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Urban Water MANAGEMENT PLAN

FINAL

June 2017

Prepared by:





Mission

To provide an adequate supply of quality water at the most reasonable cost to the present and future customers within the Goleta Water District

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Table of Contents

Chapter 1 Introduction1

1.1 Purpose.....2

1.2 Implementation of the UWMP3

Chapter 2 District Setting7

2.1 System Description.....7

2.2 Climate7

Chapter 3 System Water Use9

3.1 Estimated Population Growth9

3.2 Current and Historical Water Demand9

3.3 Projected Water Demand 11

Chapter 4 Baselines and Targets.....15

4.1 Water Conservation Act and UWMP Requirements 15

4.2 Baseline and Target Development.....16

4.3 Target Compliance20

Chapter 5 System Supplies.....23

5.1 Cachuma Project Water.....23

5.2 State Water Project Water23

5.3 Groundwater.....25

5.4 GWD Supply Management Requirements26

5.5 Wastewater and Recycled Water.....28

5.6 Transfers and Exchanges.....28

5.7 Current and Projected Water Supply29

5.8 Planned Water Supply Projects and Programs29

5.9 Desalinated Water30

Chapter 6 Recycled Water31

6.1 Recycled Water System Description.....31

6.2 Recycled Water Demand.....32

Chapter 7 Water Quality37

7.1 Cachuma Project and SWP Water.....37

7.2 Groundwater.....37

7.3 Water Quality Impacts on Reliability38

Chapter 8 Water Supply Reliability.....39

8.1 Reliability of Supplies39

8.2 Supply and Demand Comparisons41

8.3 Climate Change.....43

Chapter 9 Water Demand Management Measures.....49

9.1 Water Waste Prevention Ordinance.....49

9.2 Metering50

9.3 Conservation Pricing50

9.4 Public Education and Outreach51

9.5 Programs to Assess and Manage Distribution System Real Loss.....52

9.6 Water Conservation Program Coordination and Staffing Support52

9.7 Other53

Chapter 10 Water Shortage Contingency Plan57

10.1 Planning57

10.2 Stages of Action to Respond to Water Shortages58

10.3 Penalties for Excessive Use64

10.4 Financial Impacts of Actions during Shortages64

10.5 Mechanisms to Determine Reduction in Water Use.....65

10.6	Minimum Water Supply Next Three Years.....	66
Chapter 11 References		67

List of Tables

Table 1-1: DWR Table 2-1: Public Water Systems	1
Table 1-2: DWR Table 2-2: Plan Identification.....	1
Table 1-3: DWR Table 2-3: Agency Identification	2
Table 1-4: DWR Table 2-4: Water Supplier Information Exchange	5
Table 1-5: Agency Coordination Summary	5
Table 1-6: DWR Table 10-1: Notification to Cities and Counties.....	5
Table 1-7: Public Participation Timeline.....	6
Table 2-1: Climate Data for Goleta Water District	8
Table 3-1: DWR Table 3-1: Population – Current and Projected.....	9
Table 3-2: Historical Water Deliveries (AF)	10
Table 3-3: Historical Sales to Other Water Agencies (AFY)	10
Table 3-4: DWR Table 4-4: 12 Month Water Loss Audit Reporting (2015).....	11
Table 3-5: DWR Table 4-1: Demand for Potable and Raw (Chlorinated) Water – Actual (2015).....	11
Table 3-6: DWR Table 4-2: Demand for Potable and Raw Water – Projected (2020 to 2035) (AFY)	13
Table 3-7: DWR Table 4-3: Total Water Demand	14
Table 3-8: DWR Table 4-5: Inclusion in Water Use Projections	14
Table 4-1: 1995 to 2015 UWMP Population Estimates	18
Table 5-1: DWR Table 6-1: Groundwater Volume Pumped (AF).....	26
Table 5-2: DWR Table 6-8: Water Supplies – Actual 2015	29
Table 5-3: DWR Table 6-9: Water Supplies – Projected.....	29
Table 5-4: DWR Table 6-7: Expected Future Water Supply Projects or Programs	30
Table 6-1: DWR Table 6-2: Wastewater Collected Within Service Area in 2015.....	31
Table 6-2: DWR Table 6-3: Wastewater Treatment and Discharge within Service Area in 2015	32
Table 6-3: DWR Table 6-4: Current and Projected Recycled Water Direct Beneficial Uses within Service Area	33
Table 6-4: DWR Table 6-5: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual	33
Table 6-5: DWR Table 6-6: Methods to Expand Future Recycled Water Use	35
Table 8-1: Factors Resulting in Inconsistency of GWD Supplies	39
Table 8-2: DWR Table 7-1: Basis of Water Year Data	41
Table 8-3: DWR Table 7-2: Average Year Supply and Demand Comparison (AFY).....	42
Table 8-4: DWR Table 7-3: Single Dry Year Supply and Demand Comparison (AFY)	42
Table 8-5: DWR Table 7-4: Multiple Dry Years Supply and Demand Comparison (AFY)....	43
Table 8-6: Impacts of Climate Change on the Santa Barbara Region by 2100 ¹	44
Table 8-7: Prioritized Regional Climate Change Vulnerabilities	45
Table 9-1: GWD Operating Revenues	51
Table 9-2: Summary of School Education Programs	52
Table 9-3: Residential Water Surveys and Device Distribution	53
Table 10-1: Drought Stage Declarations and Restrictions Timeline.....	57
Table 10-2: DWR Table 8-1: Stages of Water Shortage Contingency Plan.....	59
Table 10-3: DWR Table 8-3: Stages of WSCP– Consumption Reduction Methods	60
Table 10-4: DWR Table 8-2: Restrictions and Prohibitions on End-Users	62

Table 10-5: Penalties for Excessive Use64
Table 10-6: Drought Surcharge65
Table 10-7: DWR Table 8-4: Anticipated Minimum Supply Next Three Years (AFY).....66

List of Figures

Figure 1-1: Goleta Water District Service Area 4
Figure 4-1: 1995 to 2015 UWMP Population Estimates.....18
Figure 5-1: Goleta Water District Groundwater Basin & Surface Water Facilities.....24

Appendices

Appendix A - UWMP Checklist and Tables
Appendix B - Submittals and Notifications
Appendix C - Public Outreach Materials
Appendix D - SBX7-7 Verification Form
Appendix E - Notice from DWR Approving Alternative Population Calculation
Appendix F - Groundwater Management Plan
Appendix G - Wright Judgement
Appendix H - 2013-2014 CUWCC BMP Reports
Appendix I - Drought Preparedness and Water Shortage Contingency Plan and Related Resolutions and Ordinances

List of Abbreviations

Act	California Urban Water Management Planning Act
AF	Acre-feet
AFY	Acre-feet per year
AWWA	American Water Works Association
BMP	Best Management Practice
CAFR	Comprehensive Annual Financial Report
CCR	Consumer Confidence Reports
CCWA	Central Coast Water Authority
CDM WTP	Corona del Mar Water Treatment Plant
CII	Commercial-industrial-institutional
COMB	Cachuma Operation and Maintenance Board
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DCR	2015 DWR State Water Project Delivery Capability Report
Delta	Sacramento-San Joaquin River Delta
DMM	Demand Management Measure
DPWSCP	Drought Preparedness and Water Shortage Contingency Plan
DWR	California Department of Water Resources
ELT	Early Long Term
EPA	Environmental Protection Agency
ETo	Evapotranspiration
GIS	Geographic Information System
GPCD	Gallons per capita per day
GSD	Goleta Sanitary District
GWD	Goleta Water District
GWSD	Goleta West Sanitary District
HCF	Hundred cubic feet
ID#1	Santa Ynez River Water Conservation District Improvement District #1
MGD	Million gallons per day

MOU	Memorandum of Understanding Regarding Water Conservation in California
NMFS	National Marine Fisheries Service
Regional Board	Central Coast Regional Water Quality Control Board
R-GPCD	Residential gallons per capita per day
RWEP	Regional Water Efficiency Program
SAFE	Safe Water Supplies Ordinance
SBCAG	Santa Barbara County Association of Governments
SBCWA	Santa Barbara County Water Agency
SBX7-7	Water Conservation Act of 2009
SFR	Single Family Residential
SWP	California State Water Project
SWPP	Supplemental Water Purchase Program
SWRCB	State Water Resources Control Board
TDS	Total dissolved solids
UCSB	University of California Santa Barbara
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
WSCP	Water Shortage Contingency Plan
WWTP	Wastewater Treatment Plant

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Chapter 1 Introduction

This report presents the 2015 Urban Water Management Plan (UWMP) for the Goleta Water District (GWD or the District) service area. This section describes the general purpose of the UWMP, discusses UWMP implementation, and provides general information about GWD and its service area.

GWD is a County Water District operating pursuant to the provisions of the California Water Code. GWD was formed in 1944 to take advantage of the water supply to be developed by the Federal Cachuma Project on the Santa Ynez River. GWD initially relied on local groundwater until the Cachuma Project began making deliveries in 1955. Except for water years 2014/15 and 2015/16 (drought years), the Cachuma Project has served as GWD’s primary water supply source. As described more fully in this document, GWD water supplies also include water from the State Water Project (SWP), recycled water, and groundwater.

GWD is located in the South Coast portion of Santa Barbara County with its western border adjacent to El Capitan State Park, its northern border along the foothills of the Santa Ynez Mountains and the Los Padres National Forest, the City of Santa Barbara to the east, and the Pacific Ocean to the south (Figure 1-1). The service area encompasses approximately 29,000 acres, and a population of approximately 87,000.¹ The GWD service area includes the City of Goleta, University of California, and Santa Barbara Airport; the remainder of GWD’s service area is in unincorporated County of Santa Barbara. La Cumbre Mutual Water Company is located within the GWD service area, but has its own supply, water distribution facilities, and customers, and is not served by the GWD. Table 1-1, Table 1-2, and Table 1-3 identify GWD and provide basic information on the type of UWMP contained in this document. **All volumes of water throughout this UWMP are reported in acre feet (AF) unless noted otherwise.**

Table 1-1: DWR Table 2-1: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
4210004	Goleta Water District	16,195	7,550 (see note)

Note: The table, per State guidelines, provides information on municipal connections only (i.e., residential, commercial, institutional) and excludes agricultural customers and usage.

Table 1-2: DWR Table 2-2: Plan Identification

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

¹ Population figures for the GWD service area were determined under the 2010 UWMP using 1990, 2000, and 2010 Census information, analyzed through Geographic Information System (GIS) software. The GWD provides water service to approximately 82,600 residents, according to DWR’s latest population tool method incorporated into this UWMP, which excludes populations within the GWD service area that are served by the La Cumbre Mutual Water Company.

Table 1-3: DWR Table 2-3: Agency Identification

Type of Agency	
<input type="checkbox"/>	Agency is a wholesaler
<input checked="" type="checkbox"/>	Agency is a retailer
Fiscal or Calendar Year	
<input checked="" type="checkbox"/>	UWMP Tables Are in Calendar Years
<input type="checkbox"/>	UWMP Tables Are in Fiscal Years
Units of Measure Used in UWMP	
Unit	Acre feet (AF)

1.1 Purpose

An UWMP is a planning tool that generally discloses the actions of water management agencies. Every five years, water suppliers such as GWD are required to update the UWMP.² It provides managers and the public with a broad perspective on several water supply and demand issues. An UWMP is not a substitute for project-specific planning documents, nor was it intended to be when mandated by the State Legislature. For example, the Legislature mandated that an UWMP include a section that “describes the opportunities for exchanges or water transfers on a short-term or long-term basis.” (California Urban Water Management Planning Act, Article 2, Section 10630(d).) The identification of such opportunities, and the inclusion of those opportunities in a general water service reliability analysis, neither commits a water management agency to pursue a particular water exchange or transfer opportunity, nor precludes a water management agency from exploring exchange/transfer opportunities not identified in the UWMP. When specific projects are chosen to be implemented, detailed project plans are developed, environmental analysis, if required, is prepared, and financial and operational plans are detailed.

In short, this UWMP is a management tool, providing a framework for potential action, but not functioning as a detailed project development or action plan. **It is important that this UWMP be viewed as a long-term, general planning document, rather than as an exact blueprint for supply and demand management.** Specific supply and demand management strategies are recommended and implemented pursuant to the GWD Water Supply Management Plan. Water management in California is not a matter of certainty, and planning projections may change in response to several factors. From this perspective, it is appropriate to look at the UWMP as a general planning framework, not a specific action plan. **Consultation with the GWD on water availability is required for all projects.** The UWMP is an effort to generally answer a series of planning questions including:

- What are the potential sources of supply and what is the reasonable probable yield from them?
- What is the probable demand, given a reasonable set of assumptions about growth and implementation of standard water management practices?
- Do supply and demand forecasts show reasonable balance, assuming that the various probable supplies will be pursued by the implementing agency?

Using these “framework” questions and resulting answers, GWD will pursue feasible and cost-effective options and opportunities to meet demand. Specific planning efforts will be undertaken regarding each option, involving detailed evaluations of how each option would fit into the overall supply/demand framework, how each option would affect the environment, and how each option would affect customers.

² California Water Code Section 10610 et seq. Water providers must prepare an UWMP if they sell over 3,000 AF of water per year or have over 3,000 service connections.

The objective of these more detailed evaluations would be to find the optimum mix of conservation and supply programs to ensure the needs of GWD's customers are met.

The California Urban Water Management Planning Act (Act) requires preparation of a plan that:

- Demonstrates water supply planning over a 20-year period in five-year increments. (GWD is going beyond the requirements of the Act by developing a plan that spans 25 years to facilitate preparation of grant applications and other planning).
- Identifies and quantifies adequate water supplies, including recycled water, for existing and future demand, in normal, single-dry, and multiple-dry years.
- Implements conservation and efficient use of urban water supplies.

A checklist to ensure compliance of this UWMP with the Act requirements and copies of all the DWR required tables are provided in Appendix A.

In short, the UWMP answers the question: Do forecasts demonstrate adequate water supplies for GWD's service area in future years, and what mix of programs could be explored for making any additional water available?

GWD's mission is to provide an adequate supply of quality water to the present and future customers within the GWD service area. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the UWMP demonstrates that GWD is likely to achieve this goal over the next five years, given prevailing conditions. Under the Safe Water Supplies Ordinance (SAFE), whereby GWD is required to consider the availability of potable water supplies available for new customers every year, the 2016 Water Supply Management Plan, and the 2015 Groundwater Management Plan, GWD is well-positioned to monitor the pace of increasing water demand against supplies, climate considerations, or other factors that could impact its ability to achieve its core mission.

1.2 Implementation of the UWMP

This subsection provides the cooperative framework within which the UWMP will be implemented, including agency coordination, public outreach, and resources maximization.

1.2.1 Agency Coordination and Public Outreach

As described earlier, GWD provides water to the City of Goleta, the University of California, the Santa Barbara airport (City of Santa Barbara property), and unincorporated portions of Santa Barbara County. These land use entities were notified of the GWD 2015 UWMP update. The District informed its wholesale suppliers, Central Coast Water Authority and Cachuma Operation and Maintenance Board, of projected water use in accordance with California Water Code (CWC) 10631 as shown in Table 1-4. Agency coordination for this UWMP is summarized in Table 1-5 and notification to cities and counties is shown in Table 1-6. Copies of notifications and submittals are included in Appendix B. Table 1-7 presents a timeline for public participation during the development of the UWMP. GWD notified agencies within its service area, including the City of Goleta, City of Santa Barbara, Santa Barbara County, and the University of California of the opportunity to provide input regarding the Plan. Copies of the public outreach materials, including website postings and invitation letters, are included in Appendix C. The materials encourage 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.

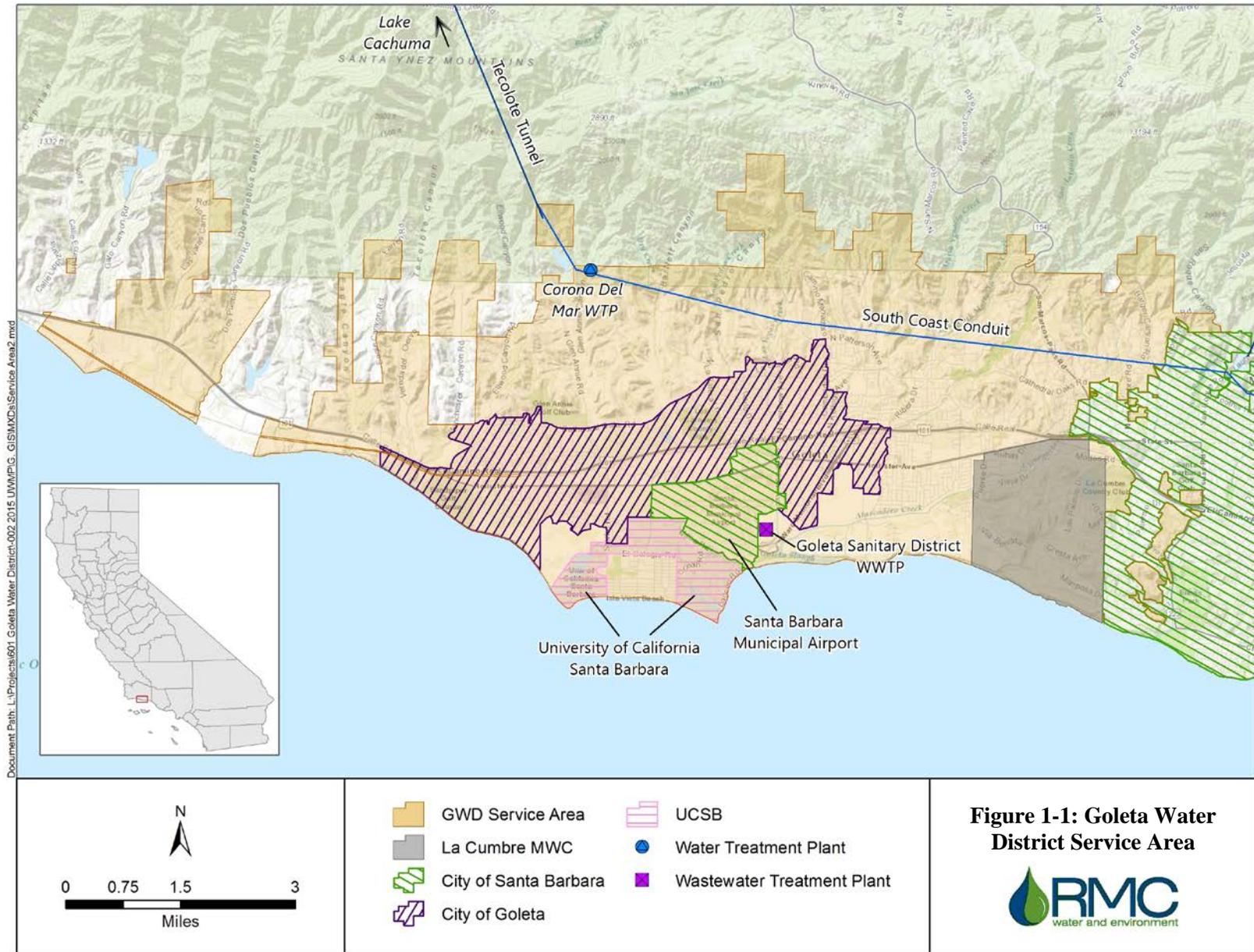


Table 1-4: DWR Table 2-4: Water Supplier Information Exchange

The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name
Central Coast Water Authority
Cachuma Operation and Maintenance Board

Table 1-5: Agency Coordination Summary

	Received Copy of Draft	Contacted for Assistance	Sent Notice of Intent to Adopt	Attended Public Meetings	Commented on Draft
City of Goleta	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
County of Santa Barbara	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
City of Santa Barbara	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Cachuma Operation and Maintenance Board	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Central Coast Water Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Goleta Sanitary District	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
La Cumbre Mutual Water Company	<input checked="" type="checkbox"/>				
University of California Santa Barbara	<input checked="" type="checkbox"/>				

Table 1-6: DWR Table 10-1: Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
City of Goleta	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Santa Barbara	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
County Name	60 Day Notice	Notice of Public Hearing
Santa Barbara County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Table 1-7: Public Participation Timeline

Date(s)	UWMP Aspect	Action
April - June	Public Draft UWMP	Public Draft available for public review
4/20/2017, 5/18/2017	Draft UWMP	Review and input to Draft UWMP by Water Management and Long-Range Planning Committee
6/13/17	Public Hearing	Board adoption of 2015 UWMP per Resolution
6/30/17	Final UWMP	Final UWMP released

The components of public participation included:

- Local Media
 - Paid notice in the Santa Barbara News Press
- Agency Outreach
 - City of Goleta
 - Santa Barbara County
 - UC Santa Barbara
 - City of Santa Barbara
 - La Cumbre Mutual Water Company
 - Goleta Sanitary District
- Public Availability of Documents
 - GWD website
 - GWD Administrative Headquarters

Following adoption, the UWMP will be available to the public during normal business hours at GWD administrative headquarters located at 4699 Hollister Avenue, Goleta, CA 93110. This UWMP will be submitted electronically to the Department of Water Resources (DWR) by June 30, 2017.

1.2.2 Resources Maximization

As documented in Chapters 3 through 10 of this UWMP, GWD has demonstrated a long-term commitment to resource maximization and conservation. For many years, GWD has undertaken studies as well as actions to maximize the use of available resources. Studies and documents include the 2010 Water Conservation Plan, 2011 and 2017 Water Supply Management Plans, Sustainability Plan, Infrastructure Improvement Plan 2015-2020, 2014 Drought Preparedness and Water Shortage Contingency Plan, and the 2015 Groundwater Management Plan. GWD is also preparing a Potable Reuse Facilities Plan, and is finalizing a draft Stormwater Resources Plan. Further, GWD has been trying to maximize the use of available resources while minimizing the use of imported water. In 1994, GWD became a participant in the Memorandum of Understanding Regarding Water Conservation in California (MOU), and a member of the California Urban Water Conservation Council (CUWCC). Signatories pledge to implement all cost effective Best Management Practices (BMPs) set forth in the MOU.

This UWMP, along with the above listed planning documents, will be used by GWD staff to guide water use and management efforts through 2035, subject to changing conditions as identified in required five-year updates of the UWMP.

Chapter 2 District Setting

This chapter provides a brief description of the District's water system and local climate conditions.

2.1 System Description

GWD is located in the South Coast portion of Santa Barbara County. The service area encompasses approximately 29,000 acres, and provides water service to approximately 82,600 residents. There are more than 16,400 active municipal and industrial customer accounts and 160 agricultural accounts within GWD. GWD serves water to the City of Goleta, University of California, and Santa Barbara Airport; the remainder of GWD is in the unincorporated County of Santa Barbara. La Cumbre Mutual Water Company is located within the GWD service area, but manages its own supplies, facilities, and customers, and is not served by GWD.

GWD was formed by a vote of the people within the service area on November 17, 1944. GWD was established as a legal entity to represent the Goleta Valley and to contract with the Santa Barbara County Water Agency and the United States Bureau of Reclamation (USBR) to participate in the Cachuma Project. The Santa Barbara County Water Agency was formed in 1945 and soon thereafter contracted with USBR to develop the Cachuma Project.

GWD has multiple sources of water supply, including the Cachuma Reservoir (which captures Cachuma Project water), groundwater, SWP water, and recycled water. During the 1987 to 1992 drought, it became evident that Lake Cachuma would not be able to supply enough water in the event of a prolonged drought. In 1991, GWD customers voted to import SWP water, and authorized GWD to participate in the SWP through the SAFE Ordinance. Thereafter the Central Coast Water Authority (CCWA) was formed in 1991 through a Joint Exercise of Powers Agreement among nine public agencies in Santa Barbara County, including GWD. CCWA was specifically formed for the purpose of designing, building and operating the facilities needed to deliver water from the SWP to entities in Santa Barbara County.

GWD's distribution system includes over 270 miles of pipelines ranging in size from two inches to 42 inches in diameter. Water from Cachuma Reservoir and the SWP is treated at the Corona Del Mar Water Treatment Plant (CDM WTP). GWD maintains eight (8) reservoirs ranging in capacity from 0.3 million gallons (MG) to over 6 MG with a total combined capacity of approximately 21 MG.

2.2 Climate

The climate in GWD's service area is generally characterized as Mediterranean coastal: summers are mild and dry, and winters are cool. The average temperature is 59 degrees Fahrenheit. Average rainfall is about 16 inches per year. The average evapotranspiration (ET_o) in the region is 43.7 inches per year (Table 2-1). The area is subject to wide variations in annual precipitation. For example, the area received only 5.6 inches of rain in 1990, but received over 45 inches of rain in 1998.

Table 2-1: Climate Data for Goleta Water District

Month	Standard Monthly Average ETo (inches) ¹	Average Rainfall (inches) ²	Average Temperature (Fahrenheit) ²
January	1.79	3.46	52
February	2.32	3.33	54
March	3.57	2.96	55
April	4.63	1.17	57
May	5.10	0.29	60
June	4.83	0.07	62
July	5.38	0.03	65
August	5.21	0.05	66
September	4.03	0.23	65
October	3.16	0.55	62
November	2.04	1.67	57
December	1.65	2.52	53
Annual	43.71	16.34	59

Notes:

1. ETo (evapotranspiration) data provided Santa Barbara region, CIMIS Station #107 for years 1993 to 2015 (DWR 2016).
2. Average for Santa Barbara Airport weather station 047905 for years 1941 to 2012 (WRCC 2015).

Droughts are a regular feature of California’s climate. During California’s period of recorded hydrology, the most significant statewide droughts occurred during 1928-34, 1976-77, 1987-92, and 2007-09 while the last significant regional drought occurred in parts of Southern California (including Goleta) in 1999-2002. In addition, seven of the nine years since 2007 have been dry and the three-year period between fall 2011 and fall 2014 was the driest since recordkeeping began in 1895 (PPIC 2015). As a result, GWD received its lowest allocation ever from the SWP (5 percent) in 2014 and received its lowest allocation from the Cachuma Project in 2015 (45 percent) and then even lower in 2016 (zero allocation). GWD responded by implementing its Water Shortage Contingency Plan to temporarily reduce demand and access supplemental water supplies, such as stored SWP water, Cachuma Project water, and groundwater. Further discussion of drought response and the District’s water supply reliability is included in Chapter 8.

Chapter 3 System Water Use

This chapter describes the historical, current and projected water usage within the GWD system. The methodology used to project future water use within GWD’s service area is also detailed.

3.1 Estimated Population Growth

Population is an important factor utilized by both the District and the state for various purposes, including calculation of gallons per capita per day (GPCD), discussed below. As a component of the 2015 UWMP update, DWR required all water providers to update population calculations based on a new calculation methodology. A detailed description of the methodology used to calculate the GWD population for the 2015 UWMP is provided in Section 4.2.1. Pursuant to the updated population calculation, GWD’s 2015 population is estimated to be approximately 82,600 (compared to approximately 87,000 calculated under the 2010 UWMP). Notably, while within the GWD service area, customers served by La Cumbre Mutual Water Company (LCMWC) were included in the 2010 UWMP estimate but are now excluded from the population calculation.

GWD’s population for years 1990, 2000, and 2010 was estimated using Census data. Census tracts within the GWD service area were identified using Geographic Information System (GIS) software. Those census tracts not fully within the GWD service area were mapped and evaluated. In those instances where the urbanized area of the census tract fell within the GWD service area and the rest of the census tract was generally rural, then the population of that census tract was assumed to be in the GWD. In those instances where the urbanized area of the census tract extended outside of the GWD boundary, a percentage of the population was assigned to GWD.

