, and in a Stipulation and Order to the Sylmar Basin Pursuant to Section 10.2 of the ULARA Judgment, Judge Harry L. Hupp, Judge of the Superior Court, wrote that the Court "has determined that pumping from the Sylmar Basin shall be reduced to the Safe Yield (6,210 AF/yr at present) of the basin, effective October 1, 1984"; the actual Court order was signed March 22, 1984 by Judge Hupp. The cities of Los Angeles and San Fernando were again noted to each have a

right of 3,105 AF/yr of groundwater from this basin. Paragraph 7 of this Court Stipulation stated that in order to "provide for water shortages due to unusual circumstances, such as weather conditions or water system operational problems, Los Angeles and San Fernando shall [each] have the right in any year to over-extract from the Sylmar Basin an amount not to exceed 10 percent [about 310 AF/yr, under their then-current Safe Yield value] of then-allowed pumping. "The 10 percent annual over-extraction may continue from year to year, accumulatively not to exceed 1,000 acre-feet for each city, so long as the unusual circumstances persist."

4. March 29, 2006 Watermaster Letter

In a March 29, 2006 letter to Mr. Ronald Ruiz of the City of San Fernando and Mr. Thomas M. Erb of the City of Los Angeles Department of Water & Power, the then-ULARA Watermaster Mr. Mark Mackowski discussed the Sylmar Basin and provided his re-evaluation of the safe yield of this groundwater basin. The letter re-stated the following key information for Sylmar Basin:

- The original 1979 Judgment established the safe yield to be 6,210 AF/yr.
- The former Watermaster, Mr. Melvin Blevins, recommended in a letter to the Court, dated August 25, 1983, that the Sylmar Basin was in a condition of overdraft; a Stipulation was entered by the Court on March 22, 1984 acknowledging this overdraft and also limiting the pumping by the cities of Los Angeles and San Fernando to 3,105 AF/yr each (total, 6,210 AF/yr from the whole basin).
- In 1996, based on a motion by the City of San Fernando, the then-Watermaster Mr. Blevins reviewed the safe yield calculations for Sylmar Basin and recommended temporarily increasing its safe yield to 3,255 AF/yr for each city (6,510 AF/yr of total pumping by both cities); this period of temporary increase was to expire in 10 years (on or about October 1, 2005).

Based on the above, the March 29, 2006 Watermaster letter from Mr. Mackowski then stated that he had recently retained former Watermaster Mr. Blevins (serving as "Watermaster Consultant" to Mr. Mackowski) to perform another re-evaluation of the safe yield of Sylmar Basin. That re-evaluation was to use the same methodology as had been used by the State Water Rights Board during its preparation of the Report of Referee; this methodology was also used for the subsequent update by Bookman–Edmonston for the Court (this latter update was presented in Court Exhibit GB-1). The 2006 updated re-evaluation by Mr. Blevins, a copy of which was appended to the March 29, 2006 letter by then-Watermaster Mr. Mackowski, concluded that the safe yield of Sylmar Basin could be temporarily increased (with certain restrictions) to a total of 6,810 AF/yr (3,405 AF/yr for each of the two municipal-supply purveyors).

Notably, the letter by Mr. Mackowski stated there are "certain significant uncertainties and limitations" related to the updated safe yield re-evaluation by his consultant Mr. Blevins in 2006, including:

a. The import return flow value of 35.7%, as defined for Sylmar Basin in the Judgment, Subsection 5.2.2.1 ("Rights to Recapture Import Return Waters"), was once again used by Mr. Mackowski to calculate the amount of delivered imported water that was considered to be capable of deep percolating back into the groundwater basin as return flow. However, for the first time, an acting Watermaster acknowledged that this value was possibly "too large"; Mr. Mackowski did use this same value again in his 2006 re-evaluation "to be consistent" with all former safe yield evaluations and "to provide a direct comparison" with those prior calculations.
b. The 2006 re-evaluation by Watermaster Consultant Mr. Blevins used a combined groundwater "underflow through the Sylmar and Pacoima notches of 540 AF/yr, rather than 560 AF/yr as stated in the Report of Referee."
c. The 2006 letter acknowledged that "it is difficult, if not impossible, to accurately calculate [groundwater in] storage in a confined or semi-confined aquifer system such as [exists in] the Sylmar Basin." In essence, water wells in this basin were recognized to be perforated in the confined aquifers of the Saugus Formation, and, as a result, this 2006 letter stated that hydrographs of water levels in these wells "do not directly reflect change in [the volume of groundwater in] storage, which is needed to perform an accurate safe yield evaluation."
d. There "are few available non-pumping monitoring wells with long-term hydrographs in the Sylmar Basin that can be used for determining change in [the groundwater in] storage over the past 10 years. "We have partly based our recommendation to increase the safe yield on just one recent well hydrograph (4840B)"; this well number is recognized to be LADWP Mission Well No. 2 (refer to location on Figure 1B).
e. "The actual amount of underflow [subsurface flow of groundwater in the alluvium] through the subsurface Sylmar Notch and Pacoima Notch is not known. "To determine Safe Yield accurately, it is necessary to know how much water [groundwater] is leaving the basin from both pumping and underflow." The Report of Referee calculated the total loss through the [two] notches to be an average of 560 AF/yr, but this value needs to be confirmed."
f. "Stored water credits [in Sylmar Basin, for both cities] amount to a total of 8,787 AF as of October 1, 2005." There is a legal claim on this water and we do not know how long this basin would respond if the Stored Water Credits were pumped over a relatively short period of time."

The following two recommendations were also provided in this referenced March 29, 2006 letter by Mr. Mackowski, as caveats to his recommendation to increase the total safe yield of Sylmar Basin to 6,810 AF/yr (3,405 AF/yr for each city). These caveats were as follows:

- The Watermaster shall have the authority to perform a safe yield re-evaluation at any time, if, in his judgment, "the basin is being adversely affected by the [latest] temporary increase in Safe Yield." In any event, another Safe Yield re-evaluation shall be

performed no later than five years after the beginning of the temporary increase to 6,810 AF/yr."

- "Two shallow [groundwater] monitoring wells shall be placed near each of the notches (four wells total) to measure water level elevations and gradients so that subsurface flow through the notches can be calculated and monitored. "There may be existing wells that could be utilized for this purpose, which would reduce the number of new wells needed."