GWD has an estimated current service area population of 82,569 based on population growth rate estimates for 2010 to 2035 made by the Santa Barbara County Association of Governments (SBCAG) (2012). SBCAG determined two different growth rates that apply to GWD’s service area, one for the City of Goleta (0.50 percent) and one for the unincorporated area surrounding Goleta and Santa Barbara (0.67 percent). The two growth rates were applied to their respective population and then summed to determine the service area population for the years 2020 to 2035.

Table 3-1: DWR Table 3-1: Population – Current and Projected

Population Served	2015	2020	2025	2030	2035
City of Goleta	30,570	31,334	32,118	32,921	33,744
Unincorporated Santa Barbara	51,999	53,769	55,598	57,490	59,446
Total Population Served	82,569	85,103	87,716	90,411	93,191

3.2 Current and Historical Water Demand

This section presents water use, which includes water “deliveries” and water “demand.” “Deliveries” refers to water measured with metered sales to customers, while “demand” includes deliveries plus unaccounted-for water, sales of water to other water purveyors, and water used for groundwater recharge. Unaccounted-for water, which is discussed in detail in Section 3.2.2, is the difference between the amount of water produced and the amount of water sold to customers.

3.2.1 Historical Water Deliveries

Table 3-2 presents information on all historical water deliveries for the years 2010 through 2015. Water usage is characterized by deliveries made to each sector of use including single family residential, multi-family residential, commercial, institutional, landscape and agricultural irrigation. These deliveries are

reflective of typical water use increases in the first year of drought (2013) followed by decreases as a result of more robust conservation efforts during subsequent years of drought (2014 to 2015).

Table 3-2: Historical Water Deliveries (AF)

Water Use Sector	2010	2011	2012	2013	2014	2015
Single Family	4,342	4,254	4,517	4,390	3,680	3,251
Multi-Family	1,789	1,812	1,870	1,805	1,633	1,636
Commercial	2,685	2,344	2,171	2,245	2,025	1,790
Institutional	548	535	596	573	547	543
Landscape	418	405	482	485	400	331
Agricultural irrigation	2,403	2,163	3,219	3,597	3,977	3,160
Total	12,185	11,513	12,855	13,095	12,262	10,711

Note: Water deliveries shown in this table are based on sales data and do not account for system losses.

3.2.2 Historical Sales

GWD has, on occasion, engaged in the sale of water to other water purveyors. Table 3-3, shows historical water sales from 2010 through 2015 in acre feet per year (AFY). GWD sold a combined 1,150 AF of water in 2010 to Montecito Water District, Santa Ynez River Water Conservation District-Improvement District No.1, City of Buellton, and La Cumbre Mutual Water Company. GWD also sold 600 AF of water to Montecito Water District in 2013.

Table 3-3: Historical Sales to Other Water Agencies (AFY)

Agency	2010	2011	2012	2013	2014	2015
Montecito Water District	400	0	0	600	0	0
Santa Ynez River Water Conservation District-Improvement District No.1	400	0	0	0	0	0
City of Buellton	50	0	0	0	0	0
La Cumbre Mutual Water Company	300	0	0	0	0	0
Total	1,150	0	0	600	0	0

3.2.3 Historical Groundwater Recharge

GWD has historically participated in the conjunctive use of excess surface water from Lake Cachuma spill events by injecting and storing those wet year seasonal supplies in the Goleta Groundwater Basin for later use. Injection for conjunctive use purposes are documented in the GWD’s Groundwater Management Plan, as well as annual reports to the Superior Court pursuant to the Wright Judgment. (Refer to Section 5.2.1 for an explanation of the Wright Judgment). The excess spill water is not considered a “firm” supply since it is not always available. As an example, the recent multiple dry year drought between 2012 and 2016 resulted in no Cachuma spill water available for injection.

3.2.4 Distribution System Water Losses

Distribution system water loss (water loss) is the difference between the amount of water produced and the authorized consumption of water. Between 2010 and 2015, water loss was approximately six percent of produced water within GWD’s system, which is within the industry standard for system loss. Sources of water loss include:

- Real losses, such as leaks from water lines
- Apparent losses, such as customer meter inaccuracies and unauthorized consumption

Beginning in 2015, agencies are required to calculate losses using the American Water Works Association (AWWA) Method. Table 3-4 provides a water loss summary for 2015. As part of the 2020 UWMP, water agencies must report water losses for each of the last five years calculated using the AWWA Method.

Table 3-4: DWR Table 4-4: 12 Month Water Loss Audit Reporting (2015)

Reporting Period Start Date	Volume of Water Loss
01/2015	577 AF

3.2.5 2015 Water Demand

State law requires that an UWMP illustrate water deliveries across various customer classes, including: single family residential, multi-family residential, agricultural, commercial, institutional, and landscape customers. GWD’s 2015 potable and raw water deliveries were comprised of 46 percent residential, 30 percent agricultural irrigation, 22 percent commercial and institutional, and less than 1 percent landscape irrigation (comprised of dedicated irrigation meters). Note that untreated (raw) surface water is delivered to 18 agricultural irrigation customers through a separate water system. Actual water deliveries to serve that 2015 demand are provided in Table 3-5. Since all GWD accounts are metered, the deliveries reported in Table 3-5 are from meter readings.

Table 3-5: DWR Table 4-1: Demand for Potable and Raw (Chlorinated) Water – Actual (2015)

Use Type	2015 Actual	
	Level of Treatment When Delivered	Volume (AF)
Single Family	Drinking Water	3,251
Multi-Family	Drinking Water	1,636
Commercial	Drinking Water	1,790
Institutional/Governmental	Drinking Water	543
Landscape	Drinking Water	331
Agricultural Irrigation	Drinking Water	1,716
Agricultural Irrigation	Raw (Chlorinated) Water	1,444
Sales/Transfers/Exchanges to other agencies	Drinking Water	0
Groundwater recharge	Drinking Water	0
Losses		577
	Total	11,288

3.3 Projected Water Demand

3.3.1 Projected Water Deliveries

Population projections are often the main component used to project future water demand; however, there are other key factors like economic conditions, land use policies, changes in technology, and water costs that may also influence future demand. Agricultural acreage under production also has a substantial impact

on projected water demand. **The interplay of these factors can make predicting future water use challenging over a 25-year period.**

The methodology used to project future GWD water demand through 2035 begins with establishing normal baseline use relative to population. Over the past four years (2012 to 2015), GWD's system and supplies have been subjected to a severe and extensive drought that has resulted in significant demand reductions in 2014 and 2015. Since these more recent years cannot, therefore, be considered reflective of normal baseline use, the average of the years 2011 to 2013 was used instead. Notably, these years had close to average local ETo³ with 2011 having slightly lower and 2013 slightly higher levels. Therefore, average water use within each water use sector from 2011 to 2013 was used as the baseline demand for 2015. Then, different projection methods were applied for each water use sector to determine future demand by sector as described here:

1. **Single Family and Multi-Family Residential Sectors:** Residential water demand projections were based on the SBCAG (2012) population growth estimates between 2010 and 2035 for the City of Goleta and unincorporated Santa Barbara County. A proportional annual growth rate of 0.61 percent was calculated based on the ratio of City of Goleta and unincorporated Santa Barbara County within GWD's service area (which had differing individual projected growth rates). This proportional annual growth rate was then applied to the single family and multi-family residential baseline water demand to project water use through 2035.
2. **Commercial Sector:** Commercial water demand projections were based on assumptions for development under the Airport Industrial Specific Plan and the Eastern Goleta Valley Community Plan, as well as recent Water Supply Assessments developed by GWD for the Goleta General Plan and by the County of Santa Barbara for the Isla Vista Master Plan. Buildout of the City of Goleta is still assumed to be completed by 2035.
3. **Institutional Sector:** The University of California Santa Barbara (UCSB) is the only customer classified as institutional in GWD's system. Institutional water demand projections for UCSB are based on the UCSB 2010 Long Range Development Plan (LRDP) that was approved by the California Coastal Commission in November 2014. Potable water supplied to UCSB by GWD is constrained by permits and agreements⁴ to a total of 1,010⁵ AFY of potable demand. Accordingly, UCSB water use projections included in this UWMP are capped at that amount. Notably, the majority of UCSB's existing landscape is irrigated with Recycled Water and that practice is expected to continue as planned projects are developed. The estimate of total water use upon full buildout of the 2010 LRDP is 970 AFY.
4. **Landscape Irrigation and Agricultural Sectors:** Since there are no projected increases in either landscape or agricultural irrigation, water demand projections are projected to be equivalent to the average baseline use between 2011 and 2013.

In addition, per capita water use from 2011 to 2013 was 111 gallons per capita per day (GPCD), which is equivalent to the target GPCD for the District in 2020 (as derived in Chapter 4). Consequently, no additional conservation was assumed for the demand projections. Per capita residential, commercial, and industrial

³ ETo is a measure of the water needed for outdoor irrigation, and has a direct correlation to the increases and decreases in water consumption exhibited by water users outside of years with strong conservation requirements or incentives. Historically, when the weather is hot and dry, water usage increases. The amount of increase varies according to the number of consecutive years of hot, dry weather and the conservation activities imposed. During cool and wet years, historical water usage decreases to reflect less water usage for exterior landscaping and agricultural uses. Past studies by GWD have indicated that demand increases by 7 percent above normal during dry years.

⁴ Water Reclamation Agreement of 1991 and Devereux Agreement.

⁵ UCSB also has an additional entitlement of 200 AFY that it acquired via an agreement with the University Exchange Corporation for use at North Campus.

usage can be expected to decrease as a result of the implementation of more aggressive water conservation practices. The demand projections are conservative when considering that some District customers will continue some of their recent (2014 and 2015) active conservation measures in response to the ongoing drought and passive water conservation will continue to occur over the projection period.

3.3.2 Projected Groundwater Recharge

GWD has an active Aquifer Storage and Recovery Program through which water is injected into the basin for recharge and storage during wet years, and extracted to serve customers in dry years. Sources of water for injection may include Cachuma Project spill water and SWP water, depending on availability and circumstances. Since this recharge water is not considered a source of supply until it is pumped for direct use, it is not considered an end use or demand. GWD is also actively studying stormwater capture and recycled water augmentation as potential sources of additional supply to recharge the basin.

3.3.3 Projected Sales

GWD does not anticipate any regular or large sales to other agencies in the foreseeable future. GWD may consider selling water on a short-term basis when projected or actual supplies exceed GWD demand and the ability to inject into the groundwater basin.

3.3.4 Projected Unaccounted-for Water

For projections, unaccounted-for water is assumed to be approximately six percent of total sales, based on historical estimates. In Table 3-6, similar to historical unaccounted-for water reporting, the category is divided between the DWR UWMP categories of “Losses” and “Other,” with “Losses” defined based on the AWWA Method to be “real losses” and “Other” defined as being “apparent losses.”

3.3.5 Projected Water Demand

Table 3-6 provides projected potable water demand, by sector, for years 2020 through 2035.

Table 3-6: DWR Table 4-2: Demand for Potable and Raw Water – Projected (2020 to 2035) (AFY)

Water Use Type	2020	2025	2030	2035
Single Family	4,520	4,659	4,802	4,949
Multi-Family	1,883	1,941	2,001	2,062
Commercial	2,430	2,586	2,716	2,786
Industrial	0	0	0	0
Institutional/Governmental	812	1,010	1,010	1,010
Landscape	457	457	457	457
Agricultural Irrigation	2,993	2,993	2,993	2,993
Groundwater Recharge	0	0	0	0
Sales/Transfers/Exchanges to other agencies	0	0	0	0
Losses	789	829	852	869
Total Estimated Demand	13,884	14,475	14,831	15,126

3.3.6 Projected Total Water Use

Table 3-7 presents the total projected water use for the years 2020 to 2035, including non-potable recycled water use discussed in Chapter 6.

Table 3-7: DWR Table 4-3: Total Water Demand

Water Use	Current	2020	2025	2030	2035
Potable and Raw Water ⁽¹⁾	11,288	13,884	14,475	14,831	15,126
Recycled Water Demand ⁽²⁾	1,133	1,185	1,225	1,265	1,265
Total	12,421	15,069	15,700	16,096	16,391

Notes:

1. Raw water is untreated surface water from the Cachuma Project. Includes water losses.
2. Recycled Water Demand is from Chapter 6.

3.3.7 Water Use Projections for Low Income Households

Senate Bill 1087 requires that UWMP water use projections include the projected water use for lower income single-family and multi-family residential housing within the water purveyor’s service area. Based on 2010 Census Data, the Santa Barbara County Housing Element estimates that “extremely low,” “very low,” and “low” income households make up approximately 35.3 percent of all households in the City of Goleta and unincorporated County area (Santa Barbara County 2015). However, to meet regional housing needs goals, the County estimates that 40 percent of new housing units in unincorporated areas would need to be suitable for extremely low, very low, or low income residents (Santa Barbara County 2015). The City of Goleta also updated its General Plan Housing Element in December 2014 and applied the same assumptions that, to meet its regional housing need goals, 40 percent of new housing units in the city would need to be suitable for extremely low, very low, or low income residents (City of Goleta 2014). Table 3-8 verifies inclusion of low-income residential demand in GWD demand projections.

Table 3-8: DWR Table 4-5: Inclusion in Water Use Projections

Are Future Water Savings Included in Projections?	No
Is Lower Income Residential Demand Included In Projections?	Yes

Further, GWD treats all customers equitably and will not deny, conditionally approve, or reduce water services applied for by a proposed development that includes housing units affordable to lower income households unless one of the following occurs.

- GWD specifically finds that it does not have sufficient water supply
- GWD is subject to a compliance order issued by the California Department of Public Health that prohibits new water connections
- The applicant has failed to agree to reasonable terms and conditions relating to the provision of services

Chapter 4 Baselines and Targets

4.1 Water Conservation Act and UWMP Requirements

The Water Conservation Act of 2009 (SBX7-7) is one of four policy bills enacted as part of the November 2009 Comprehensive Water Package (Special Session Policy Bills and Bond Summary). SBX7-7 provides the regulatory framework to support the statewide reduction in urban per capita water use described in the *20x2020 Water Conservation Plan* (DWR 2010). Consistent with SBX7-7, water suppliers must determine and report existing baseline water consumption and establish water use targets in GPCD for the year 2020 with an interim target established for 2015.

All 2015 UWMPs include:

1. Baseline Daily Per Capita Water Use calculation (average GPCD used in past years)
2. Compliance Water Use Target (target GPCD in 2020)
3. Interim Water Use Target (target GPCD in 2015)

GPCD is an expression of the average rate of domestic and commercial water demand, and is calculated using the water supplier's total potable water production, excluding agricultural use, and the population within the water supplier's service area. This chapter describes the methods used to develop GWD's baseline water consumption and water use targets, and reports the results.

4.1.1 Baseline Daily Per Capita Water Use Method

The Baseline GPCD calculation is based on gross water use by an agency in each year of the baseline period. CWC stipulates that the baseline period be 10 years in length ending no earlier than 2004 and no later than 2010. Baseline GPCD must account for all water sent to retail customers, excluding:

- Recycled water
- Water sent to another water agency
- Water that went into storage

It is at an agency's discretion whether to exclude agricultural water use from the baseline GPCD calculation. If agricultural water use is excluded from the baseline GPCD calculation, it must also be excluded from the calculation of actual water use in later urban water management plans. GWD has elected to exclude agricultural water use from its calculation of baseline GPCD. Due to the large acreage of agriculture under production under the ownership of only a few customers, excluding agricultural water use from baseline GPCD results in a more representative target for urban water use reduction.

4.1.2 Compliance Water Use Target Methods

An urban retail water supplier must set a 2020 water use target (Compliance Water Use Target) and a 2015 interim target (Interim Water Use Target). There are four methods for calculating the Compliance Water Use Target, as follows.

1. Eighty percent of the urban water supplier's Baseline GPCD
2. GPCD estimated using the sum of:
 - a. For indoor residential water use, 55 GPCD water use as a provisional standard. Upon completion of DWR's 2016 report to the Legislature reviewing progress toward achieving the statewide 20 percent reduction target, this standard may be adjusted by the Legislature by statute.
 - b. For landscape irrigated through dedicated or residential meters or connections, water use efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance

set forth in section 490 et seq. of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992.

- c. For commercial, industrial, and institutional (CII) uses, a ten percent reduction in water use from the baseline CII water use by 2020.
3. Ninety-five percent of the applicable state hydrologic region target as stated in the *20x2020 Water Conservation Plan* (DWR 2010). GWD falls within the Central Coast Hydrologic Region.
4. For this target method, savings are assumed between the baseline period and 2020 due to metering of unmetered water connections and achieving water conservation measures in three water use sectors:
 - a. Indoor residential
 - b. CII
 - c. Landscape water use, water loss, and other unaccounted-for water.

The selected Compliance Water Use Target must be compared against what DWR calls the "Maximum Allowable GPCD". The Maximum Allowable GPCD is based on 95 percent of a 5-year average base gross water use from 2003 to 2010. The Maximum Allowable GPCD is used to determine whether a supplier's 2015 and 2020 per capita water use targets meet the minimum water use reduction of SBX7-7. If a supplier's Compliance Water Use Target is higher than the Maximum Allowable GPCD, the supplier must instead use the Maximum Allowable GPCD as their target.

4.1.3 Interim and Compliance Water Use Target Methods

An urban retail water supplier must set a 2015 interim target (Interim Water Use Target). The Interim Water Use Target is set as a halfway point between the baseline GPCD and the Compliance Water Use Target for 2020 to be met in the year 2015.

4.2 Baseline and Target Development

GWD's 2010 UWMP included calculations to determine the Baseline GPCD, Compliance Water Use Target, and Interim Water Use Target. These 2010 SBX7-7 calculations were re-calibrated for this 2015 UWMP to meet additional requirements stipulated in the 2015 UWMP Guidebook for Urban Water Suppliers. DWR has also provided a SBX7-7 Verification Form to aid in the recalculation process (see Appendix D).

To calculate the revised Baseline GPCD, population estimates for 1990 to 2015 were first developed. Then, the population estimates were compared to water production records to estimate the Baseline GPCD, Interim Water Use Target, Compliance Water Use Target, and Maximum Allowable GPCD. Compliance with the Interim Use Target is estimated using the estimated 2015 population compared to water production records. The following sections describe each step in this methodology in more detail.

4.2.1 Population Projections

Agencies are required to recalculate their Baseline GPCD in the 2015 UWMP with final 2010 U.S. Census data, which was not available until after the 2010 UWMP was completed. New this year, DWR developed a population tool that calculates the estimated population served by a water provider whose boundaries do not correspond with a city or Census Designated Place, such as GWD. Preliminary runs of the calculation tool indicated a lower and declining population in the District service area, contrary to District estimates in the 2010 UWMP and observed demographics. It was determined that the tool's method for distributing population across Census blocks was leading to the exclusion of some of GWD's service area population. Accordingly, an alternate population calculation method was utilized to ensure the most accurate estimate for the population served by GWD within its service area. The alternative approach was approved by DWR through conversations with staff during the development of this 2015 UWMP (see Appendix E).

To calculate population in Census years the following steps were taken.

1. Census block groups⁶ for the years 1990, 2000, and 2010 were compared to GWD's water service area boundaries using GIS to determine which census block groups were served by GWD. GWD is bordered to the north and west by very sparsely populated areas including the Los Padres National Forest and to the East by the City of Santa Barbara water service area. Some individual census block groups include both the GWD service area and either Los Padres National Forest or the City of Santa Barbara.
2. For census block groups that were partially within the service area and partially within the Los Padres National Forest or a neighboring rural area, the entire population for the census block group was counted as part of GWD's service area. Areal imagery for these areas was used to confirm that the clear majority of developed (i.e., populated) areas were within GWD's service area to validate the inclusion of the full census block group population in those instances.
3. In instances where a portion of the census block group also included the City of Santa Barbara, GIS was used to determine the percentage of the geographic area of the block group within GWD's service area, assuming that the population was evenly distributed throughout the block group. That percentage was then applied to the total population for the block group to determine how much of the population to include as part of the service area population.

Once the population of each block group served by GWD was better defined, the total service area population was summed for 1990, 2000, and 2010.

The population in non-Census years between 1995 and 2010 was determined by first calculating the persons per connection for 1990, 2000, and 2010 using the total number of active GWD connections and population. Then, the rate of change in persons per connection between 1990 and 2000 and between 2000 and 2010 was calculated. The rate was applied to estimate the persons per connection in all non-Census years and combined with the total number of connections in those years to estimate the annual population.

The population for 2015 was estimated by applying the persons per connection rate of change from 2000 to 2010 to 2015 to estimate the 2015 persons per connection. This 2015 persons per connection was then multiplied by the actual number of connections in 2015 to estimate population in that year. As noted in Section 3.1, however, these numbers remain below the previously estimated population of 86,946 contained in the 2010 UWMP and utilized by the District, likely due to the exclusion of LCMWC-served customers that are within the GWD service area, and the revised population calculation method.

⁶ DWR requested that the census blocks be used for alternative population calculations. However, block groups, which have larger areas than blocks, were used because block group is the finest level of census data that is readily available for 1990 and using the block group level for all census years allowed for consistency in the analysis.

Figure 4-1: 1995 to 2015 UWMP Population Estimates

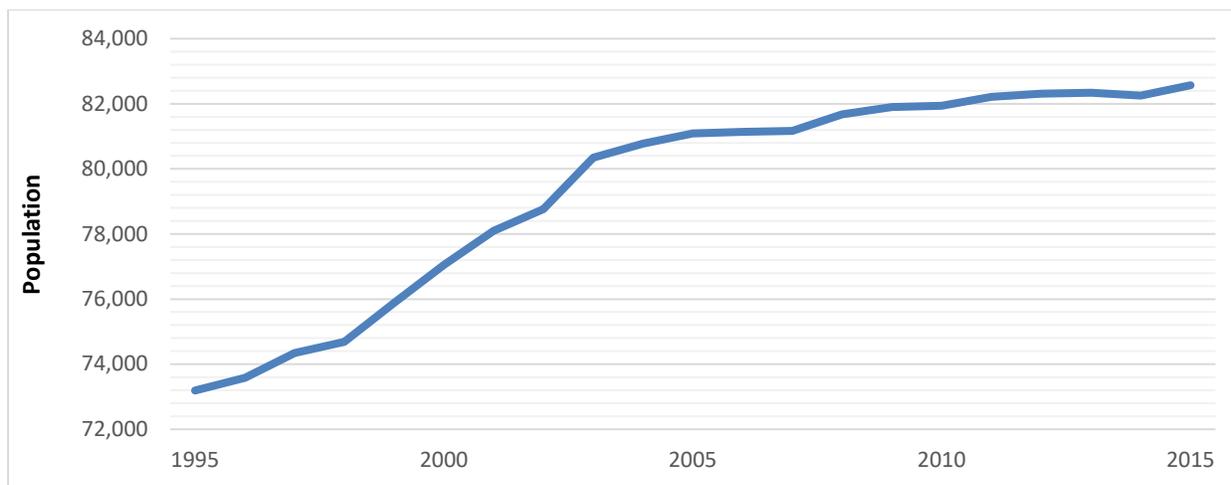


Table 4-1: 1995 to 2015 UWMP Population Estimates

Year	Population	Source
1995	73,190	Interpolation using persons per connection method
1996	73,577	
1997	74,346	
1998	74,684	
1999	75,891	
2000	77,056	2000 U.S. Census
2001	78,097	Interpolation using persons per connection method
2002	78,760	
2003	80,348	
2004	80,775	
2005	81,088	
2006	81,134	
2007	81,169	
2008	81,673	
2009	81,905	
2010	81,938	2010 U.S. Census
2011	82,215	Extrapolation using persons per connection method
2012	82,312	
2013	82,338	
2014	82,255	
2015	82,569	

4.2.2 Baseline Gross Per Capita Demand

The UWMP Act allows urban water retailers to evaluate their Baseline GPCD by using a 10- or 15-year period. The 10-year base period must fall within 1995 to 2010. A 15-year base period is allowed if recycled water made up 10 percent or more of the 2008 retail water delivery. For GWD, recycled water use was less than 10 percent of total 2008 water deliveries, so the 10-year period was used. Table 4-2 presents the Baseline GPCD calculation for GWD of 127 GPCD. The period 1995 to 2004 was selected for calculation of GWD’s 10-year base period.

Table 4-2: Computation of Baseline GPCD

Base Period Year		Distribution System Population	Daily System Gross Water Use (GPD)	Annual Daily Per Capita Water Use (GPCD)
Sequence Year	Calendar Year			
Year 1	1995	73,190	9,213,926	126
Year 2	1996	73,577	9,400,384	128
Year 3	1997	74,346	9,556,413	129
Year 4	1998	74,684	11,249,990	151
Year 5	1999	75,891	10,333,172	136
Year 6	2000	77,056	9,451,517	123
Year 7	2001	78,097	9,530,584	122
Year 8	2002	78,760	9,832,105	125
Year 9	2003	80,348	9,252,892	115
Year 10	2004	80,775	9,686,871	120
Baseline GPCD				127

In addition, urban retailers must report GPCD for a five-year period within 2003 to 2010 as the basis for the Maximum Allowable GPCD. Tables 4-3 shows the Maximum Allowable GPCD calculations for GWD using the period of 2004 to 2008 as the five-year base period.

Table 4-3: Computation of Maximum Allowable GPCD

Base Period Year		Distribution System Population	Daily System Gross Water Use (GPD)	Annual Daily Per Capita Water Use (GPCD)
Sequence Year	Calendar Year			
Year 1	2004	80,775	9,686,871	120
Year 2	2005	81,088	9,698,689	120
Year 3	2006	81,134	9,048,370	112
Year 4	2007	81,169	9,429,255	116
Year 5	2008	81,673	9,735,490	119
5-Year Base Daily Per Capita Water Use				117
Maximum Allowable GPCD (95% of 5-Year Average)				111

4.2.3 Interim and Compliance Water Use Targets

SBX7-7 requires that water suppliers identify demand reduction targets. GWD has selected Method 3 to calculate the Compliance Water Use Target (for 2020). The Compliance Water Use Target under Method 3 is calculated as 95 percent of the applicable state hydrologic region target. GWD is within the Central Coast Hydrologic Region, which has a GPCD target of 123; therefore, 95 percent of the region target results in a water use target of 117 GPCD.

However, since the Maximum Allowable GPCD is 111, which is lower than the calculated Compliance Water Use Target under Method 3 (117 GPCD), the Compliance Water Use Target must be set at the lower value of 111 GPCD.

The Interim Water Use Target (for 2015), which is the halfway point between the baseline GPCD (127) and the Compliance Water Use Target for 2020 (111) is 119 GPCD. A summary of baselines and resulting targets is presented in Table 4-4.

Table 4-4: DWR Table 5-1: Baseline and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-15 year	1995	2004	127	119	111
5 Year	2004	2008	117		

Note: All values in GPCD.

4.3 Target Compliance

4.3.1 Compliance with 2015 Target

As part of this 2015 UWMP, water suppliers must demonstrate compliance with the 2015 Interim Water Use Target (119 GPCD), based on the halfway point between the Baseline GPCD (127) and the Compliance Water Use Target for 2020 (111). The actual 2015 value was calculated to be 88 GPCD based on a gross water use of 8,127 AF (see Sections 3.2.4 and 5.7), calculated as Total Supplies in 2015 minus recycled water supplies and agricultural irrigation demand) and a population of 82,569 in 2015 (see Section 4.2.1). GWD water use is well below the 2015 target and none of the optional adjustments were employed to further reduce GPCD water use, as indicated in Table 4-5.