5. Court Stipulation, Executed October 11, 2006
   A new "Stipulation Between the Cities of San Fernando and Los Angeles regarding the safe yield of the Sylmar Basin..." was executed by the Superior Court on October 11, 2006, Judge Susan Bryant-Deason presiding, as a result of the March 29 2006-dated letter from then-Watermaster Mr. Mackowski; this is the letter to which was appended the March, 2006-dated "Sylmar Basin Safe Yield Re-Evaluation" by Mr. Blevins, Watermaster Consultant. This particular Court stipulation, among other items, acknowledged the latest safe yield re-evaluation value of 6,810 AF/yr (total, for both cities), mentioned that the parties "agree to work with" the Watermaster [Mr. Mackowski] in locating, installing, and funding a total of four (4) shallow monitoring wells in the Sylmar Basin...", and stated that a "recalculation of the safe yield can be requested by any Party in the event such recalculation appears to be necessary... "In addition, another safe yield re-evaluation shall be performed within five years after the adoption of this Stipulation, and as otherwise requested by the Watermaster."

FINDINGS

Hydrogeology of the Sylmar Basin

Based upon the Report of Referee and the 1979 Judgment, the Sylmar Basin is the northernmost of the four groundwater basins in ULARA. Ground surface boundaries of this basin have been taken to be: the San Gabriel Mountains on the north and east; a topographic divide in the valley fill (alluvium) on the west between the Mission Hills and the San Gabriel Mountains; the Mission Hills on the southwest; the Saugus Formation on the east along the east bank of the Pacoima Wash; and the eroded south limb of the Little Tujunga syncline (and perhaps a fault also) on the south. Figure 1A "Well Location Map, Sylmar Basin" has been adapted from Attachment "A" in the 1979-dated Judgment to show the ground surface boundaries of the Sylmar Basin.

The Judgment (1979, subsection 4.1.3. "Sylmar Basin") also noted that the potentially water-bearing sediments within Sylmar Basin are comprised by the shallow alluvium (aka, the "valley fill" in the Report of Referee) and the Saugus Formation of Plio-Pleistocene geologic age. These potentially water-bearing sediments were further considered in the Judgment to extend to depths of 40 ft (alluvium) and at least 12,000 ft (the Saugus Formation) in this basin. Cross Section F-F (Plate 5B of the Report of Referee; not reproduced herein) depicts these materials on a geologic cross section across Sylmar Basin. These sedimentary deposits, which comprise

the groundwater reservoir of Sylmar Basin, are directly underlain at depth by a very thick sequence of well-consolidated and/or cemented sedimentary rocks (sandstone, shale, siltstone, etc). This latter group of rocks is considered to be nonwater-bearing and to comprise the local bedrock.

Groundwater within the alluvium of this basin is considered to exist under water table (unconfined) conditions. Groundwater in the underlying Saugus Formation, however, is considered to exist under artesian (confined) conditions. Moreover, the 1962 Report of Referee (pgs. 53-55) notes that the alluvial aquifer system and the underlying Saugus Formation aquifer system are in "hydraulic continuity" wherever they jointly exist in the subsurface. Subsurface outflow of groundwater from Sylmar Basin to the San Fernando Groundwater Basin to the south occurs via underflow through two alluvial-filled notches in Sylmar Basin. As seen on Figure 1B, these 2 notches are the Sylmar notch in the southwest corner of this basin and the Pacoima notch in the southeastern corner of the basin.

The surface area of this basin, also known as the surface extent of the valley fill deposits, consists of 5,565 acres, as listed on p. 8 of the January 26, 1979-dated Judgment; Attachment "A" in that document illustrates the ground surface boundaries of the Sylmar Groundwater Basin on a small-scale base map of all of ULARA. Plate 5 of Volume 1 of the Report of Referee also illustrates those same ground surface boundaries for Sylmar Basin, whereas p. xxxv of the Report of Referee also actually states that this Sylmar Basin has a surface area of 5,565 acres. However, recent calculations by the current Watermaster of the surface area of this basin (using the Sylmar Basin boundary that was digitized by personnel from LADWP who were assisting the original Watermaster) yield a total of 6045 acres (refer to these LADWP-digitized boundaries on Figure 1B). This discrepancy in the surface area of this basin is likely due to changes in the basin boundary lines over time, possibly resulting from drafting those boundary lines onto different base maps; other boundaries were even subsequently imported into an electronic GIS database format by LADWP personnel.

Table 1, "Summary of Well Construction Data – City of San Fernando", and Table 2, "Summary of Well Construction Data – LADWP Mission Wellfield" have been prepared to document the key items, where currently available, for all, historically-known, municipal-supply wells in Sylmar Basin constructed for these 2 cities over the years. The locations for all of these historically-constructed municipal-supply wells are shown on Figure 1B. Notably, none of the wells listed on Tables 1 or 2 show perforated sections of casing shallow enough to produce water from the alluvium. Thus, the currently known active wells within the Sylmar Basin appear to pump groundwater directly from the Saugus Formation; no existing municipal-supply wells produce groundwater from the alluvial deposits.

The current Watermaster is still trying to fill-in the blank entries in different columns on both Tables 1 and 2; principal items still needed include the depth settings of the existing pump (if

any), and the current status of each listed well. At this time, Tables 1 and 2 are to be considered as "In-Progress Drafts".

Rainfall

Public records for local raingages in ULARA are available from the website of the Western Regional Climate Center (WRCC; http://www.wrcc.dri.edu). Using the WRCC site, data for the nearby Burbank Valley Pump Plant Gage (Gage No. 041194) were downloaded. Data are available for this gage for the period January 1940 through December 2010. Figure 2A, "Annual Rainfall, Burbank Valley Pump Plant", shows a bar graph of the total rainfall for each year between 1940 and 2010 and a horizontal line showing the long-term average annual rainfall value; this long-term average annual rainfall was determined to be 16.3 inches.

Using the annual rainfall data from the Burbank Valley Pump Plant gage, Figure 2B "Accumulated Rainfall Departure Curve" was prepared to illustrate the results of calculating the accumulated departure of each year of rainfall relative to the long-term average annual rainfall at this rain gage. The purpose of this analysis is to help identify trends in rainfall over time. Review of the graph on Figure 2B reveals:

- Whenever the graph ascends upward to the right, such as the period of 1976 through 1983 on the rainfall curve, a period of above-average rainfall (i.e., an overall "wet" period) has occurred. That is, on average, most individual years of annual rainfall in this period were at or above the long-term average for rainfall. Wet periods during the period of available data for this gage are denoted with a "W" on Figure 2B
- Whenever the graph descends downward to the right (e.g., 1944 through 1976), an overall period of below average (deficient) rainfall has occurred. That is, on average, most individual years of annual rainfall during this period were at or below the long-term average rainfall. Periods of deficient rainfall for this rainfall gage are marked with a "D" on Figure 2B.