Notably, the District’s Residential GPCD (R-GPCD), which is calculated based on residential water usage and service area population, has dropped from approximately 60 R-GPCD down to 50 R-GPCD in response to customer conservation efforts and water use restrictions in effect during the current drought. This is below the State’s standard of 55 GPCD for indoor usage, illustrating the water conservation ethic of GWD customers. Similarly, GWD has consistently met and exceeded the State mandated emergency conservation target of a 12 percent reduction in water use⁷.

Table 4-5: DWR Table 5-2: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments to 2015 GPCD		2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		TOTAL Adjustments	Adjusted 2015 GPCD		
88	119	0	88	88	Yes

4.3.2 Plans to Meet 2020 Target

The Compliance Water Use Target for 2020 is 111 GPCD, which is the same GPCD as for the baseline period (2011 to 2013) discussed in Section 3.3 and is higher than the current water use of 88 GPCD. Drought measures have reduced water use significantly in recent years and so it is likely that GPCD use will increase after drought conditions and related programs are over. It is reasonable to assume that some of the drought-related conservation response will be maintained as permanent passive conservation through changes in landscaping, and will remain in place. Through continued conservation efforts, as described in Chapter 9, GWD will work to maintain much of the GPCD reductions made during the current drought and to improve the efficiency of water use within the GWD service area.

In addition, since the 2010 UWMP, there have been several regulatory changes related to conservation at the state and national levels. AB 715 requires toilets and urinals sold or installed in California to meet new plumbing requirements, followed by updated standards adopted by the California Energy Commission for toilets and faucets. SB 407 requires single-family, multi-family, and commercial buildings to replace all noncompliant plumbing fixtures with water conserving equivalents by 2017 or 2019, depending on sector. Additionally, an update to the Title 24 California Building Standards Code became effective in 2015, which includes plumbing, residential, energy, and green building standards updates that apply to any building installing new fixtures in California. AB 1881 makes any new or renovation landscape projects subject to water-efficient landscape design and practices with requirements varying depending on project size. WaterSense, Energy Star, and the Federal Energy Conservation Standards were all updated to reflect higher standards for water conservation. Each of these new regulatory changes will strengthen passive conservation savings in GWD’s service area.

Given the historical GPCD (111 from 2011 to 2013), current GPCD (88 in 2015), and new regulations that will continue to increase passive conservation and ongoing active conservation efforts, GWD anticipates meeting the 2020 target.

⁷ Governor Brown proclaimed a State of Emergency in January 2014 that included asking all Californians to reduce water consumption by 20 percent. In April 2015, the governor issued an executive order that included ordering the State Water Resources Control Board (SWRCB) to impose restrictions to achieve a 25 percent reduction in potable urban water usage through February 2016. The SWRCB created nine urban water supplier conservation tiers based on each supplier’s R-GPCD. The conservation requirements in the nine tiers ranged from 4 percent to 36 percent. GWD fell into Tier 3, which had a 12 percent conservation requirement.

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Chapter 5 System Supplies

This chapter describes the water supplies and sources that have been and will be used to meet GWD's service area demand described in Chapter 3. The projected reliability of each of the supplies is discussed in Chapter 8.

5.1 Cachuma Project Water

The Cachuma Project captures seasonal flows from the Upper Santa Ynez River system, which originates in the San Rafael Mountains in the Los Padres National Forest and is fed by local precipitation. The watershed is bounded by the San Rafael Mountains to the northeast, the Purisima Hills to the north, and the Santa Ynez Mountains to the south. Under normal conditions, most of GWD's water supply is from the Cachuma Project, which was constructed by the USBR on the Santa Ynez River in the early 1950's. The Cachuma Project consists of Bradbury Dam, Tecolote Tunnel, South Coast Conduit, Lake Cachuma, and various water conveyance facilities. The locations of these facilities are provided in Figure 5-1. Lake Cachuma has an estimated capacity of approximately 190,000 AF and is operated by the Cachuma Operation and Maintenance Board (COMB) under contract with USBR.

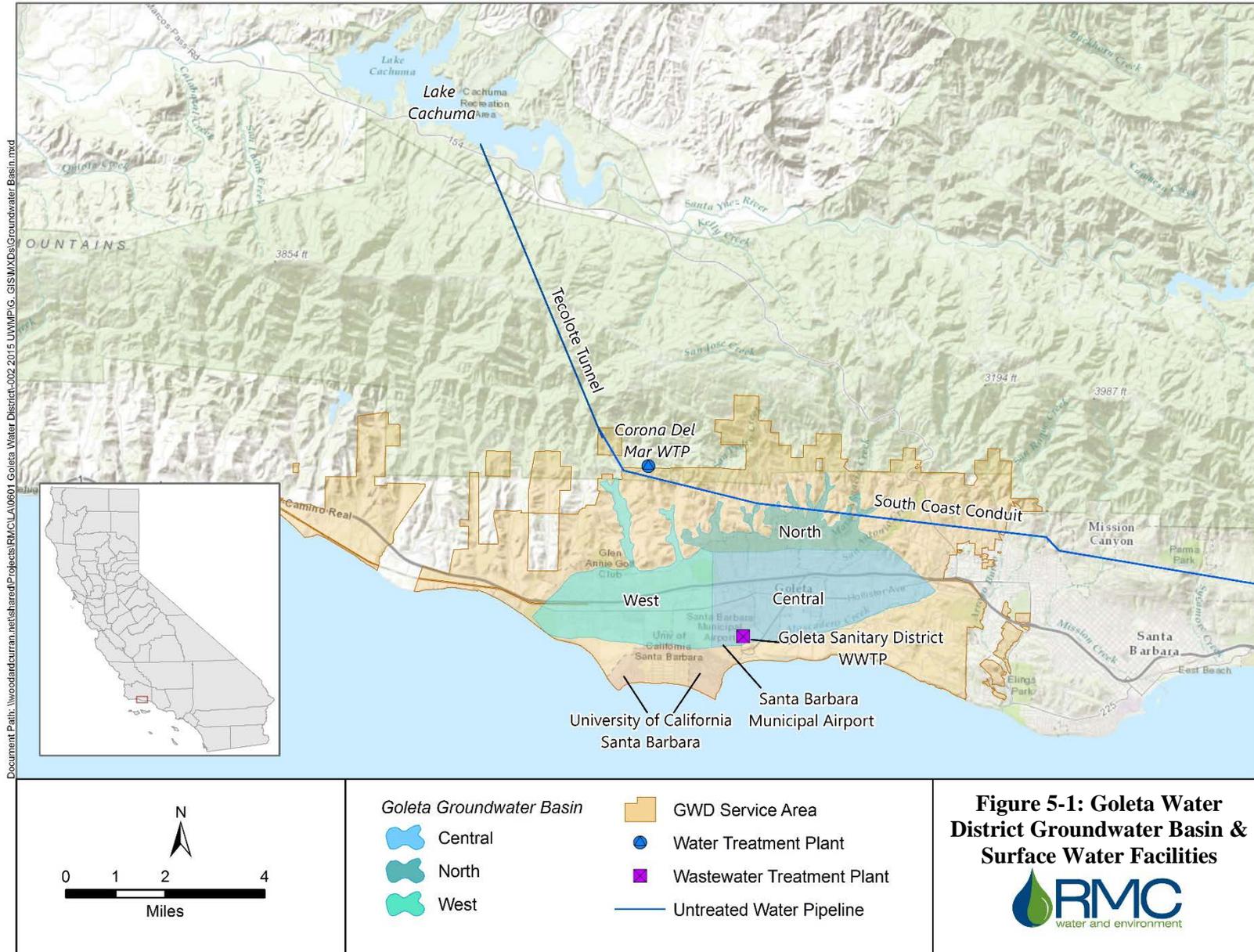
Water is provided to Cachuma Project Member Units for irrigation, domestic, and municipal and industrial water uses. The Member Units include GWD, City of Santa Barbara, Montecito Water District, Carpinteria Valley Water District, and Santa Ynez River Water Conservation District Improvement District #1 (ID#1). Each member unit has an entitlement to a specific amount of water, but the amount of Cachuma Project water delivered to member units varies from year to year depending on winter runoff, lake storage, water demand, downstream releases for fish, and other water supply sources.

Water is diverted from Lake Cachuma to the south coast of Santa Barbara County through the Tecolote Tunnel, which extends approximately 6.4 miles through the Santa Ynez Mountains to the headworks of the South Coast Conduit at Glen Annie reservoir. The South Coast Conduit extends for approximately 24 miles from Goleta to Carpinteria, and delivers water to GWD at the CDM WTP for treatment and delivery to potable water customers. A turnout at Glen Annie Reservoir, which is upstream of CDM WTP, supplies raw water that is chlorinated by GWD prior to delivery to 18 agricultural customers.

There are three categories of Cachuma Project water: regular entitlement water, carryover water, and spill water. GWD's regular entitlement water yield is 9,322 AFY. Entitlement that is not used in any year is carried over to the following years. However, when Cachuma spills (on average every three years), all carryover water is considered lost. When Cachuma spills, GWD can take as much water as it can use without debiting its entitlement for that year. The amount of spill water that GWD can use for meeting customer demand and groundwater injection is largely limited by GWD's surface water treatment and groundwater injection capacity.

5.2 State Water Project Water

The SWP is the largest state-built, multi-purpose water project in the country. It was authorized by the California State Legislature in 1959 with the construction of most facilities completed by 1973. Today, the SWP includes 34 storage facilities, reservoirs and lakes, 20 pumping plants, four pumping-generating plants, five hydro-electric plants and approximately 700 miles of aqueducts and pipelines. The primary water source for the SWP is the Feather River, a tributary of the Sacramento River. Storage released from Oroville Dam on the Feather River flows down natural river channels to the Sacramento-San Joaquin River Delta (Delta). While some SWP supplies are pumped from the northern Delta into the North Bay Aqueduct, the vast majority of SWP supplies are pumped from the southern Delta into the 444-mile-long California Aqueduct. Near Kettleman City, the Coastal Branch Aqueduct splits from the California Aqueduct for water delivery to agricultural areas to the west and municipal and industrial water users in San Luis Obispo and Santa Barbara counties.



In 1991, customers within the GWD service area voted to purchase an annual water supply capacity of 4,500 AFY from the SWP. The SWP conveyance facilities to Lake Cachuma were completed in 1997 by the CCWA. The CCWA is a California Joint Powers Agency formed by its nine public agency members, including GWD, and serves as the SWP water contractor. CCWA was formed to construct the necessary facilities to deliver SWP to its members, and now operates and maintains those facilities. SWP water deliveries through the CCWA system began in 1997. SWP supplies are commingled with Cachuma Project water in Lake Cachuma, and are also conveyed through the Tecolote Tunnel to the South Coast Conduit where it is delivered to the CDM WTP for treatment and use by GWD.

GWD has an SWP allocation of 7,000 AFY and a drought buffer amount of 450 AFY for a total of 7,450 AF of SWP water entitlement available per year. However, GWD only purchased 4,500 AFY of capacity in the Coastal Branch of the California Aqueduct and is limited to this amount in any given year. In addition, GWD currently uses two means of storing SWP water – Cachuma Reservoir and CCWA storage in San Luis Reservoir. For both options, stored water can be lost if the reservoirs spill. GWD can also purchase supplemental SWP water in dry years through CCWA.

The amount of SWP water delivered to SWP contractors in each year depends on several factors, including the demand for the supply, rainfall, snowpack, runoff, water in storage, pumping capacity from the Delta, and legal/regulatory constraints on SWP operation. Water delivery reliability, discussed further in Chapter 8, depends on three general factors: the availability of water, the ability to convey water to the desired point of delivery, and the magnitude of demand for the water. Urban SWP contractors' requests for SWP water, which were low in the early years of the SWP, have been steadily increasing over time.

5.3 Groundwater

The Goleta Groundwater Basin (Basin) underlies the Goleta Coastal Plain (Figure 5-1). The Basin is bounded on the north by bedrock of the Santa Ynez Mountains and to the south by uplifted bedrock along the More Ranch Fault. Tertiary-age bedrock forms the western boundary. The eastern boundary consists of bedrock uplifted along the Modoc Fault. The Basin is approximately eight miles long and three miles wide. Basin groundwater rights were adjudicated in the Wright Judgment (Appendix G). There are three subbasins (shown in **Figure 5-1**): North, Central, and West; though the North and Central subbasins are often handled as a single subbasin (North-Central). The West subbasin is only partially adjudicated, and is considered separate from the adjudicated Central and North portions of the Goleta Basin in the Wright Judgment. GWD does not pump from the West subbasin.

The Basin is naturally recharged from the Cieneguitas, Atascadero, San Antonio, Maria Ygnacio, San Jose, Las Vegas, San Pedro, Carneros, and Tecolotito creeks, as well as sections of bedrock in the foothills. The lower reaches of these creeks are intermittent where they flow across permeable sediments of the North subbasin, which is an active area of groundwater recharge. Remaining creek flow runs off into the Pacific Ocean with relatively minor recharge of more fine-grained shallow sediments in the Central and West subbasins.

Most usable groundwater in storage in the Basin is present within the Central subbasin. Water-bearing deposits of the subbasin consist of young alluvium of Quaternary and Holocene age, terrace deposits, older alluvium, and the Santa Barbara Formation of Pleistocene age. The Santa Barbara Formation is the primary water-bearing unit and is composed of sand, silt, and clay.

The Basin was recently designated by DWR as a medium priority basin under the 2014 Sustainable Groundwater Management Act. Prioritization is based on the following eight criteria:

1. Overlying population
2. Projected growth of overlying population
3. Public supply wells

4. Total wells
5. Overlying irrigated acreage
6. Reliance on groundwater as a primary source of water
7. Impacts on the groundwater; including overdraft, subsidence, saline intrusion, and other water quality degradation
8. Any other information determined to be relevant by DWR

DWR plans to focus monitoring efforts on high and medium priority basins as a first step to ensuring the sustainability of groundwater resources statewide.

GWD currently has seven fully operational groundwater production wells located in the North and Central subbasins. Total well extraction and treatment capacity is presently about 500 AF per month (GWD 2016). Annual groundwater volume pumped is provided in Table 5-1. The same wells used for extracting groundwater can be used for injection. Until 2012 and the recent drought, GWD had not pumped much of its Basin rights under the Wright Judgement, which has resulted in significant carry over storage (over 45,000 AF as of 2015) within the basin. Since 2012, GWD has increased groundwater production to offset the loss of surface and imported water, as shown in in Table 5-3. This has resulted in groundwater surface elevation declines below the 1972 benchmark, but groundwater modeling and monitoring indicate that the Basin is not approaching historic lows. While some indicator wells demonstrate lower water levels in the Basin, others have not shown substantial drops in water levels.

Table 5-1: DWR Table 6-1: Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin name	2011	2012	2013	2014	2015
Alluvial Basin	Goleta Groundwater Basin	4	305	2,714	3,463	5,263

5.4 GWD Supply Management Requirements

GWD manages its supply resources in accordance with the local court judgments, voter-adopted ordinances, agreements and planning recommendations described in this section.

5.4.1 Wright Judgment

GWD has a current adjudicated, appropriative right to extract and use up to 2,350 AFY of groundwater from the Goleta Groundwater Basin under the terms of a court judgment that determined the relative rights to the groundwater in the Basin known as the “Wright Judgment” (*Wright v. Goleta Water District* (1989), Case No. SM57969). The Wright Judgment provides GWD with the right to defer producing its annual groundwater entitlement and considers this water as GWD stored water, which can be used during dry years, droughts, and emergencies. The Wright Judgment also provides the District with the right to inject surface water supplies and claim the recharged water as the District's stored water, in addition to its annual entitlement. When the Cachuma Project spills, the District may receive "spill water" in addition to its annual entitlement without direct cost; Whenever Lake Cachuma spills, the District injects the spill water into the groundwater basin. The amount of water stored in the basin is reported annually by GWD. As of 2015, GWD storage in the basin was approximately 45,952 AF (GWD, 2016). The details of how the Wright Judgment affects GWD’s groundwater use are described in GWD’s Groundwater Management Plan 2016 Update (Appendix F).

5.4.2 SAFE Ordinance

The SAFE Ordinance, approved by GWD voters in 1991 and amended in 1994, allows GWD to provide new service connections at a rate not to exceed one percent of total potable water supply when certain

conditions are met. The SAFE Ordinance directs how GWD manages groundwater and specifies under what conditions groundwater is either pumped or stored. In addition, the SAFE Ordinance establishes an Annual Storage Commitment – a groundwater recharge requirement when the Central subbasin of the Goleta Groundwater Basin drops below 1972 levels. The key determining factors of the Annual Storage Commitment are groundwater elevations in the basin and the availability of Lake Cachuma water in any year. In any year when groundwater levels are below 1972 levels, the “Annual Storage Commitment” is triggered. The Annual Storage Commitment requires that at least 2,000 AF be replenished in the groundwater basin annually after GWD serves existing customers. SAFE requires that the Annual Storage Commitment increase by two thirds of any new potable water allocated in any given year. Currently, GWD is using the drought buffer to meet existing customer demand. When groundwater levels are below those of 1972, SAFE requires that any SWP above 3,800 AFY be stored in the Goleta Groundwater Basin after serving existing customers, until the basin is replenished to its 1972 levels. However, even when groundwater elevations are below 1972 levels, SAFE allows groundwater pumping when there are reduced deliveries of Lake Cachuma water. All water below the 1972 levels is considered the “drought buffer” and was intended under the SAFE Ordinance for use during drought.

In 2013, the groundwater levels in the Goleta Basin reached record highs due to ample surface water availability and the resulting lack of pumping. Due to the statewide drought and record dry conditions on the Central Coast as of April 2015, groundwater levels in the Goleta Basin have dipped below the 1972 level, the level required to be sustained during non-drought years. As planned, GWD is now using the stored groundwater for its intended purpose, and in the future, will replenish the groundwater basin at a rate dependent upon surface water availability.

Finally, for conservative planning purposes, SAFE requires that SWP supplies be projected as no more than 3,800 AFY. The details of how SAFE affects GWD’s groundwater use are described in GWD’s Groundwater Management Plan 2016 Update (Appendix F).

5.4.3 Water Supply Management Plan

In 2016-17, GWD updated the 2011 Water Supply Management Plan to update the analysis of the most effective use of GWD’s various sources of water supply in terms of reliability and cost, as well as to determine the best use of the water sources to satisfy potential increases in demand in the future and maintain groundwater levels.

The Water Supply Management Plan used the RiverWare model developed for the Santa Ynez River for deliveries from the Cachuma Project, described in Section 5.2, in conjunction with DWR’s 2015 SWP Delivery Capability Report and actual deliveries over the past several years as the basis for determining the availability of these water supplies. The 2017 Water Supply Management Plan Update recommends the following management actions:

- Purchase SWP water when available to keep GWD’s portion of the CCWA bank in San Luis Reservoir maximized;
- Inject SWP water into the Goleta Groundwater Basin when groundwater levels are below 1972 levels, CCWA pipeline capacity is not exceeded, and demand has been met;
- Optimize use of groundwater and SWP water supplies, particularly during periods when Cachuma Project allocations are reduced;
- Develop 1,500 AFY of future water supply augmentation to compensate for reduced reliability and yield of existing supplies; and
- Develop additional future water supplies if Cachuma Project water contract yield is reduced.

5.5 Wastewater and Recycled Water

GWD has been serving recycled water to customers since 1995. In 2015, the Goleta Wastewater Treatment Plant produced 4,752 AF of secondary treated effluent. The recycled water production capacity at the plant operated by Goleta Sanitary District (GSD) is approximately 3,300 AFY based upon the tertiary treatment plant capacity of 3.0 million gallons per day (MGD). The ability to fully utilize recycled water, however, is limited by outdoor irrigation recycled water demand patterns. These demand patterns are typically condensed into a 12-hour period rather than a 24-hour period, and are driven by the irrigation season. While storage is available to address daily needs, storage is not available to address seasonal variability in irrigation demand between the wet winter months and dry summer months. Currently GWD is delivering approximately 1,000 to 1,150 AFY to customers, and would require additional infrastructure to deliver recycled water more than 1,150 AFY. See Chapter 6 for a more comprehensive description of recycled water infrastructure and supply.

GWD received funding through the Water Recycling Funding Program of the State Water Resources Control Board (SWRCB) for a Goleta Potable Reuse Facilities Plan, which is examining the feasibility of expanded use of recycled water within GWD's service area. If this plan determines that indirect or direct potable reuse is feasible for implementation, GWD may be able to increase future recycled water use significantly. Refer to Section 6.2.2 for further discussion.

5.6 Transfers and Exchanges

GWD has, on occasion, sold water to or purchased water from other water purveyors. In most cases, the transactions were intended to address short-term needs or opportunities. Future short-term water purchases from a willing seller could again be considered in the event of a projected or actual water shortage. Similarly, GWD could consider selling surplus water on a short-term basis when projected or actual supplies are more than GWD demand.

GWD has two categories of potential water exchanges or transfers:

1. **Exchanges or Transfers among Cachuma Project Member Units.** GWD can purchase water from other Cachuma Project Member Units in the event of a need, or to sell unneeded water to other Cachuma Member Units. This type of transaction could occur when there is a willing seller and buyer. Cachuma Member Units can readily transfer water to one another because all the Member Units have water stored in Lake Cachuma; these transactions do not require the approval of USBR.
2. **Exchanges or Transfers among SWP Contractors.** GWD can purchase or sell SWP water from other SWP contractors in the state under the DWR Turnback Pool Program. Under this program, SWP contractors can sell water at any time to other SWP contractors, provided the buyer can convey the water. This type of transaction is coordinated by CCWA on behalf of the local SWP contractors. Each year, DWR notifies CCWA of the anticipated SWP deliveries to its members, including any SWP water for sale by other SWP contractors. GWD can sell up to the amount of SWP water that is available to GWD in that year, and that sale is subject to approval by CCWA. The CCWA contractors can also sell and exchange water among themselves, or among other SWP contractors through the Supplemental Water Purchase Program (SWPP). A member agency wishing to participate in the SWPP indicates the amount of water desired for sale or exchange, and CCWA will attempt to find water to meet those needs. In December 2015, GWD acquired 2,500 AF of supplemental water from another contractor through the CCWA SWPP to augment existing supplies in response to a fourth consecutive year of drought. GWD has also sold water to other CCWA contractors in prior years.

GWD is party to an ongoing Exchange Agreement with ID#1 whereby Lake Cachuma water is exchanged for SWP water. This is a "one for one" exchange, and does not result in additional water supply for GWD.

5.7 Current and Projected Water Supply

The total water supplies produced or purchased by GWD in 2015 are shown in Table 5-2 and projected water supplies are shown in Table 5-3. As indicated in Table 5-3, supplies available for use by GWD are projected to remain unchanged between now and 2035 except for a small planned increase in recycled water use. The projected reliability of each of the supplies is discussed in Chapter 8.

Table 5-2: DWR Table 6-8: Water Supplies – Actual 2015

Water Supply	Additional Detail on Water Supply	Actual Volume (AFY)	Water Quality	Total Right or Safe Yield (AFY)
Groundwater	Goleta Groundwater Basin	5,263 ⁽¹⁾	Drinking Water	2,350
Recycled Water	Goleta WWTP	1,133	Recycled Water	4,752 ⁽²⁾
Surface Water	Cachuma Project Water	4,432	Drinking Water	9,322
Purchased or Imported Water	State Water Project	1,592	Drinking Water	7,450 ⁽³⁾
Total		12,420		23,874

Notes:

1. The Wright Judgment provides GWD with the right to defer production of its annual groundwater entitlement, and considers that water as GWD' stored water for later use during dry years, droughts, and emergencies. In 2015, GWD relied upon deferred water to exceed its annual right to extract 2,350 AFY.
2. This value is the total secondary effluent from the plant in 2015. The current tertiary treatment capacity of 3.0 MGD limits potential recycled water production to approximately 3,300 AFY.
3. The SAFE Ordinance requires that for planning purposes, the District project 3,800 AF of available SWP supplies. The District's maximum Table A entitlement and drought buffer is 7,450 AFY.

Table 5-3: DWR Table 6-9: Water Supplies – Projected

Water Supply	Additional Detail on Water Supply	Reasonably Available Volume			
		2020	2025	2030	2035
Groundwater	Goleta Groundwater Basin	2,350	2,350	2,350	2,350
Recycled Water	Goleta WWTP	1,185	1,225	1,265	1,265
Surface Water	Cachuma Project Water	9,322	9,322	9,322	9,322
Purchased or Imported Water	State Water Project	3,800	3,800	3,800	3,800
Total		16,657	16,697	16,737	16,737

5.8 Planned Water Supply Projects and Programs

Although current water supply projections as reported in Table 5-3 are consistent through 2035, there are potential planning efforts that could provide options for GWD to further increase the use of local supplies. At the direction of its Board, GWD is investigating and evaluating potentially feasible means of enhancing water supplies for the Goleta Valley. Specifically, GWD received funding through the Water Recycling Funding Program of the SWRCB for the development of the Goleta Potable Reuse Facilities Plan (further discussed in Section 6.2.2).

GWD is also preparing a Stormwater Resources Plan, the purpose of which is to identify supply augmentation potential from various stormwater capture projects within GWD. Such additional supplies from potential stormwater projects may further enhance the GWD supply portfolio, but are not included as a source of supply for purposes of this UWMP.

In addition, GWD will continue to place a strong focus on demand management and achieving permanent conservation to meet future demand. Based on this discussion, GWD does not currently have any planned water supply projects or programs, as indicated in Table 5-4.

Table 5-4: DWR Table 6-7: Expected Future Water Supply Projects or Programs

<input checked="" type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table.
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5.9 Desalinated Water

The California UWMP Act requires a discussion of potential opportunities for use of desalinated water (Water Code Section 10631[i]). GWD participated in the financing of the City of Santa Barbara's seawater desalination plant during the 1987 to 1991 drought, but no longer has any financial or institutional arrangements with the City of Santa Barbara for desalinated water. Past studies by GWD have shown that seawater desalination is not financially feasible. GWD is exploring the feasibility of indirect and direct potable reuse within its service territory, and will release a final Potable Reuse Facilities Plan in 2017, discussed in the following chapter. The District is also exploring stormwater capture as an alternative source of supply augmentation.

Chapter 6 Recycled Water

This chapter describes GWD’s recycled water system and recycled water demand projections.

6.1 Recycled Water System Description

Both the Goleta West Sanitary District (GWSD) and the GSD provide wastewater collection to customers within the GWD service area. Wastewater from both the GWSD and the GSD is treated at the GSD Wastewater Treatment Plant (WWTP). Recycled water service within Goleta began in 1994 in response to drought conditions of the early 1990s, and the Wright Judgement and resulting limitations on GWD groundwater pumping. The GSD WWTP is constructed to handle a peak dry weather flow of 9 MGD and produces secondary effluent, a portion of which is sent to the recycled water system. The recycled water system consists of flash mixing tanks, flocculation tanks, anthracite filters, a chlorine contact tank and storage tanks. The on-site storage tanks allow the GSD WWTP to operate at a steady, efficient rate regardless of daily fluctuations in recycled water demand. The existing recycled water system can produce up to 3 MGD (approximately 3,000 AFY) of tertiary effluent for recycling. However, the ability to fully use recycled water is limited by irrigation demand patterns, which are typically condensed into a 12-hour period rather than a 24-hour period, and is limited by recycled water delivery capacity.

Table 6-1 and Table 6-2 provides information on 2015 wastewater collection, treatment, and disposal.

Table 6-1: DWR Table 6-2: Wastewater Collected Within Service Area in 2015

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area in 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
GSD	Metered	3,159	GSD	GSD WWTP	Yes	No
GWSD	Metered	1,593	GSD	GSD WWTP	Yes	No
Total Wastewater Collected from Service Area in 2015:		4,752				

Note: All values in AF.