Groundwater Extractions

Figure 3, "Total Annual Groundwater Extractions, Sylmar Basin", provides a bar chart to summarize the total annual groundwater extractions (i.e., by Water Year) by the cities of Los Angeles and San Fernando from the Sylmar Basin, as reported in the historic Annual ULARA Watermaster Reports; the graphed data begin with the 1973-74 water year. The total extraction is comprised by the groundwater pumping from active water wells owned by both the City of Los Angeles and the City of San Fernando. As shown on Figure 3, the total groundwater extractions during this graphed period ranged from a low of 3514 AF in the 1992-93 water year, to a high of 8064 AF during the 1998-1999 water year. Also shown on Figure 3 is a short horizontal line denoting the safe yield value for each group of years for which each respective year the particular safe yield value was applicable. As can be seen on Figure 3, annual groundwater

extractions from the Sylmar Basin have often exceeded the prior safe yield determined by the two prior Watermasters, particularly in the early portion of the record.

A summary of the annual groundwater extractions by both cities, on a Water Year basis, from 1973-74 through 2009-10, is shown on Table 3, "Summary of Groundwater Extractions – Sylmar Basin". Readily noticed on Table 3 (and Figure 3) is that the total annual groundwater extractions by both parties in several prior years have exceeded even the current total safe yield value for Sylmar Basin of 6,810 AF/yr. For example, in 1977-78, 1980-81 and 1998-99, total combined groundwater extractions by the 2 cities were 7,109 AF/yr, 7,497 AF/yr, and 8,064 AF/yr, respectively. As discussed below under "Water Level Data", water levels in existing wells for which long-term data are available have either remained relatively stable or have even risen (i.e., become more shallow) over time, in spite of the fact that total groundwater extractions had occasionally exceeded the then-existing safe yield value for this basin.

The unusually low total annual volume of groundwater pumpage by both cities shown on Table 3 for 2008-09 (4,341 AF) and 2009-10 (5,687 AF) is noted herein to be mainly a result of the known groundwater contamination in Sylmar Basin. That is, the detection of nitrate (as NO_3) in certain City of San Fernando wells, and the detection of trichloroethylene (TCE, a volatile organic compound) in certain City of Los Angeles wells at concentrations that have been near or above their respective CDPH Primary Maximum Contaminant Levels (MCLs), have caused both cities to curtail or otherwise reduce their annual groundwater extractions from this basin.

Water Level Data

For this project, the Watermaster has acquired long-term data for static (non-pumping) water levels that are available for existing water wells owned by LADWP and the City of San Fernando; these water levels are considered to represent depths to the confined (piezometric or pressure) surface in the Saugus Formation, due to the fact that available data for these wells show they all are perforated solely within this formation. These water level data have then been graphed for each well versus the accumulated rainfall departure curve (adapted from Figure 3B herein) and also versus the total combined annual groundwater extractions by both LADWP and the City of San Fernando onto Figures 4A.1 through 4E.2 for LADWP wells and Figures 5A.1 through 5D.2 for the City of San Fernando wells. Also shown on the right side of each figure, based on information listed on the driller's log (if available) for each well, is a schematic of the well casing and casing perforation depths (if known); Tables 1 and 2 summarize the known (available) construction data for each well owned by the cities of San Fernando and Los Angeles, respectively.

Key items shown on these figures for water levels vs. accumulated rainfall departure include:

a. Water levels fluctuate both seasonally and from year to year in each well.
b. Seasonal fluctuations vary by well but typically display a maximum of 10 to 15 ft of water level decline from the spring high to the fall low of each year.

c. Over time, from year to year, water levels tend to respond to changes in the accumulated rainfall departure curve. That is, when the red-colored rainfall departure curve on the figures (see, for example, Figure 5A.1) ascends to the right (i.e., a period of above-average rainfall), the water levels in the well rise over time; see for example the period of 1992 to 1999. Conversely, when the accumulated rainfall departure curve descends to the right, the water levels in the wells tend to decline over time (see, for example, the period of 1965-1977 on Figure 4A.1).
d. Most importantly, none of the hydrographs for any of the LADWP or City of San Fernando wells show a long-term, progressive or increasing rate of decline over time. In fact, current water levels in virtually all of the wells for which hydrographs have been prepared are at or near the water level highs dating from the earliest available data of the 1960s. This is reasonable evidence to indicate that overdraft is not occurring in Sylmar Basin at this time.

In regard to the remaining graphs which show water levels versus the total combined annual groundwater extractions by both LADWP and the City of San Fernando, there does not appear to be any strong correlation between the combined annual pumping by all wells and the resulting water levels in any single well. Some of the large fluctuations in seasonal water levels (see Figure 4D.1, for LADWP Mission Well #5, for example) likely result from the monitoring of partial water level recovery data and/or an actual pumping water level, rather than a true non-pumping static water level. Such data could readily result from long-term, continuous operational use of these wells (and with only short periods of non-pumping), and/or from the monitoring of a non-pumping water level that has been impacted by mutual water level drawdown interference from a nearby, actively-pumping well.

New Groundwater Monitoring Wells

As part of the October 11, 2006 Court stipulation discussed above, two new groundwater monitoring wells were constructed near the Sylmar notch in October 2007, via a contract between the City of San Fernando and the drilling contractor that was awarded the bid (Water Development Corporation). These 2 new monitoring wells, as seen on Figure 1B, include: Well MW-1 (south well), and MW-2 (north well). A packet of data for each of these two monitoring wells, including a driller's log for each well, was provided to the Watermaster by LADWP; those two data packets are provided in the appendix of this report.

Well MW-1, the southernmost of the 2 monitoring wells for the Sylmar notch (see Figure 1B), was constructed to a depth of 121 ft below ground surface (ft bgs), and contains perforations between the depths of 56 ft bgs and 111 ft bgs. Well MW-2 (the northernmost of the 2 monitoring wells) was constructed to a depth of 125 ft bgs, with casing perforations between the depths of 60 ft and 115 ft bgs. Drill cuttings of the earth materials encountered during drilling of each monitoring well were logged only by the drilling contractor; a geophysical electric log survey was not performed in either borehole. A cement sanitary seal was provided in each

monitoring well to a depth of 50 ft bgs and 54 ft bgs, respectively. As discussed above, the purpose of the wells was to allow for the measurement of the water level in the alluvium in the area of the Sylmar notch. However, because the cement sanitary seals in these monitoring wells were placed to depths deeper than the reported thickness of the alluvium in this notch (estimated to be ±40 ft in the Report of Referee), then the monitoring wells cannot measure the water levels directly and solely within the alluvium. But, because the alluvium and the underlying Saugus Formation are likely to be in hydraulic communication in the area of this notch, then the water level data from MW-1 and MW-2 may represent a reasonable estimate of the elevation of the water level surface in the alluvial sediments in the area of the Sylmar notch.