Table 6-2: DWR Table 6-3: Wastewater Treatment and Discharge within Service Area in 2015

Wastewater Treatment Plant Name	GSD WWTP
Discharge Location Name or Identifier	Pacific Ocean
Discharge Location Description	5,800 feet offshore and 92 feet below Mean Lower Low Water level
Method of Disposal	Ocean outfall
Does This Plant Treat Wastewater Generated Outside the Service Area?	No
Treatment Level	Secondary Disinfected - 2.2
Wastewater Treated	4,752 AFY
Discharged Treated Wastewater	3,619 AFY
Recycled Within Service Area	1,133 AFY
Recycled Outside of Service Area	0 AFY

6.2 Recycled Water Demand

Currently, GWD delivers recycled water for landscape irrigation uses as well as a minor amount for toilet flushing. Over the last 20 years, the amount of recycled water produced and delivered has remained relatively constant, with some variation due to rainfall. In years when the Goleta Valley receives higher than normal rainfall, demand for recycled water is low.

Based on known recycled water projects, demand for recycled water is expected to increase by approximately 130 AFY by 2030. Recycled water service inquiries from potential customers have significantly increased during the recent drought period; however, the viability of serving these customers has not been determined yet. Table 6-3 presents projections of potential recycled water use by sector through 2035. Table 6-4 compares 2015 recycled water use with projections from the 2010 UWMP, and shows that actual recycled water use is higher than projections, which reflects the recent drought period.

Table 6-3: DWR Table 6-4: Current and Projected Recycled Water Direct Beneficial Uses within Service Area

Name of Agency Producing (Treating) the Recycled Water:				Goleta Sanitary District			
Name of Agency Operating the Recycled Water Distribution System:				Goleta Water District			
Supplemental Water Added in 2015				None			
Source of 2015 Supplemental Water				N/A			
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015 (Actual)	2020	2025	2030	2035
Landscape irrigation (excludes golf courses)	Maintaining landscapes	Tertiary	494	540	580	620	620
Golf course irrigation	Watering greens	Tertiary	634	630	630	630	630
Commercial use	Toilet Flushing/ Cooling Towers	Tertiary	5	15	15	15	15
Total			1,133	1,185	1,225	1,265	1,265

Table 6-4: DWR Table 6-5: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

Use Type	2010 Projection for 2015	2015 Actual Use
Landscape irrigation (excludes golf courses)	1,065 ⁽¹⁾	494
Golf course irrigation	-- ⁽¹⁾	634
Commercial use	5	5
Total	1,070	1,133

Note:

1. Golf course irrigation and landscape irrigation was reported as a combined value in the 2010 UWMP.

6.2.1 Potential Additional Users

Since recycled water system service began in 1994, GWD has added new customers within proximity to the existing system when service is requested. GWD has completed several recycled water market surveys over the years and, most recently, GWD participated in the 2013 South Coast Recycled Water Development Plan (RMC 2013), which was coordinated by the Santa Barbara County Water Agency and funded through Proposition 84. For the GWD service area, the study identified seven potential recycled water users located near the existing recycled water distribution system, with 27 AFY of potential additional demand. Similar to the previous approach, GWD will continue to work with those property owners to expand recycled water use where feasible.

The Goleta Valley has a large agricultural market, a portion of which could potentially use recycled water. There are obstacles to using recycled water for agricultural irrigation, however. Avocados and citrus are the dominant crops in the Goleta Valley, and these are sensitive to dissolved minerals found in recycled water. Avocados are extremely sensitive to total dissolved solids (TDS), requiring water with TDS of less than 800 mg/L. Currently the recycled water system produces water with TDS of approximately 1,250

mg/L. To use recycled water for agricultural irrigation would require additional and, perhaps, costly enhanced treatment. As a result, GWD does not consider agriculture a near-term recycled water customer.

6.2.2 Potable Reuse Study

To support local supply diversity and reliability, GWD is developing a Potable Reuse Facilities Plan to identify recycled water opportunities beyond existing non-potable use. The recent extended drought has highlighted the variability of Cachuma Project and SWP surface water supplies. The District's previous water supply planning efforts positioned the community for successful weathering of the existing drought, but future drought conditions, potential increased environmental releases from Lake Cachuma, and increased water supply variability, have highlighted the need to further enhance local supply reliability and the potential for expanding reuse. As a result, GWD's potable reuse study will investigate opportunities to maximize the local water supply benefit of the area's wastewater effluent that is not currently reused, but discharged to the ocean.

The goal of the study is to assist GWD in identifying the preferred pathway to maximize reuse of recycled water as a potable water supply supplement. The study will evaluate the potential for:

1. Groundwater replenishment options that introduce advanced treated recycled water into the groundwater aquifer through injection wells and subsequently recover the water using production wells at distant locations.
2. Source water augmentation options that introduce advanced treated recycled water into a source water supply (e.g., CDM WTP).
3. Aquifer storage and recovery options that introduce advanced treated recycled water into the groundwater aquifer through injection wells and subsequently recover the water using the same wells (i.e., same location).
4. Direct potable reuse options that introduce advanced treated recycled water directly into the potable water distribution system (i.e., "flange to flange" or "pipe to pipe").
5. Combinations of the various options described above.

The study will consider near-term and long-term opportunities for potable reuse. An implementation plan will be defined to identify steps to successfully implement potable reuse with a focus on potential immediate steps. The study is anticipated to be completed by the end of 2017 and could result in GWD increasing future recycled water projections in subsequent UWMP updates.

6.2.3 Optimizing Recycled Water Use

There are significant financial benefits for recycled water users within the GWD service area. Currently, recycled water rates are 40 percent lower than the landscape water rate and the urban water rate. Recycled water is also available during times of drought and other water shortages and is, therefore, not subject to the same water use restrictions and conservation requirements as potable water. As discussed earlier, GWD is exploring opportunities and local partnerships to identify projects that fully use and increase the long-term viability of recycled water as a permanent supply source for the Goleta Valley in the most efficient way. However, large increases in non-potable demand beyond those identified above are not anticipated in the near future. There are limits to the existing recycled water market, and high costs associated with expanding and upgrading the existing recycled water distribution system. GWD will revise its recycled water analysis, if necessary, depending upon the outcome and results of the Goleta Potable Reuse Facilities Plan.

Table 6-5: DWR Table 6-6: Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Mandatory Use Ordinance	To require connection and use for certain customers	In place	N/A
Rate Structures	Discounted rates to encourage use	In place	N/A
Customer Conversions	Construct infrastructure to serve customers adjacent to existing system	In place	130 ⁽¹⁾
Total			130 AFY

Note:

1. Based on known recycled water projects through 2030.

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Chapter 7 Water Quality

The quality of any natural water is dynamic in nature. This is true for the SWP, local surface water, and local groundwater. For surface waters, quality can be affected during periods of intense rainfall or snowmelt, resulting from changes in the routes of surface water movement. These changes can result in the mobilization of new constituents that then enter the water, and dilution or elimination of other constituents. Depending on water depth, groundwater will pass through different layers of rock and sediment and leach different materials from those strata that can change water quality. Water depth is a function of local rainfall, rates of groundwater extraction, and artificial recharge. During periods of low groundwater levels, the mineral concentration of groundwater generally increases. Water quality is not a static feature of water, and these dynamic variables must be recognized.

As required by the Safe Drinking Water Act, GWD provides annual Water Quality Reports to its customers, also known as Consumer Confidence Reports (CCR). This mandate is governed by the U.S. Environmental Protection Agency (EPA) and the SWRCB Division of Drinking Water to inform customers of their drinking water quality. In accordance with the Safe Drinking Water Act, GWD monitors several regulated and unregulated compounds in its water supply and the water delivered to GWD potable customers consistently meets the standards required by the state and federal regulatory agencies.

As mentioned previously, GWD's sources of water are from the Cachuma Project, SWP, local groundwater and recycled water. This chapter provides a general description of the quality of these water supplies and a discussion of potential water quality impacts on their reliability.

7.1 Cachuma Project and SWP Water

GWD's CDM WTP treats raw surface water from Lake Cachuma (a blend of Cachuma and SWP water). The raw water contains microbial and particulate matter that does not meet federal and state primary and secondary drinking water regulations. The treatment plant is required by these regulations to remove these substances via coagulation, sedimentation, filtration, and disinfection via chlorination. Chlorination provides a disinfectant residual that is required by federal and state regulations, and helps maintain a safe drinking water supply throughout the potable water distribution system. This multi-barrier treatment process has proven sufficient to meet federal and state primary and secondary drinking water standards. The quality of water from the Cachuma Project and SWP water conveyed through Lake Cachuma is not considered an impediment to water supply reliability.

The decline in water levels of Lake Cachuma coupled with the lack of inflow into the lake has increased the level of trihalomethanes (THM) in surface water. GWD has developed and implemented treatment techniques and adjustments to the treatment process at the CDM WTP and in the distribution system to reduce THM levels and remain compliant with all standards and regulations.

7.2 Groundwater

GWD pumps groundwater from the Central subbasin of the Goleta Groundwater Basin. Historically, this groundwater has contained iron and manganese that did not meet federal and state secondary drinking water regulations (GWD 2016). An evaluation of water quality trends indicates that iron and manganese continues to require additional drinking water treatment prior to delivery to customers. Chloride concentrations in the Central subbasin generally reached a maximum in the late 1980s and early 1990s, coinciding with a period of heavy groundwater pumping. Reduced pumping and injection of lower-chloride Cachuma spill water have reduced chloride levels in groundwater.

GWD treats groundwater for iron and manganese with filtration and oxidation via chlorination. Chlorination also provides a disinfectant residual that is required by federal and state regulations and helps maintain a safe drinking water supply throughout the distribution system. Treatment has proven sufficient to meet federal and state primary drinking water regulations.

There are several spills and leaks of contaminants at the ground surface overlying the Goleta Groundwater Basin. The spilled or leaked contaminants range from gasoline (most common) to dry cleaning fluid. The agency responsible for enforcing the cleanup of most of these sites is the Central Coast Regional Water Quality Control Board (Regional Board). The Regional Board tracks each of these sites, approves remediation plans, and eventually determines when the site is remediated and the case is closed. For the roughly 143 sites in the Goleta-Santa Barbara area (SWRCB, 2016):

- 80 percent have been remediated and the case is closed
- 4 percent are currently being remediated
- 8 percent are being assessed for remediation
- 8 percent are currently being monitored

These spills and leaks are only a potential problem to the aquifers in areas of the basin where there are no confining layers that separate the aquifers from the surface soils – the danger is in the recharge areas of the basin where contaminants may move freely from ground surface to aquifer. These recharge areas are generally in the foothills to the north of most spills (GWD 2016).

7.3 Water Quality Impacts on Reliability

Based on current conditions, GWD does not anticipate any significant or immediate changes in its available water supplies due to water quality. However, water quality issues are constantly evolving. GWD will act to protect and treat supplies when needed, but it is well recognized that water quality treatment can have significant costs.

Chapter 8 Water Supply Reliability

The UWMP Act requires urban water suppliers to assess water supply reliability by comparing total projected water used with the expected water supply over the next twenty years in five-year increments. The UWMP Act also requires an assessment of water supplies for a single dry year and multiple dry years. The single dry year represents the lowest water supply available to GWD and the multiple dry year period represents the lowest water supply available to GWD for three consecutive years or more. This chapter presents the reliability assessment for GWD’s service area.

Reliability is a measure of a water supplier’s expected success in managing water shortages. The combination of demand management and supply augmentation options helps to reduce the frequency and severity of shortages. The reliability of GWD’s water supply is dependent on the reliability of Cachuma Project, SWP, and local groundwater supplies. Recycled water provides a small supplement to GWD’s existing supplies. Table 8-1 shows the factors resulting in inconsistency of supply for GWD’s water supply sources.

Legal factors that affect water supply include regulations, judgments and policies that restrict the timing, amount, or way water can be diverted. One example of a legal factor includes groundwater adjudication which prescribes the amount and way groundwater can be extracted. Environmental factors that can affect water supply include requirements to maintain minimum instream flow for fish or habitat, which limit the amount of water that can be diverted for human use. Changes in water quality and water quality regulations can limit the amount of water considered suitable for a particular use. Climatic conditions, particularly long-term drought, may reduce surface water flow and groundwater recharge.

Table 8-1: Factors Resulting in Inconsistency of GWD Supplies

Water Supply Sources	Legal	Environmental	Water Quality	Climatic
Cachuma Project	X	X		X
State Water Project	X	X		X
Groundwater	X	X		X
Recycled Water	X			

8.1 Reliability of Supplies

8.1.1 Cachuma Project

Normal Cachuma Project deliveries to GWD are 9,322 AFY; however, for the first time in history, GWD received a zero percent (0%) allocation of Cachuma water for the 2015-16 water year due to prolonged drought. The annual average of Cachuma deliveries in the last ten years has been 8,217 AFY.

Over the past 20 years, circumstances surrounding the Cachuma Project have changed, including reduced reservoir capacity due to sedimentation, increased downstream releases required by the National Marine Fisheries Service (NMFS) under the 2000 Biological Opinion, and implementation of the Settlement Agreement with downstream water rights interests. In 2014, the NMFS and United States Bureau of Reclamation (USBR) formally initiated reconsultation of the 2000 Biological Opinion for steelhead trout and the operation of the Cachuma Project. A draft revised Biological Opinion has been provided to USBR by NMFS, and this draft will inform future discussion of Cachuma reliability. In addition, the SWRCB issued its Draft Water Rights Order in late 2016, providing further clarity on potential long-term reductions in Cachuma Project yield and potential impacts to GWD entitlement.

While no currently published evidence supports a long-term reduction in Cachuma Project yield and reduction in GWD entitlements, GWD conservatively considered such potential reductions as part of the 2017 Water Supply Management Plan Update, which included multiple scenarios evaluating the impact of reduced Cachuma Project yield, including “worst case” scenarios of greatly reduced Cachuma yield.

8.1.2 State Water Project

DWR prepares a biennial report, the SWP Delivery Capability Report (DCR) to assist SWP Contractors and local planners in assessing the near and long-term availability of supplies from the SWP. DWR issued its most recent update of the DCR in 2015. In the 2015 update, DWR provides SWP supply estimates for SWP contractors to use in their planning efforts, including for use in their 2015 UWMPs. The 2015 DCR also includes DWR’s estimates of SWP water supply availability under both current and future conditions.

DWR’s estimates of SWP deliveries are based on a computer model that simulates monthly operations of the SWP and Central Valley Project systems. Key assumptions and inputs to the model include the system facilities, hydrologic inflows to the system, regulatory and operational constraints on system operations, and projected contractor demand for SWP water. For example, the 2015 DCR uses the following assumptions to model current conditions: existing facilities, hydrologic inflows to the model based on 82 years of historical inflows (1922 through 2003), current regulatory and operational constraints, and contractor demand at maximum Table A Amounts. Overall, the current average reliability of SWP water is 61% of Table A allocation, with a low of 11% during the driest year to a high of 100% during the wettest year.

To evaluate SWP supply availability under future conditions, the 2015 DCR included four model studies.

- Early Long-Term: Adds long-term climate change assumptions to the baseline projections.
- Existing Conveyance High Outflow: Adds high Delta outflow assumption requirements to the Early Long-Term alternative.
- Existing Conveyance Low Outflow: Adds low Delta outflow assumption requirements to the Early Long-Term alternative.
- Bay-Delta Conservation Plan Alternative 4 H3 study (Alt 4): Assumes implementation of the Bay-Delta Conservation Plan with the Early Long-Term alternative.

GWD is using the Existing Conveyance High Outflow alternative for projections, the most conservative projection that factors in long-term climate change variables. The alternative assumes early long-term climate change conditions (2025 emission levels) with a 15-cm sea level rise, no Bay Delta Conservation Plan, South Delta operating restrictions, and enhanced spring outflow requirements in the Delta that may further restrict SWP deliveries south of the Delta. The alternative results in average SWP deliveries to GWD of 39% (2,910 AFY) and a minimum single year low of 8%.

Based on the 2017 Water Supply Management Plan Update, which incorporates the 2015 DCR SWP projections, GWD projects average SWP water use increasing from approximately 1,940 AF in 2015 to approximately 2,450 AF in 2035. The projections consider annual use of SWP annual allocations, storage, contractual capacity in the Coastal Branch of the California Aqueduct, and the SAFE Ordinance (which limits SWP supplies expected in a normal year to 3,800 AF).

8.1.3 Groundwater

Based on the 2017 Water Supply Management Plan Update, GWD anticipates an average year groundwater yield of 2,350 AFY (the GWD allowed base extraction under the Wright Judgment). Under drought conditions, GWD anticipates increasing groundwater production to offset reduced surface water availability. When surface water is available, GWD intends to reduce groundwater production. By not taking all of its groundwater entitlement in an average year and injecting excess surface water in wet years, GWD anticipates maintaining a healthy drought buffer in the Goleta Groundwater Basin for future years.

Given potential variations in demand and availability of other supply sources, additional amounts could be pumped from the basin to serve customers, subject to SAFE limitations and pumping capacity constraints; however, GWD does not currently anticipate the need to do so beyond the near-term.

8.1.4 Recycled Water

Recycled water supplies are considered an extremely reliable source of supply. GWD recycled water demand is currently lower than the amount of recycled water generated in its service area. Projected recycled water use is expected to increase approximately 5% above current deliveries of approximately 1,133 AFY by 2020, and approximately 12% by 2030. GWD does not anticipate any issues with the reliability of recycled water to its customers.

8.2 Supply and Demand Comparisons

The 2017 Water Supply Management Plan Update analyzed available supplies and water demand for GWD’s service area to assess the region’s ability to satisfy demand under three scenarios: a normal water year, single-dry year, and multiple-dry years. The normal year supply projections are based on annually available supplies while the single-dry year and multiple dry year supply values are based on an optimized water supply strategy that meets dry year demand. The tables in this section present supply and demand for the various drought scenarios for the projected planning period of 2015 to 2035 in five-year increments.

Table 8-2 lists the years that GWD identifies as its historical average, single driest year, and driest multi-year period. These years are known as the “Base Years.” The historic hydrologic years that represent each year type are reflected in the “Base Year” column of the table.

Table 8-2: DWR Table 7-1: Basis of Water Year Data

Year Type	Base Year	Available Supplies if Year Type Repeats
		Volume Available
Average Year	N/A	16,737
Single-Dry Year	2012	14,657
Multiple Dry Years 1st Year	2014	14,657
Multiple Dry Years 2nd Year	2015	14,657
Multiple Dry Years 3rd Year	2016	12,685

Note: The Average Year value is the reasonable available volume of supply available in average years (per Table 5-3: DWR Table 6-9) while the actual use of the available supplies in an average year will be lower than this value (per Table 8-3: DWR Table 7-2). The Base Year for each dry year is from the 2017 Water Supply Management Plan model. Base Years are similar but not identical to the actual data from those years because Cachuma and State Water supplies for those years come from the RiverWare and State Water Project capability modeling results.

The 2017 Water Supply Management Plan Update evaluated optimization of use of supplies over a 95-year simulation period. A summary of the different supplies used in the plan’s model under average, single dry year and multiple dry years through 2035 are shown in Table 8-3, Table 8-4, and Table 8-5, respectively. As shown in the tables, use of groundwater and SWP water is lower in average years and increases in dry years to make up for reductions in Cachuma Project water. SWP water supplies in dry years consist of SWP allocation, CCWA Bank water, and supplemental SWP purchases. In addition, the plan recommends:

- Injection of SWP into the Goleta Groundwater Basin when possible
- Banking SWP water in San Luis Reservoir as part of the CCWA Bank
- Using Cachuma Project water first to meet water demand except during droughts

- Increasing groundwater pumping/treatment capacity to ensure supply reliability at higher levels of demand in the future
- Developing approximately 1,500 AFY of local supplies to reduce both the frequency and magnitude of future supply shortfalls. The supplies could potentially include injection of advanced treated recycled water into the Goleta Groundwater Basin, stormwater capture, and/or the purchase of local supplies from other water purveyors in the region.
- Developing additional supplemental supplies if the Cachuma Project yield is reduced in the future.

Table 8-3: DWR Table 7-2: Normal Year Supply and Demand Comparison (AFY)

	Current	2020	2025	2030	2035
Cachuma Project Water ⁽¹⁾	9,811	9,829	9,839	9,845	9,849
SWP Water	1,942	2,372	2,590	2,726	2,828
Groundwater	1,160	1,785	2,102	2,301	2,449
Recycled Water	1,061	1,185	1,225	1,265	1,265
Total Supplies ⁽²⁾	13,974	15,171	15,755	16,137	16,391
Demand	13,824	15,069	15,700	16,096	16,391
Difference in Normal Year	150	102	55	41	0

Note: Values in this table are from the 2017 Water Supply Management Plan Update. The supplies are based on optimized water supply strategy that reserves some supplies for dry years.

1. While the GWD's annual entitlement to Cachuma Project Water is 9,322 AFY, the long-term average reflected above includes unused carryover supplies from previous years and excess water that becomes available when Cachuma Reservoir spills (on average, every 3 years); and is therefore higher than the entitlement amount.
2. Total supplies projected for use in a normal year is lower than the average supply available (per Table 5-3: DWR Table 6-9) since a portion of some supplies are reserved for dry years.

Table 8-4: DWR Table 7-3: Single Dry Year Supply and Demand Comparison (AFY)

	Current	2020	2025	2030	2035
Cachuma Project Water	9,322	9,322	9,322	9,322	9,322
SWP Water	2,427	2,800	2,990	3,109	3,197
Groundwater	1,923	2,852	3,323	3,619	3,839
Recycled Water	985	1,059	1,096	1,120	1,137
Total Supplies	14,657	16,033	16,731	17,169	17,495
Demand	14,657	16,033	16,731	17,169	17,495
Difference in Single Dry Year	0	0	0	0	0

Note: Values are from the 2017 Water Supply Management Plan Update. The supplies are based on optimized water supply strategy that meets dry year demands.

Table 8-5: DWR Table 7-4: Multiple Dry Years Supply and Demand Comparison (AFY)

	Current	2020	2025	2030	2035
First Year					
Cachuma Project	7,458	6,886	6,596	6,414	6,278
State Water Project	3,214	1,655	865	369	0
Groundwater	3,000	6,433	8,174	9,266	10,080
Recycled Water	985	1,059	1,096	1,120	1,137
Total Supplies	14,657	16,033	16,731	17,169	17,495
Demand	14,657	16,033	16,731	17,169	17,495
Difference in First Year	0	0	0	0	0
Second Year					
Cachuma Project	4,195	4,195	4,195	4,195	4,195
State Water Project	2,427	2,482	2,510	2,527	2,540
Groundwater	7,050	8,298	8,930	9,327	9,623
Recycled Water	985	1,059	1,096	1,120	1,137
Total Supplies	14,657	16,033	16,731	17,169	17,495
Demand	14,657	16,033	16,731	17,169	17,495
Difference in Second Year	0	0	0	0	0
Third Year					
Cachuma Project	0	0	0	0	0
State Water Project	4,500	4,500	4,500	4,500	4,500
Groundwater	7,200	8,597	9,305	9,749	10,080
Recycled Water	985	1,059	1,096	1,120	1,137
Total Supplies	12,685	14,155	14,901	15,369	15,717
Demand	14,657	16,033	16,731	17,169	17,495
Difference in Third Year	-1,972	-1,878	-1,830	-1,800	-1,778

Note: Values are from the 2017 Water Supply Management Plan Update. The supplies are based on optimized water supply strategy that meets dry year demands. Shortfall in the third year will be addressed through demand reductions, as was accomplished by District customers during the recent (ongoing) drought.

8.3 Climate Change

8.3.1 State and Regional Climate Change Analyses

A topic of growing concern for water planners and managers is climate change and the potential impacts it could have on California’s future water supplies. Climate change models have predicted that potential effects of climatic changes could include: increased temperature, reduction in Sierra Nevada snowpack depth, early snow melt and a rise in sea level.

In June 2005, Governor Arnold Schwarzenegger issued Executive Order S-3-05, which requires biennial reports on climate change impacts in several areas, including water resources. The State’s Climate Action Team was formed in response to Executive Order S-3-05. To help unify analysis across topic areas, the Climate Action Team worked with scientists from the California Applications Program’s California Climate Change Center to select a set of future climate projections to be used for analysis. In the assessment *“Using Future Climate Projections to Support Water Resources Decision Making in California,”* the Climate Action Team selected six different global climate change models to evaluate climate change impacts, assuming two different greenhouse gas emission levels (a high end and a low end), for a total of 12 scenarios. The results of the study indicated climate change has already been observed, in that the last 100 years have seen air temperatures rise about one degree Fahrenheit as well a greater documented variance in precipitation with greater extremes in both heavy flooding and severe droughts.

In July 2006, DWR issued *“Progress on Incorporating Climate Change into Management of California’s Water Resources,”* as required by Executive Order S-3-05. That report demonstrated how various analytical tools could be used to address issues related to climate change. The report presents analytical results showing potential impacts on SWP operations, including reservoir inflows, delivery reliability, average annual carryover storage, as well as many other operational parameters. Some of the main impacts include changes to south-of-Delta SWP deliveries (from an increase of about one percent in a wetter climate change scenario to about a ten percent reduction for a drier scenario), increased winter runoff and lower SWP allocations in the three driest scenarios, lower carryover storage in drier scenarios and higher carryover storage in the wetter scenario.

In 2013, the Santa Barbara Integrated Regional Water Management (IRWM) Plan (RMC 2013) was updated to include an analysis of climate change vulnerabilities, regional climate change adaptation and mitigation goals and strategies that should be implemented throughout the County of Santa Barbara to meet those goals. GWD participated in this analysis, which is included in the resulting climate change-related vulnerabilities, goals and strategies identified in the Santa Barbara IRWM Plan. The 2013 IRWM Plan presents the most recent and refined analysis to best characterize climate change for GWD and is paraphrased in this section.

8.3.2 Potential Climate Change Impacts

The IRWM Plan identified the potential effects of climate change on the Region. These potential effects are shown in Table 8-6

Table 8-6: Impacts of Climate Change on the Santa Barbara Region by 2100¹

Temperature change	Winter: Projected increases of 4 to 5°F Summer: Projected increases of 5 to 6°F
Precipitation	5 to 7 inch decrease in average annual rainfall
Sea Level Rise	4 - 30 cm by 2030 12 - 61 cm by 2050 42 - 167 cm by 2100
Supply	SWP delivery decrease of 7%-10% by 2050, and 21%-25% by 2100 Changes to local supply not quantified
Wildfire Risk	Low to moderate increase in projected fire risk

Note:

1. By 2100, unless otherwise noted

8.3.3 Regional Climate Change Vulnerabilities

The Santa Barbara IRWM also conducted a collective exercise to identify and prioritize the resulting vulnerabilities from the climate change impacts to the Santa Barbara County Region. These prioritized vulnerabilities are provided in Table 8-7.

Table 8-7: Prioritized Regional Climate Change Vulnerabilities

Prioritization	Vulnerability Issue
High	<p>Water Demand: Habitat demand would be adversely affected</p> <p>Water Demand: Limited ability to conserve further</p> <p>Water Demand: Lack of groundwater storage to buffer drought</p> <p>Water Demand: Meeting demand in peak seasons would be more difficult</p> <p>Water Supply: Decrease in imported supply</p> <p>Water Supply: Decrease in groundwater supply</p> <p>Water Quality: Increased constituent concentrations</p> <p>Water Quality: Poor water quality in surface waters</p> <p>Water Quality: Decrease in recreational opportunity</p> <p>Water Quality: Increase in treatment needs and costs</p> <p>Water Quality: Increased erosion and sedimentation</p> <p>Sea Level Rise: Decrease in land</p> <p>Sea Level Rise: Damage to coastal infrastructure/recreation/tourism</p> <p>Sea Level Rise: Damage to ecosystem/habitat</p> <p>Ecosystem and Habitat: Increased impacts to coastal species</p>
Low	<p>Water Demand: Crop demand would increase</p> <p>Water Demand: Industrial demand would increase</p> <p>Water Supply: Sensitivity due to higher drought potential</p> <p>Water Supply: Decrease in seasonal reliability</p> <p>Water Supply: Invasive species can reduce supply available</p> <p>Ecosystem and Habitat: Decrease in environmental flows</p> <p>Ecosystem and Habitat: Decrease in available necessary habitat</p> <p>Ecosystem and Habitat: Decrease in habitat protection against coastal storms</p> <p>Flooding: Increases in inland flooding</p> <p>Flooding: Increases in flash flooding</p> <p>Hydropower: Decrease in hydropower potential</p>

8.3.4 GWD Supply Vulnerability to Climate Change

GWD also examined specific vulnerabilities to each of GWD’s water supplies as part of the 2017 Water Supply Management Plan:

- State Water Project:** A portion of GWD’s supply includes SWP water. With climate change, it is anticipated that more winter precipitation in the Sierra Nevada will fall as rain instead of snow. Because Sierra Nevada dams are partially operated as flood control facilities, some of the winter rain runoff must be released from the dams to preserve storage space for later storm events, effectively reducing winter storm capture and water available for the SWP. Higher sea levels could threaten the existing levee system in the Delta. Salinity intrusion into the Delta could also

require increased releases of freshwater from upstream reservoirs to maintain compliance with water quality standards. (GWD 2017)

- **Cachuma Reservoir:** Ongoing studies by DWR (DWR 2006) indicate that rainfall in southern California will not change significantly, with climate modeling indicating that precipitation will increase in wet years in the Sierra, but decrease in dry years. This modeling suggests that these effects will likely result in less than a 10 percent swing in precipitation in either direction. However, periodic drought periods may be longer in duration affecting runoff into Cachuma Reservoir. (GWD 2017)
- **Groundwater:** Drought periods may be longer in duration, affecting recharge to the groundwater basin. The projected sea level rise discussed above could also potentially allow the sea to encroach farther up the Goleta Slough and extend the estuary over portions of the West and Central subbasins. This encroachment would likely occur over the portions of the basin that are under confined conditions – that is, there are low-permeability sediments that separate the estuary at the surface from the drinking water aquifers at depth. Thus, it is unlikely that this encroachment would allow saline water into the aquifers. (GWD 2017)
- **Infrastructure:** If seawater were to encroach on the Goleta Slough, distribution pipes such as the recycled water line at the slough would potentially have to be relocated. (GWD 2017)
- **Demand.** Higher temperatures could increase evapotranspiration causing an increase in outdoor water use and crop irrigation (GWD 2017). Increased wildfire frequency and severity may increase water demand for firefighting.

8.3.5 Climate Change Adaptation Strategies

Responses to these changing conditions over the coming decades could include infrastructure changes to improve water supply reliability and storage capability, as well as increased conservation efforts and use of recycled water. Notably, GWD’s Water Supply Management Plan, Infrastructure Improvement Plan, and Sustainability Plan provide established mechanisms through which GWD responds to observed changes in climate patterns that could be implemented within the context of Board established priorities on an annual and ongoing basis. Specific response actions could address:

- **Groundwater Pumping Capacity.** GWD implemented infrastructure improvement projects that have increased the groundwater pumping capacity from 300 AF per month in 2010, to approximately 500 AF per month. These improvements will help maximize the GWD’s ability to meet customer demand during drought or other water shortage emergencies that limit the availability of surface water supplies.
- **Treatment Capacity.** The capacity of GWD’s treatment facility can be a limiting factor in how much Cachuma Project Water can be injected during a spill event (high turbidity in the storm water can reduce treatment capacity). Raw Cachuma water must be treated prior to injection to meet health requirements and to ensure that the wells used for injection do not get plugged with sediment and organic material. This additional treatment capacity could be relatively expensive because it is anticipated that it will be needed during less than 9 percent of the months that Cachuma spills in the Santa Ynez River (GWD 2017).

Non-infrastructure responses that could increase water supply reliability considering climate change include increasing water use efficiency, increasing use of recycled water, and implementing policies to exert extreme caution in making future water allocations, including reducing the annual SAFE allocations and reviewing the current “first come, first served” practice for providing new water allocations.

8.3.6 Future Refinements to GWD Climate Response Strategy

In the future, GWD may choose to quantify climate change impacts. Currently, general circulation models are the primary climate change predictor models. The resolution of general circulation models is too coarse

to be useful for most regional planning studies and decision support purposes. However, there are several ways to scale general circulation model results down to a finer resolution, including the use of statistical models and dynamic regional models. Another approach, called the relative change approach, is to add or subtract a defined quantity or percentage to a parameter of interest to estimate the potential change due to climate shift. This approach gives an initial indication of the expected magnitude and direction of potential change.

Once the potential vulnerabilities are quantified, it would be possible to compare and rank potential strategies based on their effectiveness in adapting to or mitigating climate change impacts. While GWD has not yet taken these actions, it recognizes that the potential impacts of climate change worldwide are likely to be severe and of a magnitude difficult for the layperson to imagine. Accordingly, GWD could be required to refine its local projection and vulnerability assessments to be reflected in future planning efforts.

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Chapter 9 Water Demand Management Measures

GWD recognizes the critical importance of water conservation as an approach to balancing long-term water supply and demand, and was one of the early implementers of formal conservation programs. The initial catalyst for these efforts was the late 1980s drought. Programs included installation of high-efficiency toilets and showerheads, and free onsite water surveys. The program provided rebates for 15,000 toilets between 1987 and 1991, and is largely credited with stabilizing single-family demand, reducing per-capita residential water use by 50 percent, reducing total GWD water use by 30 percent, and reducing wastewater flow by 40 percent.

In 1994, GWD became a signatory to the CUWCC's MOU, which established GWD's firm commitment to implementing demand management measures (DMMs) for efficient water use. In 2010, GWD prepared a Water Conservation Plan (GWD 2010) that established water conservation goals and program needs. It was intended as an interim plan and designed to provide guidelines for implementing DMMs in Fiscal Year (FY) 2010-2011. Program goals as outlined in the 2010 Water Conservation Plan focus on the following elements.

1. **Policy:** Support the MOU as well as other State water conservation programs and policies.
2. **Save Water:** Reduce avoidable water waste, inefficiencies and unnecessary losses.
3. **Drought:** Adapt to changing climate patterns and reduced precipitation.
4. **Security:** Increase available water storage through improved water use efficiency to enable GWD to have the necessary water supply capabilities during emergency events.
5. **21st Century Approach:** Enhance and update the conservation program to reflect state-of-the-art water saving approaches, technologies and practices.
6. **Environment:** Promote water use that will help reduce unnecessary pollution and runoff as well as avoidable degradation of streams and wildlife habitat.
7. **Community and Open Space Preservation:** Maintain community quality of life and open space preservation goals.
8. **Public Credibility:** Demonstrate GWD's commitment to an efficient and environmentally sustainable water system through measurable and significant water savings.

In 2013, GWD completed a Technical Report on Optimizing the Goleta Water District Water Conservation Program. This report provided further information to GWD about its conservation program, including the effectiveness of its existing program and additional measures it could implement to ensure future demand reduction goals are met.

The following sections focus on the demand management measures, as listed in CWC 10631(f)(B), that will help GWD meet its conservation objectives. In addition, GWD has provided its 2013-2014 CUWCC BMP reports in Appendix H.

9.1 Water Waste Prevention Ordinance

A water waste ordinance explicitly states that the waste of water is prohibited. The ordinance may prohibit specific actions that waste water, such as excessive runoff from landscape irrigation, or use of a hose outdoors without a shut off nozzle. A water waste prevention ordinance is in place at all times and is not dependent upon a water shortage for implementation.

Goleta Water District Code Section 6.20.070, Waste of Water, prohibits customers from willfully or negligently permitting leaks or wasteful use of water. If a customer is found in violation of this section, GWD may suspend or terminate service to the customer or refuse to resume service until the customer meets certain provisions. In 2013, GWD amended the Code to add Chapter 6.21, Water Shortage Restrictions, establishing increasingly restrictive water use prohibitions during a declared water shortage,

and creating additional penalties for wasteful use of water. A copy of the GWD Code is provided in Appendix I.

GWD has also supported the City of Goleta and the County of Santa Barbara in implementation of the California Green Building Code and the updated Model Water Efficient Landscape Ordinance, which require water efficient design in new buildings and landscaping.

Moving forward, GWD will continue to use the Code as both a prevention and enforcement tool to limit water waste within GWD's service area. Staff is also researching the feasibility of implementing other waste prevention methods, as well as the possibility of supporting local ordinances that establish permit requirements for water efficient design in construction and landscaping.

9.2 Metering

All GWD service connections have been metered and billed volumetrically since 1973. In 2014, GWD began implementing an accelerated meter replacement program that will replace existing meters with like-size digital ultrasonic meters that record water use electronically. In contrast to mechanical meters, electronic meters measure volumetric flow extremely accurately at any flow rate, allowing GWD to fully account for water use, reducing unintended water loss, while simultaneously promoting conservation. In 2015, GWD completed phase one of the meter replacement program by replacing and upgrading all 800 large meters 2-inch and greater in size, accounting for approximately 6 percent of all customer meters, and 52 percent of total GWD water consumption. Phase two of the meter replacement program will facilitate replacement of the remaining 16,000 meters with electronic meters. Annual water conservation from phase two of the program is expected to be approximately 350 acre feet per year (AFY).

To ensure that conservation goals are met, GWD also intends to prepare a feasibility study examining incentive programs that move landscape water uses on mixed-use meters to dedicated landscape meters in the future.

9.3 Conservation Pricing

GWD has a tiered rate structure for its Single Family Residential (SFR) customer class and a uniform rate structure for all other customer classes. Rates are comprised of both variable and fixed charges. Specifically, variable (commodity) charges are based on the volume of water used each month, while fixed service (meter) charges are based on the size of a customer's meter and are also billed each month. Current rates were developed in 2015 following a cost of service analysis and were adopted by the GWD Board of Directors in May 2015.

Increasing tiered commodity rates for SFR customers were designed to encourage conservation, and are based on monthly consumption. SFR customers pay a lower rate for their first six hundred cubic feet (HCF), an intermediate rate for their next 10 HCF, and the top tier rate for all consumption more than 16 HCF in a month. All other customer classes – multi-family residential, commercial, institutional, and landscape irrigation – receive a uniform urban rate because of the similar characteristics and cost of serving each group.

In addition, in 2015, GWD adopted drought surcharges that impose an additional volumetric fee for each HCF of water used for all customer classes, except for recycled water usage. Drought surcharges apply uniformly to all customers and increase with each elevated stage of a declared water shortage. GWD water rates are discussed in more detail in Chapter 10.4.

As reported in GWD's audited Comprehensive Annual Financial Report (CAFR), the percentage of revenues associated with volumetric billing for the past five fiscal years (FY) is summarized in Table 9-1. GWD will continue working to ensure the required portion of revenue from volumetric rates meets the 70 percent threshold.

Table 9-1: GWD Operating Revenues

	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Volumetric Charges	\$15,672,687	\$18,668,008	\$22,171,254	\$24,005,806	\$19,988,107
Total Operating Revenue	\$22,975,387	\$27,136,533	\$31,475,922	\$33,868,571	\$29,884,003
% Volumetric	68%	69%	70%	71%	67%

This DMM is intended to reinforce the need for water agencies to establish a strong nexus between volume-related system costs and volumetric commodity rates and provide an economic incentive to customers to use water efficiently.

9.4 Public Education and Outreach

9.4.1 Public Information Programs

GWD’s public outreach and community engagement programs are designed to ensure customers have the information, tools, and resources needed to conserve water. Outreach activities include school education programs, booths at local fairs and public events, semi-annual newsletters, regular rebate and conservation-related information updates to its website, conservation letters to targeted customers, and development and distribution of public information materials. GWD also partners with the Green Business Program, and works collaboratively with other Santa Barbara County water providers through the countywide Regional Water Efficiency Program (RWEP), which is coordinated by the Santa Barbara County Water Agency (SBCWA). RWEP activities include maintaining the regional conservation website, www.waterwisesb.org, developing radio and TV commercials, producing the GardenWise TV Program, implementing the Green Gardener and other education programs, and developing printed media placement and other cohesive outreach materials.

Moving forward, GWD will continue its current public information programs, which will consist of providing conservation and water use information on customer bills, offering tours of the Demonstration Garden, and distributing informative newsletters, flyers and other brochures.

9.4.2 School Education Programs

GWD has partnered with RWEP and SBCWA to organize school education programs since 1998. Three different classroom activity manuals for teachers are available that allow students to engage in a hands-on learning experience. Classroom materials for students are also available. In addition to classroom materials and activities, two different school assemblies are performed. The first, “H2O, Where Did You Go?” is a musical comedy that teaches students about the water cycle, states of matter, journey of water to their homes, and water conservation. The second, titled “Waterology,” is a musical performance where students learn about the water cycle, water pollution, groundwater and aquifers, stormwater, and the importance of water conservation.

Over the last five years and in partnership with SBCWA, several presentations have been given to schools within the service area. The number of presentations made and total student attendees for each of the last five years are presented below in Table 9-2.

Table 9-2: Summary of School Education Programs

	2011	2012	2013	2014	2015
Presentations	5	0	3	2	3
Attendees	1,220	0	600	340	31

Each year since 2005, GWD has partnered with the RWEPP to offer high-school students the chance to win awards by creating an entertaining public service announcement that conveys the importance of water conservation in Santa Barbara County. In 2015, 15 videos were received and judged by countywide conservation staff. First and second place videos were used in spring and summer media campaigns.

Moving forward, GWD intends to continue its school education programs through its partnerships with other local agencies and organizations, and is exploring opportunities to increase participation in school assemblies.

9.5 Programs to Assess and Manage Distribution System Real Loss

GWD maintains a program to assess and manage distribution system loss by completing full visual and manual inspections for unreported leaks. Driving and walking inspections are used to detect unreported leaks on GWD’s major transmission mains.

Over the last five years, staff has completed training in the AWWA Water Audit Method and the Component Analysis Process, and has also repaired all reported leaks and breaks to the extent feasible. In 2012, GWD surveyed 16 miles of pipeline and repaired 22 leaks for a total estimated savings of 162 AFY. Part of this included replacing an old six-inch water main with an eight-inch main in conjunction with a Santa Barbara County road improvement project.

Most recently, in 2014 GWD conducted a comprehensive system-wide Leak Survey that consisted of listening to each system valve, all service lines, and fire hydrants to detect leak sounds in the distribution system. Once a leak sound was discovered, correlation equipment was used to pinpoint the exact location of the leak for GWD staff to excavate for subsequent repairs.

GWD will assess and manage distribution system loss moving forward by continuing to complete full visual and manual inspections for unreported leaks and repairing leaks and breaks to the extent feasible. GWD will also complete the AWWA water audit each year leading up to the submittal of the 2020 UWMP.

9.6 Water Conservation Program Coordination and Staffing Support

GWD has a conservation coordinator overseeing the conservation program and implementation activities. The primary responsibilities of the conservation coordinator include designing, developing, and implementing conservation programs for all GWD customers. The coordinator also provides support to customers, including completing water use surveys and reports, answering any questions about conservation programs, and providing printed materials related to GWD’s conservation programs.

Over the last five years, the conservation coordinator has developed conservation materials, organized public outreach events, and managed GWD-sponsored customer rebates. In addition, the conservation coordinator has been GWD’s representative to the Regional Water Efficiency Program and has been involved in regional water conservation efforts. In 2015, the District hired a full-time water conservation Compliance Specialist to implement Water Shortage Restrictions and assist with other conservation activities, such as site visits and issuing rebates, during the drought emergency. Moving forward, GWD will continue its current conservation program by maintaining a full-time Conservation Coordinator on staff.

9.7 Other

In addition to the DMMs listed above, GWD also offers several programmatic BMPs which include rebate programs and other assistance programs for the three major GWD customer types: residential; commercial, industrial, and institutional (CII); and large landscape. These are categorized and discussed in the following sections.

9.7.1 Residential Programs

Residential users in the GWD service area accounted for approximately 90 percent of customer accounts and 46 percent of total water use in 2015. GWD began re-implementing conservation programs for residential customers in 2000, at which time residential water use accounted for 59 percent of total water use. GWD anticipates continuing to offer these programs to its customers to continue reducing water use throughout its service area.

Residential Assistance Program

GWD staff offers free water “check-ups” that address both indoor and landscape water uses, and include:

- Checking for leaks in bathrooms, kitchen and the laundry area
- Checking showerhead flow rates
- Checking toilet flow rates
- Checking irrigation systems
- Providing suggestions on irrigation scheduling

The number of surveys and devices distributed to residential customers is summarized in Table 9-3.

Table 9-3: Residential Water Surveys and Device Distribution

	2011	2012	2013	2014	2015
Single-Family					
Surveys	11	57	53	49	66
Low-Flow Showerheads	11	57	200	500	500
Shower Shut-Off Control Valves	0	0	0	300	500
Faucet Aerators	0	200	400	1,000	1,500
Toilet Flappers	0	0	50	100	500
Toilet Leak Tablets	0	0	400	500	1000
Garden Hose Nozzles	0	0	400	400	400
Multi-Family					
Surveys	1	4	3	2	5
Low-Flow Showerheads	1	4	0	0	200
Shower Shut-Off Control Valve	0	0	0	200	175
Faucet Aerators	0	0	0	0	500
Toilet Flappers	0	0	50	100	250
Toilet Leak Tablets	0	0	100	500	500

Conservation staff will continue to implement GWD Code Section 6.20.070, and work with both Administration and Operations staff to ensure that customers are quickly notified when it appears that they may have a leak.

WaterSense and the California Green Building Code for New Residential Development

An EPA partnership program, WaterSense helps customers identify high-performing, water-efficient products and homes, and provides professional certification programs that embrace and encourage the use of water-efficient design. EPA develops specifications that outline the requirements that products must meet to earn the WaterSense label. In Fiscal Year 2011-12, as part of an update to a Board committee on the 2010 Water Conservation Plan, GWD staff presented a proposal to implement a recognition program for residential construction that meets specifications of the WaterSense program for single-family and multi-family housing. In 2013 GWD became a WaterSense Partner and now has access to promotional outreach and educational materials that are used in social media posts.

GWD supported adoption of the 2010 California Green Building Standards Code, which went into effect January 2011. The Code sets mandatory green building measures, including a 20 percent reduction in indoor water use, as well as dedicated meter requirements and regulations addressing landscape irrigation and design. Local jurisdictions, at a minimum, must adopt the mandatory measures; the Code also identifies voluntary measures that set a higher standard of efficiency, which can also be adopted. In 2011 and 2012, GWD participated on the City of Goleta's Green Ribbon Committee, which established the City of Goleta's Green Building Program that took effect January 1, 2013. Voluntary for most types of projects, the goal of the program is to increase awareness of, and access to, green building resources and encourage the incorporation of green building measures into the design, construction, and maintenance of buildings.

Additional Residential Programs – Landscape

In 2011, the GWD offered a Smart Landscape Rebate Program to residential, commercial, and landscape irrigation customers to replace water thirsty landscapes and inefficient irrigation with water-wise plants and irrigation. In 2011, 24 landscapes were granted rebates through this program, which covered up to 50 percent of the cost of pre-authorized irrigation equipment, water-wise plants and mulch, and/or smart irrigation controllers up to \$1,000. The program was funded by a grant from the USBR, in partnership with the SBCWA and RWEPP partners. The program was reinstated in late 2014 with USBR funding through SBCWA and direct funding from GWD. From 2014 to 2015, 234 rebates were issued to single family residential customers for water-wise landscape projects. GWD also supports Green Gardener and Ocean-Friendly Gardens Workshops that provide education on water-efficient residential and commercial gardening. GWD has continued to implement its Smart Landscape Rebate program since that time.

9.7.2 Commercial, Industrial and Institutional (CII)

GWD offers a Water Saving Incentive Program to assist CII customers in achieving water savings. The program provides rebates for installation of water saving materials specific to each customer site. The program enables commercial customers to achieve water efficiency through individualized projects. By conserving water, these projects encourage efficient use of water resources and improve water supply reliability. The program is open to all commercial, industrial, institutional, agricultural and large landscape customers with qualifying projects within the GWD service area. GWD is assisting large customers in their implementation of fixtures/equipment on the CII demonstrated savings list, including:

- High efficiency toilets
- High efficiency urinals
- Ultra-low volume urinals
- Zero consumption urinals
- Commercial high efficiency single load clothes washers

- Cooling tower conductivity controllers
- Cooling tower pH controllers
- Connectionless food steamers
- Medical equipment steam sterilizers
- Water efficient ice machines
- Pressurized water brooms
- Dry vacuum pumps

In addition, GWD sponsors and assists with the Santa Barbara Green Business Program, where GWD provides free water check-ups and services required as part of program certification. Through these efforts, GWD identifies where and how the measures listed above may be implemented for CII customers, and confirms installations. GWD's commercial customers receive:

- Checks for leaks in indoor fixtures
- Checks for fixture flow rates
- Checks for toilet flow rates
- Checks of irrigations systems
- Suggestions on irrigation scheduling

Furthermore, GWD serves on the UCSB Chancellor's Sustainability Subcommittee on Water. This subcommittee is tasked with assisting UCSB in protecting and conserving water resources with an emphasis on reducing potable water consumption on campus. In 2013/2014 academic year, UCSB achieved a 21 percent reduction of potable water (UCSB 2014). To be consistent with regional state mandated water conservation, UCSB has established a voluntary goal to further reduce water consumption 12 percent by 2016 compared with a 2013 baseline (UCSB 2016).

9.7.3 Large Landscape

GWD offers water surveys for large landscape areas with dedicated irrigation meters, and has offered rebates to all customers for installation of efficient irrigation equipment and plantings. Through March 2017, and with a USBR grant received in partnership with Santa Barbara County, GWD has offered approximately \$240,000 in rebates to all customers.

In 2015, GWD contracted with a water budget vendor to assign water budgets based on evapotranspiration data. GWD staff also offers technical assistance to customers with water use that is 20 percent or more over the established budget and helps develop and implement a strategy to market large landscape water-use surveys to CII accounts with mixed-use meters.

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Chapter 10 Water Shortage Contingency Plan

Ways in which water supplies may be interrupted or reduced significantly include a drought that limits supplies, an earthquake that damages water delivery or storage facilities, a regional power outage, or a toxic spill that affects water quality. This section of the UWMP describes how GWD plans to respond to such emergencies so that customer needs are met promptly and equitably.

In July 2014, GWD completed a comprehensive update of the Drought Preparedness and Water Shortage Contingency Plan (DPWSCP) (Appendix I). Included in the DPWSCP is a draft Water Shortage Contingency Ordinance that provides a framework and guides GWD actions in the event of a water shortage emergency.

The DPWSCP lays out various methods for mitigating the effects of water shortages of increasing intensity in five stages. The objectives of the DPWSCP are to describe, in a single resource, the conditions that constitute a water shortage emergency, to define and discuss the various stages of action, and to provide guidance and procedures to undertake during a declared water shortage. The DPWSCP includes a plan for action at each of the five stages of water shortages. Before the document was finalized, on March 11, 2014, the GWD Board of Directors declared a Stage I Water Shortage consistent with the criteria in the 2010 UWMP due to the state-wide water shortage emergency. Following the adoption of the DPWSCP, the GWD Board declared a Stage II (September 2014) and Stage III (May 2015) Water Shortage Emergency, and adopted water use restrictions for each water shortage stage, which were incorporated into the District Code, as summarized in Table 10-1. All resolutions and ordinances listed in Table 10-1 are included in Appendix I.

Table 10-1: Drought Stage Declarations and Restrictions Timeline

Action	Date	Resolution /Ordinance
Stage I Water Shortage declared	March 11, 2014	Resolution No.2014-08
Stage II Water Shortage declared	September 9, 2014	Resolution No 2014-31
Stage II water use restrictions codified	September 9, 2014	Ordinance No. 2014-01
Stage III, IV, and V water use restrictions codified	January 13, 2015	Ordinance No. 2015-02
Stage III Water Shortage declared	May 12, 2015	Resolution No. 2015-20
Stage III, IV, and V water use restrictions modified	May 12, 2015	Ordinance No. 2015-03

10.1 Planning

To meet short-term water demand deficiencies, and short- or long-term droughts in the communities it serves, GWD has implemented several precautionary methods to maximize water supply reliability and ensure uninterrupted water service. GWD maintains several water reservoirs for daily operations, firefighting, and other emergencies. Much of the system has been designed to operate by gravity, minimizing the need for electricity. Water from Lake Cachuma, GWD’s primary supply source, flows by gravity through the Santa Ynez Mountains via the Tecolote Tunnel to reach GWD’s distribution system without the need for electrical power. GWD uses backup generators at its three main booster pump stations, the CDM WTP, and headquarters to ensure continued service in the event of power blackouts or other emergencies. GWD has two mobile emergency generators that can be used to provide electrical power to groundwater wells. Fuel storage tanks allow GWD to operate its system for extended periods on emergency power.

As described in Chapter 5, GWD maintains a diverse water supply portfolio. If one source of supply is affected by an emergency, GWD can use one of its other sources to serve customers. In addition, consistent with the SAFE Ordinance, GWD maintains a drought buffer in the Goleta Groundwater Basin for use during drought years. The drought buffer can only be used for delivery to existing customers when a drought on the South Coast causes a reduction in GWD's annual deliveries from Lake Cachuma and cannot be used as a supplemental supply for new or additional water demand. Further, when a new service is connected, the annual storage commitment for the drought buffer must permanently increase by 2/3 of the new demand, ensuring the drought buffer expands as demand increases. In times of drought, SAFE prohibits new potable water allocations, providing another measure to protect against water shortages.

In the event of an emergency, GWD will report continuously and, in certain situations, may collaborate with the City of Goleta and the Santa Barbara County Office of Emergency Services. If local resources are overwhelmed by a disaster, regional protocol enables the County of Santa Barbara Office of Emergency Services to contact the State of California Governor's Office of Emergency Services for assistance.

10.2 Stages of Action to Respond to Water Shortages

The DPSWCP lays out five stages to implement during a declared water shortage emergency. The DPSWCP includes voluntary and mandatory water use restrictions designed to reduce discretionary water use depending on the cause, severity, and anticipated duration of the supply shortage. Table 10-2 presents the stages of GWD's Water Shortage Contingency Plan.

Stage V of the WSCP indicates actions that would be taken in the event of a 50 percent or greater reduction in water supplies. A 50 percent or greater loss of supplies could be caused by a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster. Catastrophic supply interruptions occur suddenly and can immediately jeopardize the water supply. If such an interruption would occur, GWD would respond with immediate implementation of Stage V of the WSCP, and in accordance with the GWD Emergency Response Plan (ERP). The District's ERP underwent a comprehensive update in 2014 and is designed to work in conjunction with the ERPs of both Santa Barbara County and the State of California. The ERP outlines different triggers and response actions to all types of emergency incidents related to GWD and public emergencies, allowing for added proactive risk mitigation and enhanced emergency preparedness.