Water level data collected over time for these two monitoring wells, using either manual electric tape water level sounders and/or automatically-recording water level pressure transducers, are presented as hydrographs on Figure 6, "Water Level Measurements, Groundwater Monitoring Wells, Sylmar Basin". To the right of the hydrographs, the casing construction data for the two monitoring wells are shown. Unfortunately, due to multiple instances of transducer malfunction, and a lack of regular manual water level monitoring, the water level data records for both MW-1 and MW-2 are somewhat sparse over time. As shown on Figure 6, the transducer equipment originally purchased and installed in May 2010 by LADWP personnel functioned properly for less than two months. Thereafter, in September 2011, the Assistant Watermaster installed a new transducer in each of these monitoring wells to once again begin the automatic collection of water level data at these sites.

Available data on Figure 6 show that water levels in both monitoring wells have varied over time. Further, and recognizing that the transducer data are more accurate and consistent than the early manual water level measurements of December 2007, water levels in the 2 monitoring wells are seen to have risen 10 to 15 ft in each well between mid-2009 and late-2011. Also, the two short segments of transducer data show curve shapes that appear similar to those resulting from the recovery of water levels over time. Based on the shape of the curves, it appears that water levels in the monitoring wells are affected by nearby municipal-supply wells owned by LADWP and/or the City of San Fernando. Because the water level records for these two monitoring wells show a dynamic water level surface that fluctuates during the year, then it can be reasonably assumed that the groundwater surface elevation is variable within the Sylmar notch. The fact that the Report of Referee (Appendix P, 1962), the 1979 Judgment, and even the March 29, 2006-dated letter by the former Watermaster (Mr. Mackowski) all mention changes in the amount of underflow through the Sylmar and Pacoima notches further corroborates the existence of fluctuating groundwater levels in both the Sylmar and Pacoima notches (see below).

Other Groundwater Outflows

In addition to the annual groundwater extractions by each party (city) shown on Figure 3 and Table 3, groundwater is also known to leave Sylmar Basin via subsurface outflow through the

shallow alluvial sediments which have been deposited in the Sylmar and Pacoima notches (see notch locations on Figure 1B).

- *Sylmar Notch*

  To calculate the subsurface outflow from the Sylmar Groundwater Basin into the San Fernando Groundwater Basin to the south, the subsurface geometry of the alluvium overlying the Saugus Formation within the Sylmar notch must be estimated. As described in the Report of Referee (Volume I, Text and Plates, by State Water Rights Board, Referee, 1962), the subsurface geometry within this notch was originally defined via an exploratory drilling program. For that program, twenty bucket auger boreholes were drilled in the area of the Sylmar notch at that time. During the auger work, representatives of the Referee were onsite to observe the drilling and log the drill cuttings. Based on the results of the logging, a profile (or cross section) of the Sylmar notch was created as shown on Plate 5H in the Report of Referee, Volume 1; the alignment of the original profile is shown on Plate 5 of the Report of Referee (neither of these original plates are included herein). However, that original profile was adapted herein onto Figure 7, "Profile of Sylmar Notch", for this safe yield re-assessment project. As shown on Figure 7, the alluvium is shown as a triangular-shaped wedge which overlies the potentially water-bearing strata within the Saugus Formation (refer to Figure 1B for location of this notch).

  The location of Sylmar notch monitoring Well MW-1 has been superimposed onto the Figure 7 profile to show its location relative to the boreholes drilled for the original subsurface exploration program for the 1962 Report of Referee. Also shown on Figure 7 are the perforated interval (shown in blue-green color), and the depth of the cement seal (shown in red color) in MW-1.

  Figure 7 has also been updated to illustrate five separate water level elevations measured historically for the area of the Sylmar notch. These measurements are for the following dates: May 1959; January 2006; December 2007; June 2010; and September 2011. The May 1959 water level is from the 1962 Report of Referee, whereas the remaining 4 water level elevations have been determined by the current Watermaster using more recent water level data acquired from newly-available sources. Below is a summary of each of the approximate groundwater level elevations displayed on Figure 7:

  - May 1959 – This water level elevation of 1090 ft above mean sea level (ft amsl) is taken from the Report of Referee, and was presented on the original Plate 5H in the 1962 document. As discussed in the Report of Referee, this water surface elevation was determined using water level data from the original exploratory drilling work described above. Using this water level elevation, the cross

sectional area of the saturated alluvium was calculated, along with other aquifer parameters in the Report of Referee (1962). This May 1959 water surface elevation was considered to be a "low groundwater surface condition" as stated in the Report of Referee, Volume II, Appendix P, page P-17. The text in the Report of Referee stated that, at this "low" groundwater surface elevation, the subsurface outflow through the Sylmar notch was about 300 AF/yr in 1959. Page P-17 in that same document further stated: underflow through this notch "for high groundwater surface conditions [was] estimated to be approximately 500 AF/yr"; and "an average value for the base period 1928-29 through 1956-57 is...400 AF/yr".

- January 2006 – Using available water level data from two shallow, privately-owned monitoring wells south of the Sylmar notch, a calculation was performed by this Watermaster to estimate the water level in the Sylmar notch in January 2006 to be 1070 ft amsl (see Figure 1B for the locations of the monitoring wells used); see also Figure A-1, "Calculation of Approximate January 2006 Water Level Elevation in the Sylmar Notch", in the Appendix for an explanation of the calculation. These water levels were collected from monitoring wells constructed by others as part of the characterization and/or cleanup of groundwater contamination in a nearby portion of the San Fernando Groundwater Basin; the Watermaster obtained these data from the Regional Water Quality Control Board – Los Angeles (RWQCB-LA). Inherent in this "new" water level elevation estimation is the assumption that the water table gradient south of the notch is constant between the locations of these two privately-owned monitoring wells for which water level data were available, and the Sylmar notch. Note that this January 2006 water level elevation reveals that, at the date of the water level measurements, the saturated area of the alluvium was much less than that in 1959 (see Figure 7). Therefore, subsurface flow through the notch was greatly reduced in January 2006, to only a small percentage of the average amount of 400 AF/yr that had been previously estimated by others from this notch.
- December 2007 – This water level surface elevation of 1058 ft amsl is based on the first manual measurements collected shortly after the two Sylmar notch monitoring wells were constructed. As shown on Figure 7, the elevation of this water surface was deeper than the bottom elevation of alluvium (i.e., it is below the base of the alluvium), and is interpreted to be within the Saugus Formation. Therefore, for this study, and because no other water level data exist for the alluvium, it is interpreted that when the elevation of the water surface for a particular year is deeper than the elevation of the base of the alluvium, there is no subsurface outflow from the Sylmar Basin to the San Fernando Basin.
- June 2010 – Based on the data collected by the LADWP transducer installed into the Sylmar notch Monitoring Well MW-1, a groundwater surface elevation of 1058 ft amsl is interpreted. At an elevation of approximately 1063 ft amsl, the