Table 10-2: DWR Table 8-1: Stages of Water Shortage Contingency Plan

Stage	Percent Supply Reduction	Water Supply Condition
I	10-15%	<p>If any of the following occur:</p> <ul style="list-style-type: none"> • District water supply is 85 to 90% of normal (10-15% supply deficiency) for the next 12 months. • District water supply is insufficient to provide 80% of normal deliveries for the next 24 months. • Contamination of 10% of water supply (pollutant exceeds primary drinking water standards).
II	16-25%	<p>If any of the following occur:</p> <ul style="list-style-type: none"> • District water supply is 75 to 85% of normal (16-25% supply deficiency) for the next 12 months. • District water supply is insufficient to provide 75% of normal deliveries for the next 24 months. • Contamination of 20% of water supply (pollutant exceeds primary drinking water standards).
III	26-35%	<p>If any of the following occur.</p> <ul style="list-style-type: none"> • District water supply is 65 to 75% of normal (26-35% supply deficiency) for the next 12 months. • District water supply is insufficient to provide 65% of normal deliveries for the next 24 months. • Contamination of 30% of water supply (pollutant exceeds primary drinking water standards).
IV	36-45%	<p>If any of the following occur.</p> <ul style="list-style-type: none"> • District water supply is 55 to 65% of normal (36-45% supply deficiency) for the next 12 months. • District water supply is insufficient to provide 55% of normal deliveries for the next 24 months. • Contamination of 40 % of water supply (pollutant exceeds primary drinking water standards).
V	46% and higher	<p>If any of the following occur.</p> <ul style="list-style-type: none"> • District water supply is less than 55 % of normal (46% or higher supply deficiency) for the next 12 months. • District water supply is insufficient to provide 50 % of normal deliveries for the next 24 months. • Contamination of 50% or more of water supply (pollutant exceeds primary drinking water standards). • Unanticipated loss of water distribution or supply facilities due to disaster or man-made emergencies.

10.2.1 Demand Reduction Program

GWD demand reduction programs are described in Chapter 9 of this UWMP. GWD maintains an active conservation program, and is an ongoing partner in Santa Barbara County’s Regional Water Efficiency Program. A strong focus on customer incentives, such as waterwise landscape rebates, courtesy customer water surveys, and a focus on public outreach activities, helps to achieve water conservation goals during periods of normal supply, and provides a foundation for reducing customer demand during water shortages. Table 10-3 summarizes WSCP stages and associated consumption reduction methods.

Table 10-3: DWR Table 8-3: Stages of WSCP– Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
I	Expand Public Information Campaign	Includes development of a Water Shortage Declaration media kit and conservation related billing statement messages
I	Offer Water Use Surveys	Identifies largest water users in each sector and contacts for complementary water audits
I	Other	Provides water conservation hotline to allow reporting of water waste
I	Provide Rebates for Landscape Irrigation Efficiency	Accelerates audit and incentive programs for irrigation
I	Other	Accelerates audit and incentive programs for agriculture and large customers
I	Other	Identifies and notifies customers of possible leaks
I	Other	Encourages use of drip irrigation and drought tolerant plants
I	Decrease Line Flushing	Reduces water usage for main flushing, street flushing, and hydrant flushing
I	Reduce System Water Loss	Intensifies maintenance efforts to identify and correct water leaks in the distribution system
II	Expand Public Information Campaign	Includes targeted outreach to customers with large landscapes and customer education on how to perform regular household meter reading and leak detection
II	Other	Encourages the use of pool covers when not in active use
II	Other	Promotes meter reading and leak detection by all customers
II	Other	Encourages posting of notice of shortage conditions and daily linen washing only if requested at hotels, motels, and other lodgings
II	Other	Encourages shorter showers in gyms, athletic clubs, and public pools
III	Expand Public Information Campaign	Includes publishing monthly demand charts in local newspaper or on the District website, and considering hiring a third party to assist with the launch of a major publicity campaign

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
III	Other	Encourages all commercial customers to prominently post water shortage signage with specified language at specified locations
III	Increase Water Waste Patrols	Increased field staff
III	Other	Increased penalty fees
IV	Expand Public Information Campaign	Includes implementing major publicity campaign initiated during Stage III and provides regular media briefings and updates on supply situation
IV	Increase Water Waste Patrols	Implements 24/7 enforcement of demand reduction programs, install flow restrictor, and/or facilitate shut offs

10.2.2 Priority by Use

Priority for use of available potable water during shortages is based on the legal requirements set forth in the California Water Code, Sections 350-358. Accordingly, water use reduction targets and allocations discussed below have been established according to the following ranking system in this Plan (listed from highest to lowest priority):

1. Minimum health and safety allocations for interior residential needs (includes single-family residential, multi-family residential, hospitals and convalescent facilities, retirement and mobile home communities, students housing, firefighting, and public safety). Based on DWR guidance, GWD assumes an allocation of 37.5 up to 68 gallons per person per day for health and safety.
2. Commercial, industrial, institutional/governmental operations (where water is used for manufacturing and for minimum health and safety allocations for employees and visitors), to maintain jobs and economic base of the community (not for landscape use).
3. Permanent agriculture (orchards, vineyards, and other commercial agriculture which would require at least five years to return to production).
4. Annual agriculture (floriculture, strawberries, other truck crops).
5. New customers, the SAFE Ordinance prohibits the District from making new potable water allocations during times of drought when specific water supply conditions are not met.

10.2.3 Prohibitions

Each stage of the Water Shortage Contingency Plan (WSCP) describes specific water uses that are restricted or prohibited while that stage is in effect. Table 10-4 presents each of the restricted or prohibited water uses that correspond with each stage of the WSCP.

Table 10-4: DWR Table 8-2: Restrictions and Prohibitions on End-Users

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
I	Other	Water waste prohibition	Yes
II	Other - Prohibit use of potable water for washing hard surfaces	Unless necessary to protect public health and safety, or no more than every two months with additional restrictions	Yes
II	Landscape - Restrict or prohibit runoff from landscape irrigation		Yes
II	Landscape - Prohibit certain types of landscape irrigation	Hose used for manual irrigation must have shutoff nozzle	Yes
II	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 48 hours of notification	Yes
II	Water Features - Restrict water use for decorative water features, such as fountains	Prohibited except where necessary to support aquatic life, or on residential property	Yes
II	Landscape - Limit landscape irrigation to specific times	For details see Appendix I	Yes
II	Landscape - Limit landscape irrigation to specific days	For details see Appendix I	Yes
II	CII - Restaurants may only serve water upon request		
III	Other	Stage II restrictions remain in effect	Yes
III	Landscape - Limit landscape irrigation to specific times	Further restrictions	Yes
III	Landscape - Limit landscape irrigation to specific days	Further restrictions	Yes
III	Landscape - Prohibit certain types of landscape irrigation	Irrigation of landscapes during and within 48-hours of precipitation is prohibited	Yes
III	Landscape - Prohibit certain types of landscape irrigation	Irrigation of ornamental turf on public street medians is prohibited	Yes
III	Landscape - Prohibit certain types of landscape irrigation	Landscapes at new construction must follow California Building Standards Commission regulations and requirements	Yes
III	CII - Lodging establishment must offer opt out of linen service	Notice must be prominently displayed	Yes

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
IV	Other	Stage III restrictions remain in effect	Yes
IV	Landscape - Limit landscape irrigation to specific days	Further restrictions	Yes
IV	Landscape - Limit landscape irrigation to specific times	Further restrictions	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Limit golf course irrigation with District water to putting greens and tees	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Irrigation of lawns is prohibited	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Prohibit use of sprinklers for landscape irrigation (hand watering only)	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Irrigation of roadway medians, except to preserve trees, is prohibited	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Irrigation of landscapes must comply with the water budget established by the District, if applicable.	Yes
IV	Other	Prohibit vehicle and boat washing except at commercial car washing facilities	Yes
IV	Other water feature or swimming pool restriction	Prohibit use of District water to fill or top off pool, spa, hot tub, or wading pool	Yes
V	Other	Stage IV restrictions remain in effect	Yes
V	Landscape - Prohibit all landscape irrigation	Except with grey water or permitted recycled water, or where District determines it is necessary to protect public health and safety	Yes
V	Other - Require automatic shut of hoses		Yes
V	Other	Prohibit use of District water for outdoor washing, including commercial car washing, window washing, and paint preparation, except where necessary to alleviate immediate safety or sanitary hazards.	Yes
V	Water Features - Restrict water use for decorative water features, such as fountains	Prohibited except where necessary to support aquatic life, or on residential property	Yes
V	Other	Prohibit vehicle and boat washing	Yes

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
V	Other	Prohibit District water for public outdoor showers	Yes
V	Other	Prohibit District water for recreational purposes	Yes

10.3 Penalties for Excessive Use

GWD enforcement always begins with education regarding the restrictions and information about tools and resources available to assist customers in conserving water and complying with rules; however, GWD may use penalty fees as an additional enforcement tool. GWD Code Chapter 6.21.050 describes the enforcement process for the WSCP and authorizes the fines and penalties described therein for violations of the WSCP during a declared water shortage emergency. Administrative penalties (fees) may apply in situations involving a violation of water use restrictions, and increase in severity based on the number of previous warnings and/or violations. In addition to fees, the GWD may install flow restrictors that will provide the minimum water flow needed for health and safety purposes. In these extreme cases of repeated violations, the customer will be charged a fee to cover the cost of installation of the flow restrictor. The flow restrictor will remain in place for a period of time to be determined by the general manager, and the customer is responsible for paying the cost of removal of the device. The GWD will not use flow restrictors where fire suppression sprinklers are on the same line as the water provided for domestic purposes.

Table 10-5: Penalties for Excessive Use

Stage	First Violation	Second Violation	Third Violation	Fourth Violation	Subsequent Violations
I	Written warning	Written warning	Written warning	Written warning	Written warning
II	Written warning	Notice of Violation	Fine of \$100	Fine of \$250	Fine of \$500, potential flow restrictor installation
III	Written warning	Notice of Violation	Fine of \$100	Fine of \$250	Fine of \$500, potential flow restrictor installation
IV	Written warning	Notice of Violation	Fine of \$100	Fine of \$300	Fine of \$500, potential flow restrictor installation
V	Written warning	Notice of Violation	Fine of \$500	Fine of \$750	Fine of \$1,000, potential flow restrictor installation

10.4 Financial Impacts of Actions during Shortages

Prior to July 1, 2015, GWD’s rate structure did not provide for surcharges or other mechanisms to address drought-related costs or lower water commodity sales during a drought. To mitigate the potential financial effects of the current drought, GWD prepared a Cost of Service Study and proposed a new rate structure that went into effect July 1, 2015.

A standard methodology was used to develop GWD’s rates, following these steps:

- Developed a financial plan to determine GWD revenue requirements for the next five years.
- Performed a cost of service analysis utilizing the Base-Extra Capacity methodology.
- Developed commodity rates and fixed monthly service charges (known as meter charges) based on normal customer water use demand.
- Developed surcharges to be in place at various levels of water shortage emergency.

Because of the analysis, GWD’s current rate structure provides for financial stability in normal conditions and at each stage of water shortage emergency. The lead-time required to implement new rates is typically about one year to ensure compliance with state legal requirements regarding public water utility rates. Should any unusual circumstances negatively affect GWD finances, GWD must rely on reserves until updated rates can be implemented.

The Cost of Service Study estimates that in a normal year, 73 percent of revenue will come from commodity rates. This source of revenue is subject to fluctuation based on actual customer water use. The monthly service fee, known as the meter charge, provides the remaining 27 percent of GWD revenues. This is within the industry best practice recommendation that no more than 30 percent of costs be recovered through a fixed charge to ensure pricing structures provide a conservation incentive. The meter charge recovers a portion of the fixed costs of the water system such as customer service, meter maintenance, and peaking (or capacity) costs.

In times of water shortage, GWD will not have sufficient water sales to meet standard operating costs plus additional drought-related expenses. The District developed a drought surcharge that is billed on an HCF basis to provide adequate revenue at various drought stages. The drought surcharge begins at a Stage II water shortage and increases with each subsequent stage. Surcharge amounts were calculated to recover GWD’s cost of providing service at each drought stage based on projected costs and the level of water sales at each stage. Table 10-6 presents the anticipated reduction in sales and drought surcharge for each stage of a declared water shortage.

Table 10-6: Drought Surcharge

Shortage Stage	Reduction in Sales	Drought Surcharge (per HCF)
I	15%	None
II	25%	\$1.57
III	35%	\$2.60
IV	45%	\$3.92
V	>50%	\$5.73

10.5 Mechanisms to Determine Reduction in Water Use

Under normal water supply conditions, potable water production figures are recorded daily. GWD provides monthly water production totals in the monthly report submitted to the State Department of Health Services. A monthly water production report is also provided to the GWD Water Management and Long Range Planning (WMLRP) Committee, which is composed of two GWD Board members. During a drought or water shortage emergency, production figures are more closely monitored to ensure that reduction goals are being met and potential leaks are addressed in a timely manner. A monthly water supply and demand update report (in addition to the water production report) is presented to the WMLRP committee monthly, and the full Board of Directors quarterly, to ensure GWD decision-makers remain informed and prepared to take appropriate actions where necessary.

GWD uses total production to determine system-wide reductions in water use and whether conservation targets associated with the relevant water shortage stage are achieved. Customer consumption data recorded by water meters is compiled and analyzed on a monthly basis to track the change in use among various customer classes. This level of analysis allows GWD to identify where additional savings can be achieved, and develop targeted programs and outreach strategies to further reduce demand. If demand reductions consistently fall short of the target and water shortage thresholds are triggered, the GWD Board of Directors may declare increasingly severe water shortage stages and associated demand management programs to accomplish the necessary reductions.

10.6 Minimum Water Supply Next Three Years

GWD has four sources of water: Lake Cachuma, SWP, groundwater, and recycled water. GWD is currently experiencing an extended drought, which has severely limited the availability of local surface water supplies. Table 10-7 reflects the anticipated minimum supply available for the next three years based on GWD’s supply and demand projection model.

Table 10-7: DWR Table 8-4: Anticipated Minimum Supply Next Three Years (AFY)

	2016	2017	2018
Available Water Supply	12,252	15,417	11,548

Note: Values are from GWD’s internal supply and demand projection model.

Chapter 11 References

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Appendix A - UWMP Checklist and Tables

UWMP Checklist

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

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

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

Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location <i>(Optional Column for Agency Use)</i>
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	Section 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	Section 1.2.1
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 1.2.2
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Section 2.1
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Section 2.2
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	Section 3.1
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	Section 3.3.1
10631(a)	Indicate the current population of the service area.	System Description and	Sections 3.4 and 5.4	Section 3.1

		Baselines and Targets		
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Section 3.2, 3.3
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 3.2.4
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 3.3.7
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 4.2
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 4.1
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	Sections 4.2.2, 4.2.3
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	Section 4.3
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	Section 4.3.1
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 4.3
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 5.8
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Section 5.5
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific	System Supplies	Section 6.2.2	Section 5.5

	authorization for groundwater management. Include a copy of the plan or authorization.			
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	Section 5.5
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 5.5, Appendix D
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	Section 5.4.1
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 5.5
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 5.5
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 5.7
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	Section 5.9
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Section 5.10
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 1.2.1
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	n/a
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	Section 1.2.1
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	Section 6.1

	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	Section 6.1
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 6.2
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 6.2
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 6.2
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	Section 6.2.3
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 6.2.3
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	Section 8.1
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 8.1
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	Section 8.2
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 8.2
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 7.3
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 8.2

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 10.2
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 10.6
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 10.2 and Tables 10-2, 10-3, and 10-4
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	Section 10.2.3
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	Sections 10.2.1, 10.2.3
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	Section 10.3
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 10.4
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	Appendix D
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 10.5
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	Chapter 9
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	Chapter 9 and Appendix H

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 1.2.2
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	Section 1.2.1
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	Section 1.2
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	<i>Will be provided after UWMP submission</i>
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 B
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
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	Appendix B
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	<i>Will be provided after UWMP submission</i>
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	<i>Will be provided after UWMP submission</i>
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	Section 1.2
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	Section 1.2

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
4210004	Goleta Water District	16,195	7,550
TOTAL		16,195	7,550
<p>NOTES: The table, per State guidelines, provides information on municipal connections only (i.e., residential, commercial, institutional) and excludes agricultural customers and usage.</p>			

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

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

Table 2-4 Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name <i>(Add additional rows as needed)</i>
Central Coast Water Authority
Cachuma Operations and Maintenance Board
NOTES:

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040(<i>opt</i>)
	82,569	85,103	87,716	90,411	93,191	
NOTES:						

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type <i>(Add additional rows as needed)</i>	2015 Actual		
<i>Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description <i>(as needed)</i>	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Single Family		Drinking Water	3,251
Multi-Family		Drinking Water	1,636
Commercial		Drinking Water	1,790
Institutional/Governmental		Drinking Water	543
Landscape		Drinking Water	331
Agricultural irrigation		Drinking Water	1,716
Agricultural irrigation	Goleta West Conduit	Raw Water	1,444
Losses	DWR Water Audit Method	Drinking Water	577
Other	Remaining Unaccounted-for Water	Drinking Water	
TOTAL			11,288
NOTES:			

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

Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>				
<u>Drop down list</u> <i>May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>		2020	2025	2030	2035	2040-opt
Single Family		4,520	4,659	4,802	4,949	
Multi-Family		1,883	1,941	2,001	2,062	
Commercial		2,430	2,586	2,716	2,786	
Industrial		0	0	0	0	
Institutional/Governmental		812	1,010	1,010	1,010	
Landscape		457	457	457	457	
Agricultural irrigation		2,993	2,993	2,993	2,993	
Groundwater recharge		0	0	0	0	
Sales/Transfers/Exchanges to other agencies		0	0	0	0	
Losses		789	829	852	869	
Other		0	0	0	0	
TOTAL		13,884	14,475	14,831	15,126	0
NOTES:						

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 <i>(opt)</i>
Potable and Raw Water <i>From</i> <i>Tables 4-1 and 4-2</i>	11,288	13,884	14,475	14,831	15,126	0
Recycled Water Demand* <i>From</i> <i>Table 6-4</i>	1,133	1,185	1,225	1,265	1,265	0
TOTAL WATER DEMAND	12,421	15,069	15,700	16,096	16,391	0
<i>*Recycled water demand fields will be blank until Table 6-4 is complete.</i>						
NOTES:						

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	577
<i>* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.</i>	
NOTES:	

Table 4-5 Retail Only: Inclusion in Water Use Projections	
<p style="text-align: center;">Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i></p>	No
<p>If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.</p>	
<p style="text-align: center;">Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i></p>	Yes
<p>NOTES:</p>	

Table 5-1 Baselines and Targets Summary					
<i>Retail Agency or Regional Alliance Only</i>					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	1995	2004	127	119	111
5 Year	2004	2008	117		
*All values are in Gallons per Capita per Day (GPCD)					
NOTES:					

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

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD <i>From Methodology 8</i>					2015 GPCD* <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment *	Weather Normalization*	TOTAL Adjustments *	Adjusted 2015 GPCD*		
88	119				0	88	88	Yes

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

NOTES:

Table 6-1 Retail: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
<i>Add additional rows as needed</i>						
Alluvial Basin	Goleta Groundwater Basin	4	305	2714	3463	5263
TOTAL		4	305	2,714	3,463	5,263
NOTES:						

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
<input type="checkbox"/> There is no wastewater collection system. The supplier will not complete the table below.						
Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>						
Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i>						
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
<i>Add additional rows as needed</i>						
GSD	Metered	3,159	GSD	GSD WWTP	Yes	No
GWSD	Metered	1,593	GSD	GSD WWTP	Yes	No
Total Wastewater Collected from Service Area in 2015:		4,752				
NOTES:						

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
<input type="checkbox"/> No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level <i>Drop down list</i>	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
<i>Add additional rows as needed</i>										
GSD WWTP	Pacific Ocean	5800 ft offshore and 92 ft below Mean Lower Low Water level		Ocean outfall	No	Secondary, Disinfected - 2.2	4,752	3,619	1,133	0
Total							4,752	3,619	1,133	0
NOTES:										

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area									
<input type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.									
Name of Agency Producing (Treating) the Recycled Water:			Goleta Sanitary District						
Name of Agency Operating the Recycled Water Distribution System:			Goleta Water District						
Supplemental Water Added in 2015			None						
Source of 2015 Supplemental Water			N/A						
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035	2040 (opt)	
Agricultural irrigation									
Landscape irrigation (excludes golf courses)	Maintaining Landscapes	Tertiary	494	540	580	620	620		
Golf course irrigation	Watering Greens	Tertiary	634	630	630	630	630		
Commercial use	Toilet Flushing/ Cooling Towers	Tertiary	5	15	15	15	15		
Industrial use									
Geothermal and other energy production									
Seawater intrusion barrier									
Recreational impoundment									
Wetlands or wildlife habitat									
Groundwater recharge (IPR)*									
Surface water augmentation (IPR)*									
Direct potable reuse									
Other (Provide General Description)									
			Total:	1,133	1,185	1,225	1,265	1,265	0
<i>*IPR - Indirect Potable Reuse</i>									
NOTES:									

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual		
□	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.	
Use Type	2010 Projection for 2015	2015 Actual Use
Agricultural irrigation		
Landscape irrigation (excludes golf courses)	1,065	494
Golf course irrigation ¹		634
Commercial use	5	5
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Surface water augmentation (IPR)		
Direct potable reuse		
Other	<i>Type of Use</i>	
Total	1,070	1,133
NOTES: 1. Golf course irrigation and landscape irrigation was reported as a combined value in the 2010 UWMP.		

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
<i>Add additional rows as needed</i>			
Mandatory Use Ordinance	To require connection and use for certain customers	In place	N/A
Rate Structures	Discounted rates to encourage use	In place	N/A
Customer Conversions	Construct infrastructure to serve customers adjacent to existing system	In place	130
Total			130
NOTES: Based on known recycled water projects through 2030.			

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

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
<i>Drop down list</i> <i>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Actual Volume	Water Quality <i>Drop Down List</i>	Total Right or Safe Yield <i>(optional)</i>
<i>Add additional rows as needed</i>				
Groundwater	Goleta Groundwater Basin ¹	5,263	Drinking Water	2,350
Recycled Water	Goleta Wastewater Treatment Plant ²	1,133	Recycled Water	4,752
Surface water	Cachuma Project Water	4,432	Drinking Water	9,322
Purchased or Imported Water	State Water Project ³	1,592	Drinking Water	7,450
Total		12,420		23,874
<p>NOTES: 1. The Wright Judgment provides GWD with the right to defer production of its annual groundwater entitlement, and considers that water as GWD' stored water for later use during dry years, droughts, and emergencies. In 2015, GWD relied upon deferred water to exceed its annual right to extract 2,350 AFY.</p> <p>2. This value is the total secondary effluent from the plant in 2015. The current tertiary treatment capacity of 3.0 MGD limits potential recycled water production to approximately 3,300 AFY.</p> <p>3. The SAFE Ordinance requires that for planning purposes, the District project 3,800 AF of available SWP supplies. The District's maximum Table A entitlement and drought buffer is 7,450 AFY.</p>				

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply <i>Report To the Extent Practicable</i>									
		2020		2025		2030		2035		2040 (opt)	
<i>Drop down list May use each category multiple times. These are the only water supply categories</i>		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
<i>Add additional rows as needed</i>											
Groundwater	Goleta Groundwater Basin	2,350		2,350		2,350		2,350			
Recycled Water	Goleta Wastewater Treatment Plant	1,185		1,225		1,265		1,265			
Surface water	Cachuma Project Water	9,322		9,322		9,322		9,322			
Purchased or Imported Water	State Water Project	3,800		3,800		3,800		3,800			
Total		16,657	0	16,697	0	16,737	0	16,737	0	0	0
NOTES:											

Table 7-1 Retail: Basis of Water Year Data			
Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year		16,737	100%
Single-Dry Year	2012	14,657	
Multiple-Dry Years 1st Year	2014	14,657	
Multiple-Dry Years 2nd Year	2015	14,657	
Multiple-Dry Years 3rd Year	2016	12,685	
Multiple-Dry Years 4th Year <i>Optional</i>			
Multiple-Dry Years 5th Year <i>Optional</i>			
Multiple-Dry Years 6th Year <i>Optional</i>			
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES: The Average Year value is the reasonable available volume of supply available in average years (per Table 6-9) while the actual use of the available supplies in an average year will be lower than this value (per Table 7-2). Single-dry year and multiple dry year values are from the 2017 Water Supply Management Plan (WSMP) Update. The supplies are based on optimized water supply strategy that meets dry year demands. The "Base Year" for each dry year are from the WSMP model and are similar but not identical to the actual data from those years because Cachuma and State Water supplies for those years come from the RiverWare and State Water Project capability modeling results.			

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 <i>(Opt)</i>
Supply totals <i>(autofill from Table 6-9)</i>	16,657	16,697	16,737	16,737	0
Demand totals <i>(autofill from Table 4-3)</i>	15,069	15,700	16,096	16,391	0
Difference	1,588	997	641	346	0
NOTES: This table is based on supply and demand projections from Table 6-9 and Table 4-3, respectively. An <u>Alternative</u> Table 7-2 is included on the next page that reflects projected normal year supplies from the 2017 Water Supply Management Plan Update.					

Table 7-2 <u>ALT</u> Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 <i>(Opt)</i>
Supply totals	15,171	15,755	16,137	16,391	0
Demand totals	15,069	15,700	16,096	16,391	0
Difference	102	55	41	0	0
NOTES: Values in this table are from the 2017 Water Supply Management Plan Update. The supplies are based on optimized water supply strategy that reserves some supplies for dry years. As a results, supply totals projected for use in a normal year is lower than the average supply available (shown in Table 7-2 per Table 6-9).					

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	16,033	16,731	17,169	17,495	
Demand totals	16,033	16,731	17,169	17,495	
Difference	0	0	0	0	0
NOTES: Values are from the 2017 Water Supply Management Plan Update. The supplies are based on optimized water supply strategy that meets dry year demands.					

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	16,033	16,731	17,169	17,495	
	Demand totals	16,033	16,731	17,169	17,495	
	Difference	0	0	0	0	0
Second year	Supply totals	16,033	16,731	17,169	17,495	
	Demand totals	16,033	16,731	17,169	17,495	
	Difference	0	0	0	0	0
Third year	Supply totals	14,155	14,901	15,369	15,717	
	Demand totals	16,033	16,731	17,169	17,495	
	Difference	(1,878)	(1,830)	(1,800)	(1,778)	0
Fourth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

NOTES: Values are from the 2017 Water Supply Management Plan Update. The supplies are based on optimized water supply strategy that meets dry year demands. Shortfall in the third year will be addressed through demand reductions, as was accomplished by District customers during the recent (ongoing) drought.