water level in MW-1 is interpreted to be lower than the basal elevation of the alluvium, and therefore this water level would represent the water surface within the immediately underlying Saugus Formation. As described above, this suggests that, at the June 2010 date of this water level measurement, no groundwater was moving through the alluvium within the Sylmar notch.

- September 2011 – Data collected from the Watermaster's transducers installed into the two Sylmar notch monitoring wells (MW-1 and MW-2) yield a recent groundwater surface elevation for this date of 1081 ft asl. As shown on Figure 7, this groundwater surface is slightly below the May 1959 groundwater surface elevation reported in the Report of Referee.

Although the water level record at the Sylmar notch is sparse, the available data clearly show that the elevation of the groundwater surface in the alluvium is variable within the notch; that is, water levels in that alluvial notch are known to fluctuate seasonally and also from year to year depending on seasonal and long-term changes and trends in rainfall. Also, water level data suggest that water level fluctuations in the notch may occur due to the pumping of nearby wells owned by LADWP and/or the City of San Fernando. Further, as shown on Figure 7, there have been a number of occasions when there was likely no subsurface flow through the alluvium within the notch, because the groundwater level surface elevation was actually lower than the elevation of the base of the alluvium in the notch (based on available monitoring well data). Hence, it appears that there are periods of time throughout the year when there is no subsurface flow through the Sylmar notch.

As discussed above, the original profile on Figure 7 shows the shape of the alluvial notch (in a light yellow color on the figure) to have the basic shape of an inverted triangle. This is important because as the groundwater elevation decreases in the notch, the saturated area of the alluvium decreases by a greater amount. Hence, decreases in groundwater surface elevation over time within the Sylmar notch can yield greatly-reduced subsurface flow volumes through the notch.

The 1962 Report of Referee (Appendix P, page P-17) computed underflow through this notch to be about 300 AF/yr in the "low groundwater surface conditions in 1959", and contrasted that value with the 500 AF/yr value they determined for "high groundwater conditions". For its 29-year base period of 1928-29 through 1956-57, the Report of Referee (p. P-17) estimated that the average groundwater underflow through the alluvium of Sylmar notch was about 400 AF/yr.

- *Pacoima Notch*

A smaller, less laterally-extensive, alluvial-filled notch known as the Pacoima notch occurs in the eastern part of the Sylmar Basin, in the area of the Pacoima Wash; Figure

1B shows the location of the Pacoima notch. A cross section of the Pacoima notch, which is shown on Plate 5H in the Report of Referee, Volume I (not included herein), reveals that this notch has a maximum alluvial thickness of 55 ft (see also page P-12, Appendix P, in Report of Referee). As stated in the Report of Referee, a submerged dam had been constructed in Pacoima notch many years prior to preparation of that report but, at the date of the Report of Referee, only the lower portion of this structure was still considered to remain. This remaining portion of the submerged dam has been, and will continue to be, considered to reduce the subsurface outflow of groundwater through this notch and into the San Fernando Basin to the south.

Pages P-15 and P-16 and Table P-3 in Appendix P of Volume II of the Report of Referee (not reproduced herein) reveal that underflow through the earth materials lying above the top of this remaining dam was calculated to range from 241 to 482 AF/yr and that the mean underflow for their 29-year base period of 1928-29 through 1956-57 was determined to be 160 AF/yr. Clearly, the annual amount (volume) of underflow through the alluvium in the Pacoima notch will vary, similar to that in the Sylmar notch, depending on water levels in the alluvium and rainfall recharge.

No groundwater monitoring wells have been constructed to date at/near the Pacoima notch.

Combined Underflow Leaving Sylmar Basin Through the Alluvial Notches

In summary, the average groundwater outflows through the two alluvial-filled notches, as calculated in the Report of Referee (Volume II, Appendix P) for the 29-year base period of 1928-29 through 1956-57 were 400 AF/yr for Sylmar notch and 160 AF/yr for Pacoima notch; hence the total average groundwater outflow to the south (based on the 1962-dated Report of Referee) from Sylmar Basin into the San Fernando Basin was estimated to be 560 AF/yr. Further, previous analyses by former Watermasters have kept the total combined average subsurface flows through the Sylmar and Pacoima notches at a constant value of 540 AF/yr during those prior times when they re-assessed the Sylmar Basin safe yield (see Table 4). As specifically reported by the former Watermaster, Mr. Mackowski, on page 3 of his March, 29, 2006 letter (which was reviewed by his consultant, Mr. Blevins), prior safe yield calculations for the Sylmar Basin have used a total underflow through both alluvial notches of "540 AF/yr, rather than 560 AF/yr stated in the Report of Referee." The reason for this 20-AF/yr decline in outflow was not identified in that document.

Groundwater Credits

Each Annual Watermaster Report for ULARA provides an ongoing calculation of the stored groundwater credits by the cities of Los Angeles and San Fernando in the Sylmar Basin. In the most recent such annual report (dated May 2012), the combined stored groundwater credits totaled 16,762 AF for both cities, as of October 1, 2011 (based on data from Water Year

2010/11); this value included credits of 1,500 AF for San Fernando and 15,262 AF for Los Angeles. The prior Watermaster, Mr. Mackowski, in his March 2006 letter to the Court, stated that the accrued groundwater credits totaled 8,787 AF as of October 1, 2005 (based on data from Water Year 2004/05). Hence, in the 6-year period of 2004/05 – 2010/11, the groundwater credits accrued by both cities increased by a total of about 7,975 AF; this calculates to an average rate (volume per year) for the accumulation of groundwater credits by the 2 cities of about 1,329 AF per year during this 6-year period. It is noteworthy and unusual that this average total rate (volume) of groundwater credits accrued by both cities in each of the past six years represents nearly 20% of the current annual safe yield value (6,805 AF/yr) of the entire Sylmar Basin.

The Judgment (Section 5.2.2.3), however, states that the accumulation of stored water credits "can be carried over for not to exceed five years, if the underflow through Sylmar notch does not exceed 400 acre-feet per year."

Conclusions

1. The safe yield of Sylmar Basin has been increased a few times since the 1962 date of the Report of Referee. Specifically, these previously-calculated values were 5,610 AF/yr in the Report of Referee, then 6,210 AF/yr for the 1979 Judgment, then 6,510 AF/yr in 1994/95 by then-Watermaster Mr. Blevins, and more recently 6,810 AF/yr in 2004/05 by then-Watermaster Mr. Mackowski (who was assisted at that time by his consultant Mr. Blevins).

2. Review of new water level data from the Sylmar notch monitoring wells by this Watermaster suggest that subsurface flow from the Sylmar Basin is variable throughout the year, and seems to be impacted primarily by changes in rainfall and recharge over time, and likely also by pumping activities from nearby wells. Hence, there can be times each year and from year to year that no subsurface outflow occurs into the San Fernando Basin to the south through the alluvium within the Sylmar notch (and perhaps through the alluvium in Pacoima notch also). Also, decreases in subsurface outflow through these 2 notches are not proportional to decreases in groundwater surface elevation due to the general V-shape of the alluvial sediments within each notch. Because of the geometry of both the Sylmar and Pacoima notches, decreases in groundwater elevation result in much greater decreases in subsurface outflow through these notches. Hence, this Watermaster believes that assigning a constant value for the total combined subsurface outflow of 540 AF/yr (or 560 AF/yr) through the Sylmar and Pacoima notches is an over-simplification of the subsurface outflow issue.

3. Water level data presented in hydrographs on Figures 4A.1 through 4E.2 and Figures 5A.2 though 5D.2 show that water levels in those municipal-supply wells have been relatively stable over most of the period of record. Importantly, fluctuations in water levels over time

have a clear correlation to changes in rainfall, as evidenced by the close relationship of the water levels on each hydrograph with trends in the accumulative rainfall departure curve over time. As such, it is the opinion of this Watermaster that overdraft is not occurring in the Sylmar Basin at this time.

4. Figure 3 shows the total extractions from the Sylmar Basin for the years of available record. Also shown on Figure 3 are the safe yield values calculated by others over time. Analysis of the graph shows that the total groundwater extractions by LADWP and the City of San Fernando have exceeded the current safe yield value of 6810 AF/yr during several prior individual years (e.g., 1977-78 and 1998-99) and also during at least one extended period of time (i.e., the 7-year period of 1977-78 through 1983-84; in fact, that 7-year period displayed an average production rate of 6,852 AF/yr). Despite these exceedances and as discussed in point 3 above, water level hydrographs show water levels in the basin have been and continue to be relatively stable over time, and fluctuate principally in response to changes in rainfall in the area. None of the hydrographs show any long-term, progressive or increasing rate of water level decline over time; hence, in the opinion of this Watermaster, and as stated above, the Sylmar Basin is not in a condition of overdraft at this time.

5. Because subsurface outflow of groundwater from the Sylmar Basin is now considered to have been overestimated in previous reports, and because water level trends for wells constructed in the Sylmar Basin have been relatively stable over time, then it is this Watermaster's opinion that the safe yield of the Sylmar Basin can be increased at this time.

   Table 4 "Prior and Current Watermaster Calculations, Sylmar Basin" provides the calculations for this increase in the safe yield value and also compares the current calculations to those by the 2 prior Watermasters. As shown on Table 4, the value on Item 6, "Subsurface outflow" has been reduced to 250 AF/yr from 540 AF/yr; this is a reduction of roughly 50% from all previously used values. This change is appropriate because: a total combined constant subsurface outflow of 540 AF/yr from the Sylmar and Pacoima notches has been determined to be an overestimate; and the groundwater surface elevation in the Sylmar notch has been shown to be highly variable, based on the water level data available to this re-assessment. Even though recent water level data are not available from water wells or groundwater monitoring wells at/near Pacoima notch, it can be reasonably assumed that groundwater levels and subsurface underflow through the Pacoima notch are as variable over time as they are in the Sylmar notch.

   Further, this Watermaster, in order to be consistent with prior studies, will accept, for the purpose of this safe yield re-assessment, the 35.7% value for the "percentage of delivered water becoming recharge", per Item 3 on Table 4 herein (as originally presented in the 1979 Judgment, p. 19, 1979).

6. As shown on Table 4 (Item 7), it is the current opinion of this Watermaster that the safe yield of the Sylmar Basin can be temporarily increased to 7,140 AF/yr at this time; this represents an increase of 330 AF/yr over the current total safe yield value for this basin. As a result, the cities of Los Angeles and San Fernando may each have the right to temporarily pump as much as 3,570 AF/yr (½ of 7,140 AF/yr) from their active wells in Sylmar Basin, based on the recognized 50%-50% share of the groundwater rights in this basin. This pumping may continue for the period of Water Years 2011-12 through 2015-16, unless in-progress data evaluation by the Watermaster reveals the basin is being adversely affected by this temporary increase in safe yield (e.g., in case of basin-wide declines in static groundwater levels).

7. Due to the existence of the 2 city-owned monitoring wells near the Sylmar notch (MW-1 and MW-2), and because a few other but more shallow privately-owned monitoring wells currently exist in/near this notch (these were constructed by others for local groundwater contamination sites), it is the opinion of this Watermaster that no additional monitoring wells need to be constructed for Sylmar notch at this time. This Watermaster will try to contact the owners of and consultants for the existing privately-owned groundwater monitoring wells near Sylmar Basin in an attempt to allow their monitoring wells to hopefully serve as future monitoring wells for the Watermaster, after all clean-up activities at those sites have been performed and the sites have been recommended for closure by the local regulatory agency.

   Due to the limited outflows expected through Pacoima notch, to the lack of publicly-drilled or privately-owned monitoring wells near this notch, and to current economic conditions, it is the opinion of this Watermaster that new monitoring wells are not required at/near this notch at this time.