Table 8-1 Retail		
Stage	Complete Both	
	Percent Supply Reduction ¹ <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
<i>Add additional rows as needed</i>		
I	10-15%	<p>If any of the following occur:</p> <ul style="list-style-type: none"> -District water supply is 85 to 90% of normal (10-15% supply deficiency) for the next twelve months. -District water supply is insufficient to provide 80% of normal deliveries for the next twenty four months. -Contamination of 10% of water supply (pollutant exceeds primary drinking water standards)
II	16 -25%	<p>If any of the following occur:</p> <ul style="list-style-type: none"> -District water supply is 75 to 85% of normal (16-25% supply deficiency) for the next twelve months. -District water supply is insufficient to provide 75% of normal deliveries for the next twenty four months. -Contamination of 20% of water supply (pollutant exceeds primary drinking water standards)
III	26-35%	<p>If any of the following occur:</p> <ul style="list-style-type: none"> -District water supply is 65 to 75% of normal (26-35% supply deficiency) for the next twelve months. -District water supply is insufficient to provide 65% of normal deliveries for the next twenty four months. -Contamination of 30% of water supply (pollutant exceeds primary drinking water standards)
IV	36-45%	<p>If any of the following occur:</p> <ul style="list-style-type: none"> -District water supply is 55 to 65% of normal (36-45% supply deficiency) for the next twelve months. -District water supply is insufficient to provide 55% of normal deliveries for the next twenty four months. -Contamination of 40% of water supply (pollutant exceeds primary drinking water standards)
V	46% and higher	<p>If any of the following occur:</p> <ul style="list-style-type: none"> -District water supply is less than 55% of normal (46% or higher supply deficiency) for the next twelve months. -District water supply is insufficient to provide 50% of normal deliveries for the next twenty four months. -Contamination of 50% or more of water supply (pollutant exceeds primary drinking water standards) -Unanticipated loss of water distribution or supply facilities due to disaster or man-made emergencies
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES:		

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
<i>Add additional rows as needed</i>			
I	Other	Water waste prohibition	Yes
II	Other - Prohibit use of potable water for washing hard surfaces	Unless necessary to protect public health and safety, or no more than every two months with additional restrictions	Yes
II	Landscape - Restrict or prohibit runoff from landscape irrigation		Yes
II	Landscape - Prohibit certain types of landscape irrigation	Hose used for manual irrigation must have shutoff nozzle	Yes
II	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Within 48 hours of notification	Yes
II	Water Features - Restrict water use for decorative water features, such as fountains	Prohibited except where necessary to support aquatic life, or on residential property	Yes
II	Landscape - Limit landscape irrigation to specific times	For details see Appendix D	Yes
II	Landscape - Limit landscape irrigation to specific days	For details see Appendix D	Yes
II	CII - Restaurants may only serve water upon request		
III	Other	Stage II restrictions remain in effect	Yes
III	Landscape - Limit landscape irrigation to specific times	Further restrictions	Yes
III	Landscape - Limit landscape irrigation to specific days	Further restrictions	Yes
III	Landscape - Prohibit certain types of landscape irrigation	Irrigation of landscapes during and within 48-hours of precipitation is prohibited	Yes
III	Landscape - Prohibit certain types of landscape irrigation	Irrigation of ornamental turf on public street medians is prohibited	Yes

Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
III	Landscape - Prohibit certain types of landscape irrigation	Landscapes at new construction must follow California Building Standards Commission regulations and requirements	Yes
III	CII - Lodging establishment must offer opt out of linen service	Notice must be prominently displayed	Yes
IV	Other	Stage III restrictions remain in effect	Yes
IV	Landscape - Limit landscape irrigation to specific days	Further restrictions	Yes
IV	Landscape - Limit landscape irrigation to specific times	Further restrictions	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Limit golf course irrigation with District water to putting greens and tees	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Irrigation of lawns is prohibited	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Prohibit use of sprinklers for landscape irrigation (hand watering only)	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Irrigation of roadway medians, except to preserve trees, is prohibited	Yes
IV	Landscape - Prohibit certain types of landscape irrigation	Irrigation of landscapes must comply with the water budget established by the District, if applicable.	Yes
IV	Other	Prohibit vehicle and boat washing except at commercial car washing facilities	Yes
IV	Other water feature or swimming pool restriction	Prohibit use of District water to fill or top off pool, spa, hot tub, or wading pool	Yes

Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
V	Other	Stage IV restrictions remain in effect	Yes
V	Landscape - Prohibit all landscape irrigation	Except with grey water or permitted recycled water, or where District determines it is necessary to protect public health and safety	Yes
V	Other - Require automatic shut of hoses		Yes
V	Other	Prohibit use of District water for outdoor washing, including commercial car washing, window washing, and paint preparation, except where necessary to alleviate immediate safety or sanitary hazards.	Yes
V	Water Features - Restrict water use for decorative water features, such as fountains	Prohibited except where necessary to support aquatic life, or on residential property	Yes
V	Other	Prohibit vehicle and boat washing	Yes
V	Other	Prohibit District water for public outdoor showers	Yes
V	Other	Prohibit District water for recreational purposes	Yes
NOTES:			

Table 8-3 Retail Only:		
Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>		
I	Expand Public Information Campaign	Includes development of a Water Shortage Declaration media kit and conservation related billing statement messages
I	Offer Water Use Surveys	Identifies largest water users in each sector and contacts for complementary water audits
I	Other	Provides water conservation hotline to allow reporting of water waste
I	Provide Rebates for Landscape Irrigation Efficiency	Accelerates audit and incentive programs for irrigation
I	Other	Accelerates audit and incentive programs for agriculture and large customers
I	Other	Identifies and notifies customers of possible leaks
I	Other	Encourages use of drip irrigation and drought tolerant plants
I	Decrease Line Flushing	Reduce water usage for main flushing, street flushing, and hydrant flushing
I	Reduce System Water Loss	Intensify maintenance efforts to identify and correct water leaks in the distribution system
II	Expand Public Information Campaign	Includes targeted outreach to customers with large landscapes and customer education on how to perform regular household meter reading and leak detection
II	Other	Encourage the use of pool covers when not in active use
II	Other	Promote meter reading and leak detection by all customers
II	Other	Encourage posting of notice of shortage conditions and daily linen washing only if requested at hotels, motels, and other lodgings
II	Other	Encourage shorter showers in gyms, athletic clubs, and public pools
III	Expand Public Information Campaign	Includes publishing weekly demand charts in local newspaper and considering hiring a third party to assist with the launch of a major publicity campaign
III	Other	Encourage all commercial customers to prominently post water shortage signage with specified language at specified locations
III	Increase Water Waste Patrols	Increased field staff
III	Other	Increased penalty fees

Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
IV	Expand Public Information Campaign	Including implement major publicity campaign initiated during Stage III and provide regular media briefings and updates on supply situation
IV	Increase Water Waste Patrols	Implement 24/7 enforcement of demand reduction programs, install flow restrictor, and/or facilitate shut offs
NOTES:		

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	12,252	15,417	11,548
NOTES: Values are from GWD's internal supply and demand projection model.			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
City of Goleta	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Santa Barbara	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
Santa Barbara County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B - Submittals and Notifications

**GOLETA WATER DISTRICT
NOTICE OF PUBLIC HEARING
2015 URBAN WATER MANAGEMENT PLAN**

NOTICE IS HEREBY GIVEN that at 5:30 pm on June 13, 2017 at 4699 Hollister Ave., Goleta, CA 93110, the Board of Directors of the Goleta Water District (GWD) will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider community comments and input on the Goleta Water District 2015 Urban Water Management Plan (UWMP).

The Draft UWMP is currently available for public review at the GWD's Administrative Office and online at www.goletawater.com. The draft UWMP has been developed in accordance with the California Urban Water Management Planning Act, Water Code sections 10610 through 10656, as well as the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and is an important part of the 2015 UWMP update process.

Written comments may be submitted by 5 pm Tuesday, June 13, 2017 to the attention of Ryan Drake, Water Supply & Conservation Manager at the address above or to rdrake@goletawater.com. Verbal comments can also be made at the hearing noted above. Upon conclusion of the hearing, the Board of Directors may revise, change, modify, and/or adopt the 2015 Urban Water Management Plan.

In compliance with the Americans with Disabilities Act, if you are disabled and need accommodation to participate in the hearing, please contact Beth Horn, at 805-879-4621 for assistance at least 3 working days before the hearing.

**SANTA BARBARA NEWS PRESS
Proof of Publication
(2015.5C.C.P)**

**Superior Court of
the State of California
In and For The County of Santa Barbara**

In the Matter of:

**Legal 52277
Ad# 3922305**

Notice of Public Hearing

The undersigned, being the principal clerk of the printer of the Santa Barbara News Press, a newspaper of general circulation, printed and published daily in the City of Santa Barbara, County of Santa Barbara, California and which newspaper has been adjudged a newspaper of general circulation by the Superior Court in the County of Santa Barbara, State of California, Adjudication Number 47171; and that affiant is the principal clerk of said Santa Barbara News Press. That the printed notice hereto annexed was published in the SANTA BARBARA NEWS-PRESS, in the issues of the following named dates

May 29; June 5, 2017

all in the year 2017, I hereby certify (or declare) under penalty of perjury that the foregoing is true and correct.

Executed on this 5th of June, 2017 at Santa Barbara, CA

P. Matsumaru

P. Matsumaru

**GOLETA WATER DISTRICT
NOTICE OF PUBLIC HEARING
2015 URBAN WATER MANAGEMENT PLAN**

NOTICE IS HEREBY GIVEN that at 5:30 pm on June 13, 2017 at 4699 Hollister Ave., Goleta, CA 93110, the Board of Directors of the Goleta Water District (GWD) will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider community comments and input on the Goleta Water District 2015 Urban Water Management Plan (UWMP).

The Draft UWMP is currently available for public review at the GWD's Administrative Office at the address above, and online at www.goletawater.com. The draft UWMP has been developed in accordance with the California Urban Water Management Planning Act, Water Code sections 10610 through 10656, as well as the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and is an important part of the 2015 UWMP update process.

Written comments may be submitted by 5 pm Tuesday, June 13, 2017 to the attention of Ryan Drake, Water Supply & Conservation Manager at the address above or to rdrake@goletawater.com. Verbal comments can also be made at the hearing noted above. Upon conclusion of the hearing, the Board of Directors may revise, change, modify, and/or adopt the 2015 Urban Water Management Plan.

In compliance with the Americans with Disabilities Act, if you are disabled and need accommodation to participate in the hearing, please contact Beth Horn, at 805-879-4621 for assistance at least 3 working days before the hearing.

PUBLISH ON May 29 and June 5, 2017

May 29; June 5/2017--52277



4699 HOLLISTER AVENUE
GOLETA, CALIFORNIA 93110-1999
TELEPHONE 805/964-6761
FAX 805/964-7002

March 9, 2017

Lisa Prasse
Planning & Environmental Review Interim Director
City of Goleta
130 Cremona Drive, Suite B
Goleta, CA 93117

SENT VIA U.S. MAIL and email
lprasse@cityofgoleta.org

Dear Ms. Prasse,

Every five years, the Goleta Water District (District) is required to develop an Urban Water Management Plan (UWMP). State law provides a framework for how water suppliers such as the District are to carry out their long-term resource planning responsibilities through the UWMP.¹ Specifically, suppliers are to assess demands and supplies, consider and analyze actions to be taken during droughts, and commit to implementing demand management strategies to encourage efficient water use.

Since the City of Goleta is within the District's service area, this letter is to provide notification that an updated Urban Water Management Plan is under development. After five consecutive years of drought, the District will incorporate observed recent conditions in its updated projections on water supply and demand now and into the future.

Pursuant to California Water Code Section 10621(b), this notification is being provided at least 60 days prior to the public District Board of Directors meeting at which the updated UWMP will be considered and adopted.

Over the coming weeks, the District will provide additional information regarding the update of the UWMP, including an upcoming public hearing. If you have any questions, please contact me at rdrake@goletawater.com or 805-879-4627.

Sincerely,

Ryan Drake
Water Supply and Conservation Manager

¹ California Water Code Section 10610 et seq.



4699 HOLLISTER AVENUE
GOLETA, CALIFORNIA 93110-1999
TELEPHONE 805/964-6761
FAX 805/964-7002

March 9, 2017

Paul Casey
City Administrator
City of Santa Barbara
735 Anacapa Street
Santa Barbara, CA 93101

SENT VIA U.S. MAIL and email
pcasey@santabarbara.gov

Dear Mr. Casey,

Every five years, the Goleta Water District (District) is required to develop an Urban Water Management Plan (UWMP). State law provides a framework for how water suppliers such as the District are to carry out their long-term resource planning responsibilities through the UWMP.¹ Specifically, suppliers are to assess demands and supplies, consider and analyze actions to be taken during droughts, and commit to implementing demand management strategies to encourage efficient water use.

Since the City of Santa Barbara is within the District's service area, this letter is to provide notification that an updated Urban Water Management Plan is under development. After five consecutive years of drought, the District will incorporate observed recent conditions in its updated projections on water supply and demand now and into the future.

Pursuant to California Water Code Section 10621(b), this notification is being provided at least 60 days prior to the public District Board of Directors meeting at which the updated UWMP will be considered and adopted.

Over the coming weeks, the District will provide additional information regarding the update of the UWMP, including an upcoming public hearing. If you have any questions, please contact me at rdrake@goletawater.com or 805-879-4627.

Sincerely,

Ryan Drake
Water Supply and Conservation Manager

¹ California Water Code Section 10610 et seq.



4699 HOLLISTER AVENUE
GOLETA, CALIFORNIA 93110-1999
TELEPHONE 805/964-6761
FAX 805/964-7002

March 9, 2017

Dr. Glenn Russell
Planning & Development Director
Santa Barbara County
123 E. Anapamu Street
Santa Barbara, CA 93101

SENT VIA U.S. MAIL and email
grussell@co.santa-barbara.ca.us

Dear Dr. Russell,

Every five years, the Goleta Water District (District) is required to develop an Urban Water Management Plan (UWMP). State law provides a framework for how water suppliers such as the District are to carry out their long-term resource planning responsibilities through the UWMP.¹ Specifically, suppliers are to assess demands and supplies, consider and analyze actions to be taken during droughts, and commit to implementing demand management strategies to encourage efficient water use.

Since Santa Barbara County is within the District's service area, this letter is to provide notification that an updated Urban Water Management Plan is under development. After five consecutive years of drought, the District will incorporate observed recent conditions in its updated projections on water supply and demand now and into the future.

Pursuant to California Water Code Section 10621(b), this notification is being provided at least 60 days prior to the public District Board of Directors meeting at which the updated UWMP will be considered and adopted.

Over the coming weeks, the District will provide additional information regarding the update of the UWMP, including an upcoming public hearing. If you have any questions, please contact me at rdrake@goletawater.com or 805-879-4627.

Sincerely,

Ryan Drake
Water Supply and Conservation Manager

¹ California Water Code Section 10610 et seq.

RESOLUTION NO. 2017-23

Introduced by the Water Management and Long Range Planning Committee

RESOLUTION NO. 2017-23

**A RESOLUTION OF THE GOLETA WATER DISTRICT BOARD OF
DIRECTORS ADOPTING THE 2015 URBAN WATER
MANAGEMENT PLAN**

WHEREAS, the California Urban Water Management Planning Act, Water Code Section 10610 et seq. (the Act), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (UWMP); and

WHEREAS, the Goleta Water District (District) is a California County Water District organized under Division 12 of the California Water Code, and is an urban water supplier for the purposes of the Act; and

WHEREAS, the District has prepared those portions of the plan applicable to Goleta Water District in accordance with the Act and has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its 2015 UWMP in accordance with applicable legal requirements; and

WHEREAS, the District retained the professional services of RMC Consultants, a Woodard and Curran Company, to develop the 2015 UWMP in cooperation with other governmental agencies, and consistent with the California Department of Water Resources 2015 Urban Water Management Plans Guidebook for Urban Water Suppliers (March 2016); and

WHEREAS, in accordance with applicable law, including Water Code Sections 10608.26 and 10642, and Government Code Section 6066, a Notice of a Public Hearing regarding District adoption of the 2015 UWMP was published within the jurisdiction of the Goleta Water District on May 29, 2017 and June 5, 2017; and

WHEREAS, in accordance with applicable law, a public hearing was held on Tuesday June 13, 2017 at 5:30 pm in the boardroom of the offices of the District, at 4699 Hollister Ave., Goleta, CA 93110, in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the 2015 UWMP; and

WHEREAS; pursuant to Water Code Section 10652 and California Code of Regulations (CCR), Title 14, Section 15282(v), the preparation and adoption of the 2015 UWMP is statutorily exempt from the California Environmental Quality Act (CEQA) (Division 13, commencing with Section 21000, of the Public Resources Code).

NOW THEREFORE BE IT FOUND, DETERMINED AND RESOLVED by the Board of Directors of the Goleta Water District as follows:

1. The Goleta Water District does hereby adopt the 2015 UWMP as submitted and modified.
2. The General Manager is hereby authorized and directed to include a copy of this Resolution in Goleta Water District's 2015 UWMP.

3. The General Manager is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit copies of the 2015 UWMP to the California Department of Water Resources, the California State Library, and any city or county within which the Goleta Water District provides water supplies no later than thirty (30) days after this adoption date.
4. This resolution shall take effect immediately.

PASSED AND ADOPTED by the Board of Directors of the Goleta Water District this 13th day of June, 2017 by the following roll call vote:

AYE: Directors Cunningham, Hanson, Merrifield, Rosen, West

NAY: None

ABSENT: None

ABSTAIN: None

ATTEST:



JOHN D. MCINNES
DISTRICT SECRETARY



RICHARD MERRIFIELD, PRESIDENT
BOARD OF DIRECTORS

Appendix C - Public Outreach Materials

GWD Website Posting

Welcome to Goleta Water District

www.goletawater.com

Even With Winter Rains, the Community Remains in Drought

– Click here for more information –

New Rebates Available!

Rebates up to \$150

Rebates of \$80 per delivery

Free Mulch

2015 Urban Water Management Plan

DRAFT MAY/JUNE 2017

– click here for more information –

District News

Winter 2017 Newsletter
Click here for the Winter 2017 Newsletter.

2015 Draft Urban Water Management Plan
Click here for more information.

New Rebates Available!
Click here for information.
All District news

Featured Story

Even With Winter Rains, the Community Remains in Drought

The last five years of below average rainfall produced extreme drought conditions, and recent rains have not been enough to make up for that deficit.

Read more

All featured stories

Upcoming Events

Board Meetings

A special meeting of the District Board of Directors will be on Wednesday, June 7, 2017 at 5:30 p.m. The next regular meeting of the District Board of Directors will be on Tuesday, June 13, 2017 at 5:30 p.m. Board meetings are held at Goleta Water District, 4699 Hollister Avenue, Goleta.

Click here for details.

2015 Draft Urban Water Management Plan

www.goletawater.com/newsletters-and-press/featured-story/2015-draft-urban-water-management-plan/

Goleta Water District

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News & Media / Featured Story Archive

2015 Draft Urban Water Management Plan

The District's 2015 Draft Urban Water Management Plan (UWMP) is available for public review and comment. A public hearing is scheduled for June 13, 2017 to consider adoption of the Plan by the Board of Directors and public comments on the Draft Plan. For additional details, click here. The Draft UWMP can be accessed here.

Quick Links

- > 24/7 Emergency Info
- > Report a Leak
- > Drought Portals
- > Water Conservation
- > Pay Your Bill Online
- > Customer Service

2015 Urban Water Management Plan

DRAFT May/June 2017

BOARD OF DIRECTORS

Goleta Water District



DIRECTORS

Richard Merrifield, President

Meg West, Vice President

John Cunningham

Lauren Hanson

Bill Rosen

MEETING

AGENDA

Tuesday, June 13, 2017

5:30 p.m.

GOLETA WATER DISTRICT HEADQUARTERS

BOARD HEARING ROOM

4699 Hollister Ave, Goleta CA 93110

Persons may address the Board of Directors on any matter listed on the agenda by completing and delivering to the Board Secretary a speaker slip before the item is considered. Matters not listed on the agenda may be addressed during the public comment period. Further information on agenda items can be obtained from the Board Secretary at the District Headquarters.

Board Meeting Procedures

The Board of Directors is the legislative body for the Goleta Water District. Persons are encouraged to attend and testify before the Board on any matter appearing on the agenda. All times shown below are estimates for planning purposes; items may be heard earlier or later than estimated.

Correspondence to the Board regarding items appearing on the agenda should be directed to the Secretary of the Board, 4699 Hollister Ave., Goleta, CA 93110. For information regarding the meetings of the Board of Directors including specific meeting times contact the Assistant Secretary of the Board at (805) 879-4621.

The schedule of the Board of Directors, meeting agendas, supplemental Hearing materials and minutes of the Board meetings are available on the Internet at www.goletawater.com

Late Distribution

Any disclosable public records related to an open session item on a regular meeting agenda and distributed by the Secretary of the Board to all or a majority of the members of the Board of Directors less than 72 hours prior to that meeting are available for inspection in the Assistant Secretary of the Board's office, 4699 Hollister Ave, Goleta, CA.

Disability Access

The Board of Directors Hearing Room is located at 4699 Hollister Ave, Goleta and is wheelchair accessible. Accessible public parking is available in front of the building.

Should special assistance be required to participate in this meeting, please contact the Assistant Secretary to the Board at (805) 879-4621.

Translation Services

Upon request, the Board of Directors will make a reasonable effort to provide translation services. Please contact the Assistant Secretary to the Board at (805) 879-4621.

Closed Session

The Board of Directors may conduct a Closed Session on particular agendas as necessary. Closed Sessions are not open to the public. Matters discussed during Closed Session include existing and pending litigation, personnel matters and real property negotiations. Actions taken by the Board during Closed Session will be announced during open session (Gov. Code Sections 54947.1(a)&(b), Ralph M. Brown Act).

5:30 p.m. Convene to Regular Session**Roll Call****Public Comment Period**

Persons desiring to address the Board may complete and deliver to the Secretary the form which is available at the Hearing Room entrance prior to the commencement of the comment period. The public comment period is reserved for comment on the matter within the subject matter jurisdiction of the Board of Directors. Each person may address the Board for up to three minutes at the discretion of the Chair.

Closed Session Public Comment Period

Persons desiring to address the Board may complete and deliver to the Secretary the form, which is available at the Hearing Room entrance prior to the commencement of the Closed Session public comment period. The Closed Session public comment period is reserved for comment on the matters listed on the Closed Session agenda. Each person may address the Board at the discretion of the Chair.

Recess to Closed Session**Closed Session Agenda****CS-1) Conference with Labor Negotiators pursuant to Government Code Section 54957.6****District Designated Representatives:**

Douglas Freifeld, District Special Counsel
John McInnes, District General Manager
David Matson, District Assistant General Manager

Employee Organization:

Service Employee International Union 620

CS-2) CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION

Existing litigation pursuant to paragraph (1) of subdivision (d) of Government Code Section 54956.9. One case:

1. **Wright v. Goleta Water District (Santa Barbara Superior Court Case Number SM57969)**

Re-Convene to Regular Session

Departmental Agenda

1) APPROVAL OF SUCCESSOR MOU WITH SEIU LOCAL 620

ADMINISTRATION

Adopt a Resolution authorizing the President of the Board of Directors to execute a Successor Memorandum of Understanding with Service Employee International Union Local 620 for the term of July 1, 2017 through June 30 2027. (EST. TIME: 10 MIN.)

2) URBAN WATER MANAGEMENT PLAN

WATER SUPPLY & CONSERVATION

Adopt a Resolution approving the Goleta Water District 2015 Urban Water Management Plan. (EST. TIME: 30 MIN.)

Legislative History

05/24/17 WMLRP Committee	Considered and Recommended Board Approval
04/20/17 WMLRP Committee	Considered

3) GROUNDWATER SUSTAINABILITY AGENCY FORMATION

WATER SUPPLY & CONSERVATION

Adopt a Resolution electing not to form a Groundwater Sustainability Agency for the unadjudicated portions of the Goleta Basin. (EST. TIME: 20 MIN.)

Legislative History

05/24/17 WMLRP Committee	Considered and Recommended Board Approval
--------------------------	-------------------------------------------

4) WRIGHT ANNUAL REPORT

OFFICE OF GENERAL COUNSEL

Approve the District's 2017 Annual Wright Report and direct General Counsel to serve it in compliance with the Wright Judgement. (EST. TIME: 5 MIN.)

Legislative History

05/24/17 WMLRP Committee	Considered and Recommended Board Approval
--------------------------	-------------------------------------------

5) STAGE III WATER SHORTAGE EMERGENCY QUARTERLY UPDATEWATER SUPPLY & CONSERVATION

Receive an update on the Goleta Water District Stage III Water Shortage Emergency. (EST. TIME: 15 MIN.)

Legislative History

05/24/17 WMLRP Committee	Received Update
04/20/17 WMLRP Committee	Received Update
03/16/17 WMLRP Committee	Received Update
03/14/17 Board of Directors	Received Update
02/16/17 WMLRP Committee	Received Update
01/19/17 WMLRP Committee	Received Update
12/13/16 Board of Directors	Received Update
11/17/16 WMLRP Committee	Received Update
10/20/16 WMLRP Committee	Received Update
09/15/16 WMLRP Committee	Received Update
09/13/16 Board of Directors	Received Update
08/18/16 WMLRP Committee	Received Update
07/21/16 WMLRP Committee	Received Update
06/16/16 WMLRP Committee	Received Update
06/14/16 Board of Directors	Received Update
05/19/16 WMLRP Committee	Received Update
04/21/16 WMLRP Committee	Received Update
03/17/16 WMLRP Committee	Received Update
03/08/16 Board of Directors	Received Update
02/18/16 WMLRP Committee	Received Update
01/12/16 WMLRP Committee	Received Update
12/17/15 WMLRP Committee	Received Update
12/08/15 Board of Directors	Received Update
11/19/15 WMLRP Committee	Received Update
10/15/15 WMLRP Committee	Received Update
09/17/15 WMLRP Committee	Received Update
09/08/15 Board of Directors	Received Update
08/20/15 WMLRP Committee	Received Update

6) 2017 SUMMER NEWSLETTEROFFICE OF THE GENERAL MANAGER

Approve the proposed 2017 Summer Newsletter and its circulation. (EST. TIME: 10 MIN.)

Legislative History

05/16/17 Public Information Committee	Considered and Recommended Board Approval
04/18/17 Public Information Committee	Considered

7) CODE REVISIONS REGARDING DIRECTOR COMPENSATION FOR ATTENDANCE AT EVENTSGENERAL COUNSEL

That the Board adopt an Ordinance Amending Section 8.20.070 of Chapter 8.20 of the Goleta Water District Code Regarding Provisions for Director Compensation for Attendance at Certain Types of Events. (EST. TIME: 10 MIN.)

Legislative History

04/26/17 Board of Directors	Considered
04/26/17 Administration Committee	Considered and Recommended Board Approval
03/29/17 Administration Committee	Considered and Continued
03/14/17 Board of Directors	Considered and Referred to Administration Committee

8) CCRB 2017-18 FISCAL YEAR BUDGET RATIFICATIONWATER SUPPLY & CONSERVATION

Adopt a Resolution ratifying the Cachuma Conservation Release Board 2017-18 Fiscal Year Budget. (EST. TIME: 05 MIN.)

9) COMB & CCRB MONTHLY REPORTDIRECTOR HANSON

Receive a report from Director Hanson on the activities of Cachuma Operation & Maintenance Board (COMB) and Cachuma Conservation Release Board (CCRB) for the month of May 2017. (EST. TIME: 5 MIN.)

10) ACWA REPORTDIRECTOR ROSEN

- a) Receive a report from Director Rosen on the Association of California Water Agencies Board of Directors' activities; and
- b) Adopt a Resolution supporting the Association of California Water Agencies' Policy Statement on Bay-Delta Flow Requirements; and
- c) Adopt a Resolution expressing support for AB 1654 and opposition to AB 1668; and
- d) Adopt a Resolution expressing opposition to AB 810; and
- e) Adopt a Resolution expressing opposition to a provision of SB 623. (EST. TIME: 5 MIN.)

11) SANTA BARBARA COUNTY SPECIAL DISTRICTS ASSOC. MONTHLY REPORTDIRECTOR CUNNINGHAM

Receive a report from Director Cunningham on the activities of the Santa Barbara County Special Districts Association for the month of May 2017. (EST. TIME: 5 MIN.)

12) GOLETA SANITARY DISTRICT MONTHLY REPORTPRESIDENT MERRIFIELD

Receive a report from President Merrifield on the activities of the Goleta Sanitary District for the month of May 2017. (EST. TIME: 5 MIN.)

13) FUTURE MEETING AGENDA ITEMSPRESIDENT MERRIFIELD

Receive suggestions for future Board of Director meeting agendas. (EST. TIME: 5 MIN.)

Consent Agenda

All matters listed hereunder constitute a consent agenda, and will be acted upon by a single roll call vote of the Board. Persons desiring to address the Board may complete and deliver to the Secretary the form which is available at the Hearing Room entrance prior to the commencement of the consent agenda. The public comment period is reserved for comment on the matter within the subject matter jurisdiction of the Board of Directors. At the discretion of the Chair, each person may address the Board for up to one minute per consent agenda item or up to 5 minutes for all items contained on the consent agenda.

CA-1) MEETING MINUTESBOARD SECRETARY

Approval of minutes of the Board of Directors' May 9, 2017 meeting.

CA-2) GENERAL COUNSEL CONTRACT AMENDMENTGENERAL MANAGER

Consider adopting a Resolution authorizing the President to execute a contract amendment with Mary McMaster for service as General Counsel.

CA-3) CHEMICAL SUPPLIER CONTRACTSOPERATIONS

Receive a report summarizing the District's planned chemical suppliers for Fiscal Years 2017-18 and 2018-19.

CA-4) INVESTMENT REPORT – APRIL 30, 2017ADMINISTRATION

Receive and file the Goleta Water District Investment Report as of April 30, 2017

CA-5) MONTHLY ADMINISTRATION COMMITTEE REPORTPRESIDENT MERRIFIELD

Receive a report from President Merrifield on the activities of the Administration Committee for the month of May 2017.

CA-6) MONTHLY WATER MANAGEMENT AND LONG RANGE PLANNING COMMITTEE REPORTDIRECTOR HANSON

Receive a report from Director Hanson on the activities of the Water Management and Long Range Planning Committee for the month of May 2017.

CA-7) MONTHLY PUBLIC INFORMATION COMMITTEE REPORTDIRECTOR CUNNINGHAM

Receive a report from Director Cunningham on the activities of the Public Information Committee for the month of May 2017.

Approval of Consent Agenda

Adjourn to June 14, 2017
GOLETA WATER DISTRICT
BOARD HEARING ROOM
4699 Hollister Ave., Goleta CA

2015 Urban Water Management Plan



June 13, 2017



What is an UWMP?



- Required by Dept. of Water Resources for urban water suppliers
 - Prepared based on strict DWR requirements and guidelines
- Must be completed every 5 years
- Long-term, general planning document
- Helps to plan for future water reliability
- Requires establishing and tracking per capita water reduction targets
- Requirement for State funding



Public Notification



- Notice of Public Review and Adoption
 - Online notice
 - Newspaper notice
- Local Agency Outreach
 - City of Goleta
 - Santa Barbara County
 - UC Santa Barbara
 - City of Santa Barbara
 - La Cumbre Mutual Water Company
 - Goleta Sanitary District

**GOLETA WATER DISTRICT
NOTICE OF PUBLIC HEARING
2015 URBAN WATER MANAGEMENT PLAN**

NOTICE IS HEREBY GIVEN that at 5:30 pm on June 13, 2017 at 4699 Hollister Ave., Goleta, CA 93110, the Board of Directors of the Goleta Water District (GWD) will conduct a public hearing pursuant to California Water Code sections 19642 and 19698.26 to consider community comments and input on the Goleta Water District 2015 Urban Water Management Plan (UWMP).

The Draft UWMP is currently available for public review at the GWD's Administrative Office at the address above, and online at www.goletawater.com. The draft UWMP has been developed in accordance with the California Urban Water Management Planning Act, Water Code sections 19610 through 19656, as well as the Water Conservation Act of 2009, Water Code sections 19608 through 19608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and is an important part of the 2015 UWMP update process.

Written comments may be submitted by 5 pm Tuesday, June 13, 2017 to the attention of Ryan Drake, Water Supply & Conservation Manager at the address above or to rdrake@goletawater.com. Verbal comments can also be made at the hearing noted above. Upon conclusion of the hearing, the Board of Directors may revise, change, modify, and/or adopt the 2015 Urban Water Management Plan.

In compliance with the Americans with Disabilities Act, if you are disabled and need accommodation to participate in the hearing, please contact Beth Horn, at 805-879-4621 for assistance of least 3 working days before the hearing.

PUBLISH ON May 29 and June 5, 2017 May 29; June 5/2017-52277



Primary Components of 2015 UWMP



- Population and demand analysis
- Supply analysis
- Gallon per capita per day (GPCD) targets and compliance
- Demand Management Measures
- Water Shortage Contingency Plan
- Additional analyses
 - Water Loss Audit
 - Water-Energy Calculation
 - Climate Change Vulnerability



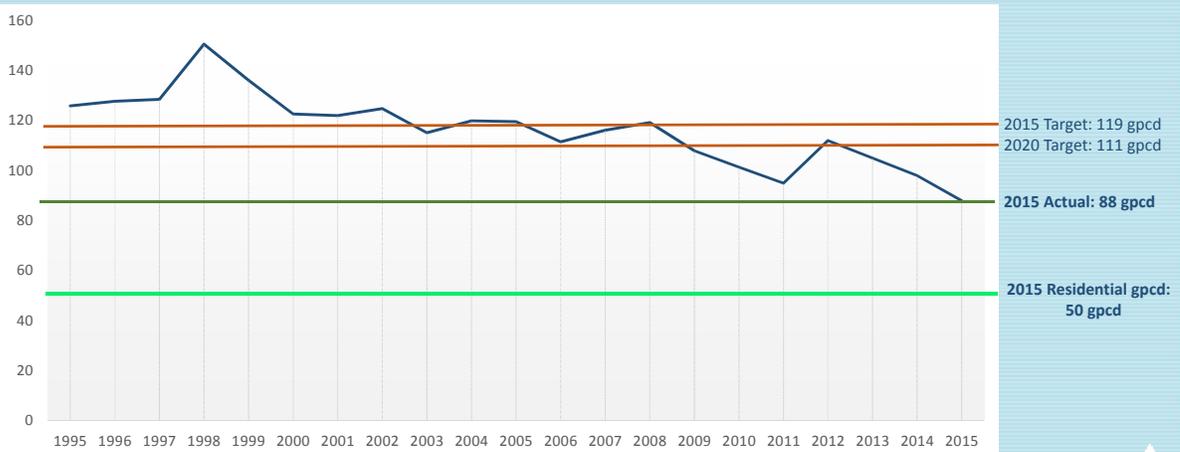
GPCD Calculations and Compliance



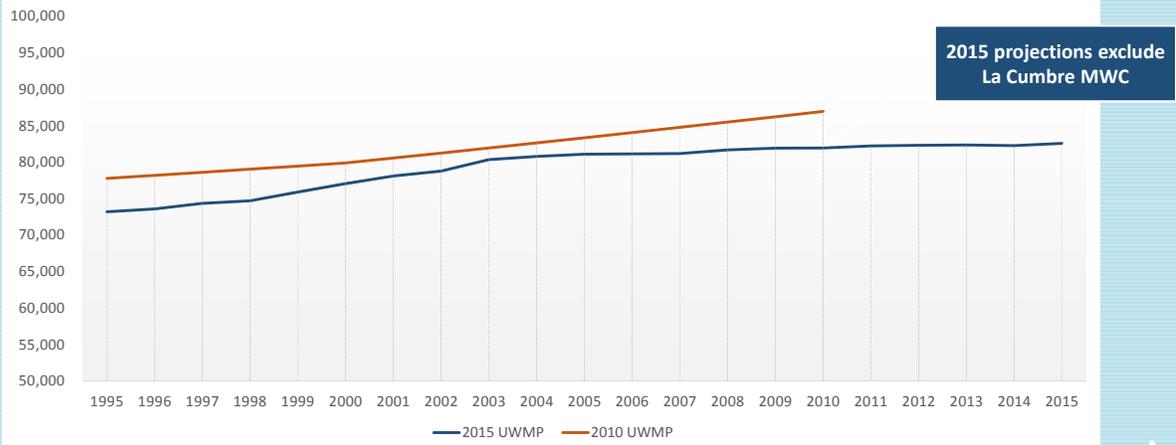
- SB X7-7 requires reductions in urban per capita water use
- GPCD baseline and targets for potable water use
 - Excludes agricultural irrigation demand and recycled water use
- District's baseline and targets
 - Baseline (1995 to 2004): 127 gpcd
 - 2015 Target: 119 gpcd
 - **2015 Actual: 88 gpcd (residential-GPCD: 50)**
 - 2020 target: 111 gpcd



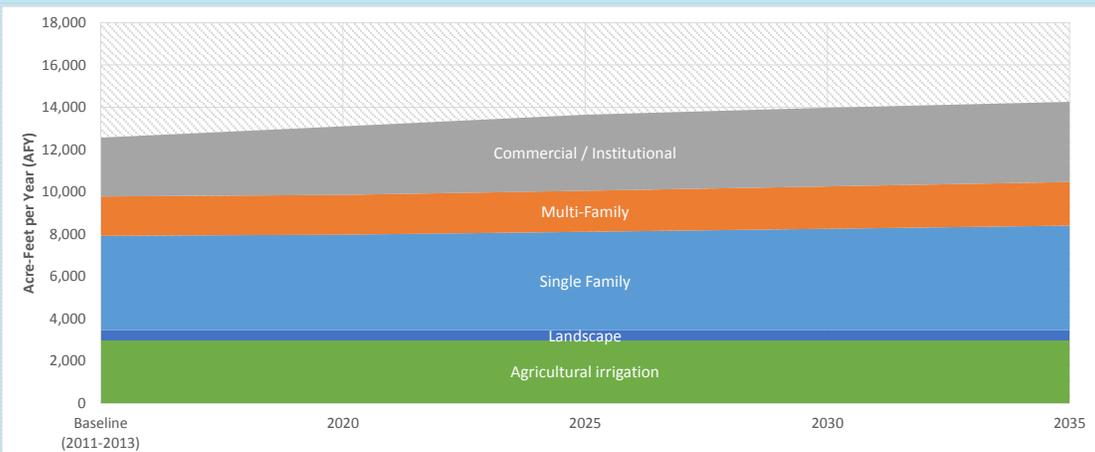
GPCD Calculations and Compliance



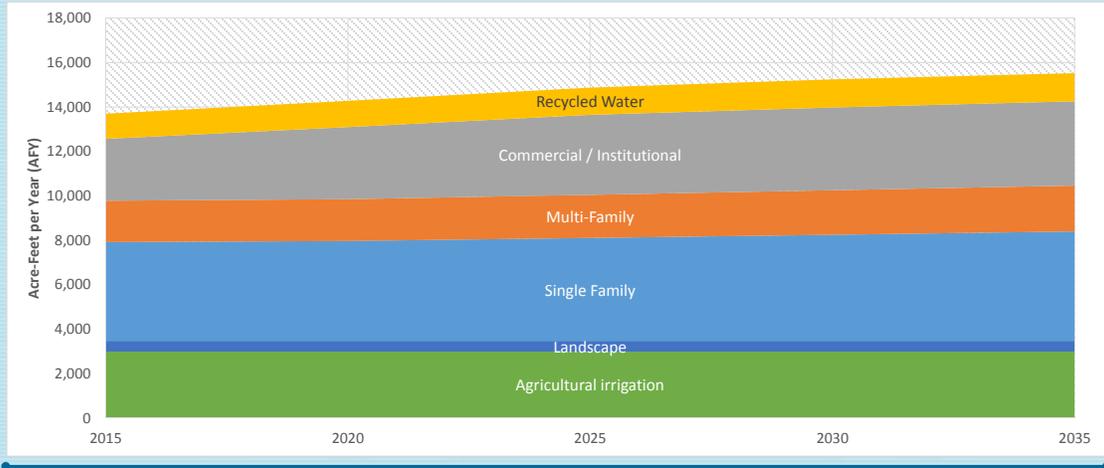
Population Analysis



Potable Demand Projections

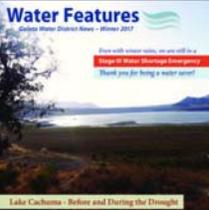


Total Demand Projections



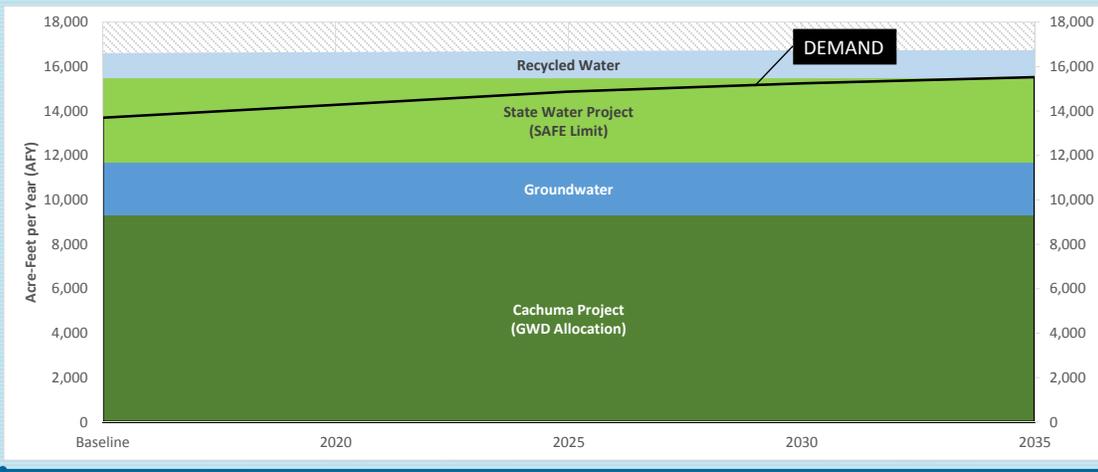
Ongoing Demand Management Measures



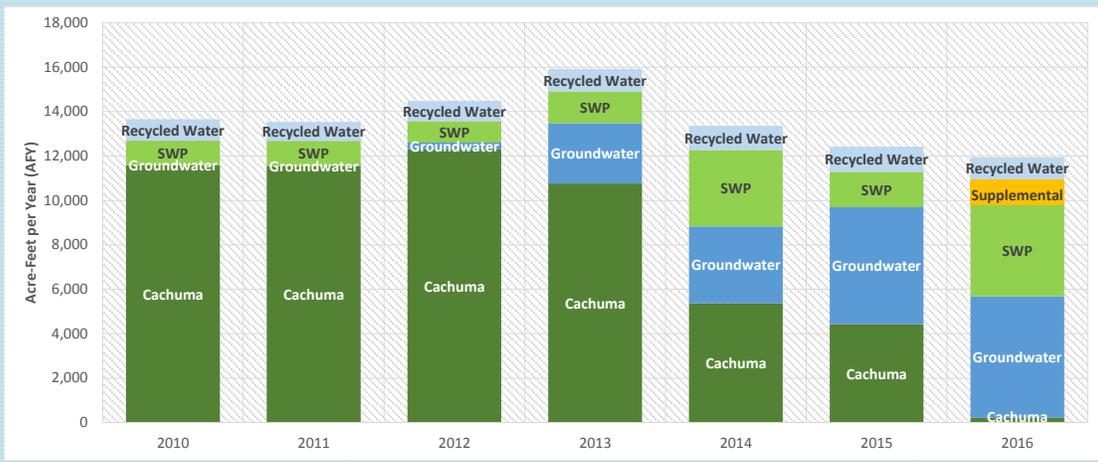
			
Water waste prevention ordinance	Conservation pricing	Public education and outreach	Water conservation program coordination and staffing



Average Year Available Supplies



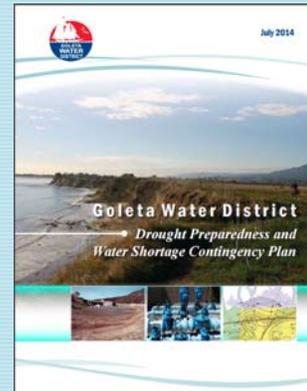
2010 - 2015 Supplies Used



Water Shortage Contingency Plan



- Approved by GWD Board of Directors in July 2014
- Assesses water supply in dry years and establishes stages to address water shortages
- Plan includes:
 - Restrictions and prohibitions (depending on stage)
 - Penalties for excessive use
 - Drought surcharge



Climate Change Vulnerability Assessment



Water Demand

- Increased temperature likely to increase irrigation demand
- More frequent and severe droughts likely to increase seasonal and annual variability

Water Supply

- Reduced precipitation reduces flows into Cachuma Lake and recharge of groundwater
- Reduced SWP reliability

Water Quality

- Although Goleta Basin protected from seawater intrusion by Mesa fault, sea level rise could impact risk of intrusion

Adaptation Strategies

- Increase groundwater pumping capacity to address extended droughts
- Increase WTP treatment capacity to increase injection ability



Schedule



Recommendation:

Adopt a resolution approving the 2015 Urban Water Management Plan



Appendix D - SBX7-7 Verification Form

WUEdata Entry Exceptions

The data from the tables below will not be entered into WUEdata tables (the tabs for these tables' worksheets are colored **purple**). These tables will be submitted as separate uploads, in Excel, to WUEdata.

Process Water Deduction

SB X7-7 tables 4-C, 4-C.1, 4-C.2, 4-C.3, 4-C.4 and 4-D

A supplier that will use the process water deduction will complete the appropriate tables in Excel, submit them as a separate upload to the WUE data tool, and include them in its UWMP.

Target Method 2

SB X7-7 tables 7-B, 7-C, and 7-D

A supplier that selects Target Method 2 will contact DWR (gwen.huff@water.ca.gov) for SB X7-7 tables 7-B, 7-C, and 7-D.

Target Method 4

These tables are only available online at

<http://www.dwr.water.ca.gov/wateruseefficiency/sb7/committees/urban/u4/ptm4.cfm>

A supplier that selects Target Method 4 will save the tables from the website listed above, complete the tables, submit as a separate upload to WUE data, and include them with its UWMP.

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

(select one from the drop down list)

Acre Feet

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

NOTES:

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	15,291.00	Acre Feet
	2008 total volume of delivered recycled water	1,303	Acre Feet
	2008 recycled water as a percent of total deliveries	8.52%	Percent
	Number of years in baseline period ^{1, 2}	10	Years
	Year beginning baseline period range	1995	
	Year ending baseline period range ³	2004	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range ⁴	2008	

¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.

² The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.

³ The ending year must be between December 31, 2004 and December 31, 2010.

⁴ The ending year must be between December 31, 2007 and December 31, 2010.

NOTES:

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input checked="" type="checkbox"/>	4. Other DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year	Population	
10 to 15 Year Baseline Population		
Year 1	1995	73,190
Year 2	1996	73,577
Year 3	1997	74,346
Year 4	1998	74,684
Year 5	1999	75,891
Year 6	2000	77,056
Year 7	2001	78,097
Year 8	2002	78,760
Year 9	2003	80,348
Year 10	2004	80,775
<i>Year 11</i>		
<i>Year 12</i>		
<i>Year 13</i>		
<i>Year 14</i>		
<i>Year 15</i>		
5 Year Baseline Population		
Year 1	2004	80,775
Year 2	2005	81,088
Year 3	2006	81,134
Year 4	2007	81,169
Year 5	2008	81,673
2015 Compliance Year Population		
2015		82,569
NOTES:		

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

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	Deductions					Annual Gross Water Use	
		Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>		
10 to 15 Year Baseline - Gross Water Use								
Year 1	1995	12,656			-	2,334.80	-	10,321
Year 2	1996	12,800			-	2,270.41	-	10,530
Year 3	1997	14,192			-	3,487.65	-	10,705
Year 4	1998	14,531			-	1,929.57	-	12,602
Year 5	1999	13,999			-	2,423.95	-	11,575
Year 6	2000	12,892			-	2,304.55	-	10,587
Year 7	2001	12,715			-	2,039.00	-	10,676
Year 8	2002	13,807			-	2,794.10	-	11,013
Year 9	2003	12,803			-	2,438.44	-	10,365
Year 10	2004	13,788			-	2,937.71	-	10,851
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use							10,922	
5 Year Baseline - Gross Water Use								
Year 1	2004	13,788			-	2,937.71	-	10,851
Year 2	2005	13,087			-	2,223.17	-	10,864
Year 3	2006	12,489			-	2,353.08	-	10,135
Year 4	2007	13,935			-	3,372.52	-	10,562
Year 5	2008	13,987			-	3,082.34	-	10,905
5 year baseline average gross water use							10,663	
2015 Compliance Year - Gross Water Use								
2015		11,287	-		-	3,159.76	-	8,127

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Complete one table for each source.

Name of Source All Sources Combined

This water source is:

The supplier's own water source

A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
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10 to 15 Year Baseline - Water into Distribution System

Year 1	1995	12,655.72		12,656
Year 2	1996	12,800.19		12,800
Year 3	1997	14,192.21		14,192
Year 4	1998	14,531.18		14,531
Year 5	1999	13,998.59		13,999
Year 6	2000	12,891.61		12,892
Year 7	2001	12,714.63		12,715
Year 8	2002	13,807.47		13,807
Year 9	2003	12,803.01		12,803
Year 10	2004	13,788.40		13,788
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-

5 Year Baseline - Water into Distribution System

Year 1	2004	13,788.40		13,788
Year 2	2005	13,087.10		13,087
Year 3	2006	12,488.56		12,489
Year 4	2007	13,934.64		13,935
Year 5	2008	13,987.49		13,987

2015 Compliance Year - Water into Distribution System

2015		11,287		11,287
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* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES:

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1995	73,190	10,321	126
Year 2	1996	73,577	10,530	128
Year 3	1997	74,346	10,705	129
Year 4	1998	74,684	12,602	151
Year 5	1999	75,891	11,575	136
Year 6	2000	77,056	10,587	123
Year 7	2001	78,097	10,676	122
Year 8	2002	78,760	11,013	125
Year 9	2003	80,348	10,365	115
Year 10	2004	80,775	10,851	120
<i>Year 11</i>	0	-	-	
<i>Year 12</i>	0	-	-	
<i>Year 13</i>	0	-	-	
<i>Year 14</i>	0	-	-	
<i>Year 15</i>	0	-	-	
10-15 Year Average Baseline GPCD				127
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2004	80,775	10,851	120
Year 2	2005	81,088	10,864	120
Year 3	2006	81,134	10,135	112
Year 4	2007	81,169	10,562	116
Year 5	2008	81,673	10,905	119
5 Year Average Baseline GPCD				117
2015 Compliance Year GPCD				
2015		82,569	8,127	88
NOTES:				

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

10-15 Year Baseline GPCD	127
5 Year Baseline GPCD	117
2015 Compliance Year GPCD	88

NOTES:

SB X7-7 Table 7: 2020 Target Method		
<i>Select Only One</i>		
Target Method		Supporting Documentation
<input type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input checked="" type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	2020 Target GPCD
127	102
NOTES:	

SB X7-7 Table 7-E: Target Method 3				
Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
<input type="checkbox"/>		North Coast	137	130
<input type="checkbox"/>		North Lahontan	173	164
<input type="checkbox"/>		Sacramento River	176	167
<input type="checkbox"/>		San Francisco Bay	131	124
<input type="checkbox"/>		San Joaquin River	174	165
<input checked="" type="checkbox"/>		Central Coast	123	117
<input type="checkbox"/>		Tulare Lake	188	179
<input type="checkbox"/>		South Lahontan	170	162
<input type="checkbox"/>		South Coast	149	142
<input type="checkbox"/>		Colorado River	211	200
Target <i>(If more than one region is selected, this value is calculated.)</i>				0
NOTES:				

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD From SB X7-7 Table 5	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
117	111	117	111
¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.			
² 2020			
NOTES:			

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
111	127	119
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
88	119	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	-	88	88	YES

NOTES:

**Appendix E - Notice from DWR Approving Alternative
Population Calculation**

Lila Spring

From: Huff, Gwen@DWR <Gwen.Huff@water.ca.gov>
Sent: Tuesday, February 16, 2016 10:43 AM
To: Lila Spring
Subject: RE: Alternative Population Analysis Goleta

Lila –

I find that the population methodology used for Goleta Water District (described below) is appropriate and addresses the requirements of the Water Code.

Gwen

*Gwen Huff
Senior Environmental Scientist
Urban Water Use Efficiency Unit
Department of Water Resources
gwen.huff@water.ca.gov
(916) 651-9672*

From: Lila Spring [mailto:lspring@rmcwater.com]
Sent: Friday, February 12, 2016 4:57 PM
To: Huff, Gwen@DWR
Cc: Rob Morrow
Subject: RE: Alternative Population Analysis Goleta

Dear Gwen,

Thank you again for your help polishing the details of this analysis. Below is the updated description of the alternative population analysis conducted for Goleta Water District.

Best regards,
Lila

Population

Agencies are required to recalculate their baseline GPCD figures in the 2015 UWMP with final 2010 U.S. Census data, which was not available until after the 2010 UWMPs were due to DWR. An online population tool with preloaded Census data for the years 1990, 2000, and 2010 was created by DWR and made available to water suppliers for use in calculating service area population. Calculating population for GWD using this tool, however, led to unexpectedly low population numbers. It was determined that the tool's method for distributing population across Census blocks was leading to the exclusion of some of GWD's service area population. It was also discovered during this analysis that the population calculated in 2010 had erroneously included population served by neighboring La Cumbre Mutual Water District. In order

to correct for the errors made in 2010 and the underestimate inherent in the DWR population tool, an alternative analysis was performed.

DWR asks that the Census block level be used for alternative population calculations. However, the approach conducted here used block groups –which have larger areas than blocks– for two reasons. First, for the majority of block groups the entire population was contained within GWD’s service area. In instances where the block group was split between the service area and another urban area, a GIS based analysis was conducted to determine the portion of the block group population within the service area. This methodology allowed for a refined level of analysis despite the larger size of block groups compared to blocks. Second, block group is the finest level of Census data that is readily available for 1990. Using the block group level for all Census years allowed for consistency in the analysis

To calculate population in Census years, Census block groups for the years 1990, 2000, and 2010 were compared to GWD’s water service area boundary in those years using GIS. This was done to determine which Census block groups were served by GWD and to identify the associated population for inclusion in the total service area population. GWD is bordered to the South by the Pacific Ocean, to the North and West by very sparsely populated areas including the Los Padres National Forest and to the East by the City of Santa Barbara water service area. For Census block groups that were partially within the service area with the remaining portion part of Los Padres National Forest or a neighboring rural area, the entire population for the Census block group was counted as part of GWD’s service area. Areal imagery was used to confirm that the vast majority of developed areas were within GWD’s service area and to validate the inclusion of the full Census block group population in those instances. In instances where the portion of the Census block group not within GWD’s service area was part of the City of Santa Barbara, GIS was used to determine the percentage of the geographic area of the block group within GWD’s service area. That percentage was then applied to the total population for the block group to determine how much of the population to include as part of the service area population.

Once the population of each block group served by GWD was determined, total service area population was summed for 1990, 2000, and 2010. The population in all other years was determined by first calculating a persons per connection factor for 1990, 2000, and 2010, using the total number of active GWD connections and population. The rate of change was then calculated between the persons per connection value in 1990 and 2000 and between 2000 and 2010, and applied to estimate the persons per connection in all non-Census years. Once the persons per connection value was established for all years 1990 to 2010, it was used in conjunction with the total number of connections in those years to estimate the annual population. The population for 2015 was also needed in order to determine compliance with the 2015 water use target. To do this, the persons per connection rate of change from 2000 to 2010 was extended from 2010 to 2015 to determine the 2015 persons per connection. This 2015 persons per connection was then multiplied by the number of connections to estimate population in that year.

Lila Spring
Water Resources Planner

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Appendix F - 2016 Groundwater Management Plan

Electronic version included on CD

Appendix G - Wright Judgement

Electronic version included on CD

Appendix H - 2013-2014 CUWCC BMP Reports

Electronic version included on CD

**Appendix I - Drought Preparedness and Water Shortage
Contingency Plan**

Electronic version included on CD



Prepared by:



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