8. This temporary increase in the safe yield of the Sylmar Basin can be considered useable for the next 5 years (Water Years 2011-12 through 2015-16), but ONLY with the following provisions:

   a. Groundwater credit accumulation will be suspended at the values presented in the May 1, 2012-dated Annual Watermaster Report (i.e., at the end of Water Year 2010-2011); this means that neither Party will accumulate any further groundwater credits for a period of time in the future (discussed below), even if they do not or cannot pump up to their safe yield value each year.

   b. Beginning in the WY 2011-12 Annual Watermaster report (to be published May 1, 2013), groundwater credits will begin to be calculated according to the Judgment; that is, credits can no longer be carried over for more than 5 years (Judgment, January 26, 1979; Subsection 5.2.2.3, p. 19-20). An example of this calculation

presented through the 2010-11 Water Year is shown on Table 5, "Proposed 5-Year Method for Accounting for Water Credits, Sylmar Basin."

c. To address the difference in credit accounting between the method prescribed in the Judgment, and the cumulative method previously used by the prior Watermasters, I have prepared Table 5, "Proposed 5-Year Method for Accounting for Water Credits, Sylmar Groundwater Basin". As shown on that table, the difference in the volumes of accumulated credits between the new 5-year calculation method and the previous cumulative calculation presented in prior Annual Watermaster Reports is 9014 AF for the City of Los Angeles and 404 AF for the City of San Fernando; refer to "C" in the "Summary" for each city on Table 5. These volumes now represent the maximum volume of the "frozen" credits for each City.

d. Moving forward, the difference in credits of 9014 AF and 404 AF for the City of Los Angeles and the City of San Fernando, respectively, will remain credited to each Party. Both Parties will be able to exercise their right to use those accumulated but now "frozen" groundwater credits. However, neither City will be able to exercise its 5-year credits, even if they do not or cannot pump their new safe yield value, until such time as their individual, newly "frozen" credits are used entirely.

   Hence, this Watermaster, solely for this safe yield re-assessment of the Sylmar Basin, and solely because these accrued credits are fairly small, is preserving these accumulated credits (as otherwise might not have occurred, per the requirements in the Judgment for Sylmar Basin).

   It should be noted that the 5-year provision for credit accrual in the Judgment for the Sylmar Basin was not known to this Watermaster until the process of re-assessing the safe yield of this basin had begun.

e. Groundwater credit accrual will resume for each individual Party once the total "frozen" groundwater credits described in point "c", above, are entirely consumed by each individual Party. This may take several years and will likely occur at different times for each Party. The Watermaster will account for both the remaining "frozen" credits and the new, 5-year credit calculation method in each future Annual Watermaster Report, beginning at the end of Water Year 2011-12, and will continue this accounting until such time as the "frozen" credits have been entirely consumed by each Party. After such time when the "frozen" credits are completely consumed by each City, credit calculation will switch to the ongoing 5-year credit calculation method, and this method will continue to be used for future Annual Watermaster Reports. Alternatively, at any time, either Party may permanently abandon its "frozen" credits and begin accessing its stored water credits accrued via the 5-year credit calculation method.

f. If a Party plans to pump in excess of its "new" safe yield value in any year, then that Party must notify the Watermaster in advance, or as is reasonably practical. In an emergency situation (such as unusual weather conditions or water system operations problems), and if a Party has no remaining credits, then the Watermaster may consider granting permission to that Party, in writing, to pump in excess of its safe yield so long as the unusual circumstances persist. However, when the unusual circumstances cease, the accumulated overextractions shall be replaced by underpumping within a 6-year period.

g. Pumping by either Party in any given single year cannot exceed its "new" safe yield value of 3570 AF by more than 600 AF. For the sole purpose of consuming "frozen" credits, either Party may exceed its own 600-acre foot allotment in a given year with the prior approval of the Watermaster. However, the sum of the overage extraction by both Parties in any given year must not exceed 1200 AF.

   As part of the determination process, the Watermaster may also communicate between the two Parties to obtain additional facts and information on such issues as the intent and ability of each Party to pump above its safe yield in a given Water Year.

   Based on the available facts, the Watermaster can make a decision to approve with or without conditions, or deny the request. The Watermaster may present the preliminary decision to both Parties and provide an opportunity for the Parties to respond with possible comments. This would be followed by a final, written determination by the Watermaster.

h. Static (non-pumping) water levels must continue to be monitored on a regular basis in all existing wells owned by LADWP and the City of San Fernando, and also in the 2 City-owned groundwater monitoring wells and in the other privately-owned monitoring wells at/near Sylmar notch.

i. Total groundwater production by each city must continue to be monitored on a regular basis in each active well, via a properly installed and accurately calibrated totalizer flow dial near each wellhead.

j. The acquired data are to be reviewed on a regular basis by the Watermaster and then analyzed for possible trends versus total groundwater extractions in the basin and also versus the accumulative rainfall departure curve.

k. If at any time during the forthcoming five years (i.e., from Water Year 2011-12 through 2015-16), the Watermaster determines that groundwater levels in the basin are declining and/or not responding to rainfall recharge, then the "new" safe yield of the Sylmar Basin may need to be re-evaluated and/or reduced as necessary.

Respectfully submitted,

Richard C. Slade,
ULARA Watermaster

THE CITY OF SAN FERNANDO

Appendix I: Sylmar Basin Judgment

City of San Fernando 2015 Urban Water Management Plan

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

THE CITY OF LOS ANGELES, Plaintiff, vs. CITY OF SAN FERNANDO, et al., Defendants.	No. 650079 STIPULATION AND ORDER RE SYLMAR BASIN PURSUANT TO SECTION 10.2 OF JUDGMENT

The City of Los Angeles by and through Ira Reiner, City Attorney, Edward C. Farrell, Chief Assistant City Attorney for Water and Power, Ralph Guy Wesson, Assistant City Attorney, the City of San Fernando by and through City Attorneys Rutan and Tucker, Robert S. Bower and Arthur G. Kidman, Kisag and Dean Mordigian by Lawrence M. Dougherty, and Meurer Eng., Inc., by Roger or Charles Meurer, stipulate that the Court may enter an order as provided herein with regard to the following facts.

1. The Judgment requires in Section 10.2 that the Watermaster notify the Court and parties in the event the Sylmar Basin becomes overdrafted due to pumping by Los Angeles and San Fernando.

2. On August 26, 1983, the Watermaster reported to the Court pursuant to Section 10.2 of the Judgment that the Sylmar Basin was in a condition of overdraft (Attachment 1). In response to the Watermaster's letter and a Minute Order of this Court (Attachment 2), the Cities of Los Angeles and San Fernando responded by letters to the Court (Attachments 3 & 4), agreeing with the Watermaster's report on overdraft.

3. The Court has determined that pumping from the Sylmar Basin shall be reduced to the safe yield (6210 AF/YR at present) of the basin, effective October 1, 1984.

4. Sections 5.1.2 and 5.2.2 of the Judgment provide for the rights of the parties. The private parties within the Sylmar Basin, Defendants Kisag Moordigian and Meurer Engr. (successor to Hersch and Plumb), have decreed overlying water rights. However, Mr. Moordigian has not pumped since 1956-57 and has disposed of most of the lands originally involved in this proceeding. Meurer Engr. has pumped less than 0.5 AF/YR. since 1975-76, but may increase this amount slightly in the future. Even though the combined pumping of these private parties has been less than one acre-foot per year, provision for their rights pursuant to Section 5.1.2.2 of the Judgment is made

in this stipulation. That pumping which occurs pursuant to the overlying rights of the private parties is to be subtracted from the safe yield, with Los Angeles and San Fernando pumping the remainder.

5. Parties, City of Los Angeles and City of San Fernando, agree that pumping within the Sylmar Basin must be brought within the safe yield, determined to be 6,210 AF/YR at present. The Cities of Los Angeles and San Fernando have rights to native waters and import return waters within the Sylmar Basin. Their combined water rights to native and imported waters (Sections 5.1.2.3. and 5.2.2.1 of the Judgment) are nearly equal. Each has pumped approximately one-half of the total safe yield of the said basin for the past 14 years (1968-69 through 1982-83). The City of Los Angeles and the City of San Fernando stipulate herein that the Court may enter an order limiting each City's pumping to the following amounts less-one half of any rights exercised in accordance with paragraph 4 herein:

City of Los Angeles - 3,105 AF/YR.

City of San Fernando - 3,105 AF/YR.

6. Section 10.2 of the Judgment requires that a notice of hearing be set for this matter. However, the parties herein stipulate to waive notice and

hearing as to the matter stated herein and to the order of court attached.

7. At the time of the entry of the Final Judgment (January 26, 1979), the Sylmar Basin was declared not to be in a condition of overdraft (Section 4.2.6.2). Thus, the Final Judgment did not provide for safe yield operations of said basin during unusual circumstances, such as dry years or water system problems.

The parties recognize the importance of preserving the Sylmar Basin as a water production and groundwater storage resource. Los Angeles and San Fernando seek to permit flexibility in the use of this resource without causing damage to the basin.

To provide for water shortages due to unusual circumstances, such as weather conditions or water system operational problems, Los Angeles and San Fernando shall have the right in any year to overextract from the Sylmar Basin an amount not to exceed 10 percent of their allowed pumping, as provided in Section 5 herein. The 10 percent annual overextraction may continue from year to year, accumulatively not to exceed 1,000 ac-ft. for each city, so long as the unusual circumstances persist. When the unusual circumstances cease, the accumulated overextractions shall be replaced by underpumping, and must be done within a 6 yr.

period. The amount of such underpumping will not be required to exceed 10 percent of the annual allowed pumping of any party.

The party desiring to overextract from the basin shall notify the Watermaster of the circumstances considered to be unusual and shall justify the need for overextractions. The Watermaster shall review the existence and cessation of unusual circumstances and shall in his discretion approve the required overextraction and replacement operations.

8. Pursuant to Section 8.2.10 of the Judgment, a recalculation of the safe yield can be requested by any party in the event such recalculation appears to be necessary in accordance with the Watermaster's findings set forth in his annual report to the parties and Court.

9. All parties to this stipulation may make application to the Court regarding further evaluation or review of the parties pumping activities.

10. In any year, Los Angeles and San Fernando each have the right to store water in the Sylmar Basin by direct spreading or in-lieu practice (underpumping). The party causing the water to be stored shall have a right to extract an equivalent amount of groundwater from said basin. In addition to the safe yield pumping provided for herein, the

right to recapture stored water can be carried over into successive water years.

11. Provisions of this stipulation, in effect, amend the Judgment entered on January 26, 1979. Specific sections that are affected include the following: 4.2.6.2, 5.1.2.4, 5.2.2.1, 5.2.2.3, 9.5, and 10.2. To the extent that any inconsistency may exist between this stipulation and provisions of the Final Judgment, the provisions of this stipulation shall prevail.

DATED: March 21, 1984

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EDWARD C. FARRELL, Chief Assistant
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STEPHEN R. POWERS, JR., Senior
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By _____
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and its Department of Water and Power

APPROVED:
The City of San Fernando

By _____
Mayor

Attest

_____
City Clerk

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

THE CITY OF LOS ANGELES, Plaintiff, vs. CITY OF SAN FERNANDO, et al., Defendants.	No. 650079 ORDER OF COURT RE SYLMAR BASIN PURSUANT TO SECTION 10.2 OF JUDGMENT

Good cause appearing therefore and the court having reviewed the stipulation herein presented to the Court, and having fully approved the facts and settlement set forth therein, it is ordered, effective October 1, 1984, that:

1. The Cities of Los Angeles and San Fernando shall be limited in their pumping to bring the total pumping within the safe yield of the basin, less any rights exercised by the private parties, as follows:

   City of Los Angeles - 3,105 AF/YR.

   City of San Fernando - 3,105 AF/YR.

2. It is ordered that during years of unusual circumstances (as stated in paragraph 7 of the

stipulation), the parties (Los Angeles and San Fernando) shall have the right in any year to overextract from Sylmar Basin an amount not to exceed 10 percent of their allowed pumping, as set forth in paragraph 1 above.

The 10 percent overextraction may continue from year to year, accumulatively not to exceed 1,000 ac-ft, for each city, so long as the unusual circumstances continue. When the unusual circumstances cease, the accumulated overextraction shall be replaced by underpumping, and must be done within a 6 yr. period. The amount of such underpumping will not be required to exceed 10 percent of the annual allowed pumping of any party. The Wastermaster shall review the existence and cessation of these unusual circumstances (as detailed in paragraph 7 of the stipulation) and shall approve the required overextraction and replacement operations.

3. Any party to this stipulation may make application to the Court regarding pumping amounts stipulated hereto in the event hydrologic conditions in the Sylmar Basin change.

4. In any year, Los Angeles and San Fernando each have the right to store water in the Sylmar Basin by direct spreading or in-lieu practices (underpumping). The party causing the water to be stored shall have a right to extract an equivalent

amount of groundwater from said basin. In addition to the safe yield pumping provided for herein, the right to recapture stored water can be carried over into successive water years.

5. The Final Judgment, entered on January 26, 1979, is amended pursuant to changes set forth in this stipulation. The sections of the Judgment affected are listed in paragraph 11 of the stipulation.

DATED: March 22, 1984

HONORABLE HARRY L. HUPP
JUDGE OF THE SUPERIOR COURT

