Golden State
Water Company
A Subsidiary of American States Water Company

Draft Report

2010 Urban Water Management Plan

Ojai

CORPORATE OFFICE
630 E. FOOTHILL BLVD.
SAN DIMAS CA 91773

August 2011

Kennedy/Jenks Consultants

Draft Report

2010 Urban Water Management Plan—Ojai

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630 E. Foothill Blvd.
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July 2011

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Abbreviations

ac-ft	acre-feet
ac-ft/yr	acre-feet per year
Act	Urban Water Management Planning Act
AWWA	American Water Works Association
BMPs	best management practices
Cal EMA	California Emergency Management Agency
CBO	community-based organization
CCRs	consumer confidence reports
CDPH	California Department of Public Health
CDP	Census Designated Place
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CII	commercial, industrial, institutional
CIMIS	California Irrigation Management Information System
Council	California Urban Water Conservation Council
CPUC	California Public Utilities Commission
CSA	customer service area
CT	concentration time
CUWA	California urban water agencies
CVP	Central Valley Project
CWSs	community water systems
D/DBP	disinfectant/disinfection by-product
DMM	demand management measure
DOC	dissolved organic carbon
DOF	Department of Finance

DWF	dry weather flow
DWR Guidebook	Guidebook to Assist Water Suppliers in the Preparation of a 2010 Urban Water Management Plan
DWR	Department of Water Resources (California)
EC	enhanced coagulation
EPA	Environmental Protection Agency
ERP	emergency response plan
ETo	evapotranspiration
FWSS	Future Water Supply Study
gpm	U.S. gallons per minute
gpcd	gallons per capita day
GSWC	Golden State Water Company
IOCs	inorganic contaminants
IRP	Integrated Resource Plan
LACSD	Sanitation Districts of Los Angeles County
MCLGs	maximum contaminant level goals
MCLs	maximum contaminant levels
Metropolitan	Metropolitan Water District of Southern California
MG	million gallons
MMM	multimedia mitigation
MOU	Memorandum of Understanding (Regarding Urban Water Conservation in California)
MRDLs	maximum residual disinfectant levels
MTBE	methyl tertiary-butyl ether
MWD	Municipal Water District with reference to any of the member agencies of the Metropolitan Water District of Southern California
N/A	not available
NAICS	North American Industry Classification System

NDMA	N-nitrosodimethylamine
NPDES	National Pollutant Discharge Elimination System
NPV	net present value
NTNCWS	non-transient non-community water systems
NTU	nephelometric turbidity units
OCWD	Orange County Water District
OEHHA	Office of Environmental Health Hazard Assessment
RO	reverse osmosis
SBX7-7	Senate Bill 7X-7, The Water Conservation Act of 2009
SCAG	Southern California Association of Governments
SDWA	Safe Drinking Water Act
SLC	State Lands Commission
SMCL	secondary maximum contaminant level
SOCs	synthetic organic contaminants
SUVA	source-water-specific ultraviolet absorbance
SWP	State Water Project
SWTR	Surface Water Treatment Rule
TDS	total dissolved solids
TOC	total organic carbon
UCM	unregulated contaminants monitoring
ULFT	ultra-low-flush-toilet
USBR	U.S. Bureau of Reclamation
UWMP	Urban Water Management Plan
VOCs	volatile organic compounds
WAP	Water Action Plan
WEWAC	Water Education Water Awareness Committee

WRCC	Western Regional Climate Center
WRP	water reclamation plant
WSDM Plan	Water Surplus and Drought Management Plan
WY	water year

Definitions

Chapter 2, Part 2.6, Division 6 of the California Water Code provides definitions for the construction of the Urban Water Management Plans. Appendix A contains the full text of the Urban Water Management Planning Act.

CHAPTER 2. DEFINITIONS

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

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

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

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

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

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

Section 10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

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

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

Chapter 1: Plan Preparation

1.1 Background

This Urban Water Management Plan (UWMP) has been prepared for the Golden State Water Company (GSWC) Ojai System in accordance with the Urban Water Management Planning Act (the Act) Division 6, Part 2.6, of the California Water Code, Sections 10608 through 10657 as last amended by Senate Bill No. 7 (SBX7-7), the Water Conservation Act of 2009. The original bill requiring an UWMP was signed into law in 1983. The Water Conservation Act of 2009, which became law in November 2009, requires increased emphasis on water demand management and requires the State to achieve a 20 percent reduction in urban per capita water use by December 31, 2020.

Urban water suppliers with more than 3,000 service connections or water use of more than 3,000 acre-feet per year (ac-ft/yr) are required to submit a UWMP every five years to the California Department of Water Resources (DWR). The UWMP typically must be submitted by December 31 of years ending in zero and five, however SBx7-7 extended the 2010 UWMP deadline to July 1, 2011 to provide for development by DWR of required methodologies for determining conservation baselines and goals. GSWC prepared an UWMP for the Ojai System in 1985, 1990, 1995, 2000, and 2005. This 2010 UWMP is an update to the 2005 plan.

The portion of the law that describes the purpose and intent of the UWMP states and declares the following:

Section 10610.2.

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

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

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

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

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

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

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

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

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

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

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

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

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

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

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

1.2 System Overview

GSWC is an investor-owned public utility company regulated by the California Public Utilities Commission (CPUC). This UWMP has been prepared for the Ojai System. GSWC owns and operates several water systems also referred to as service areas, in California as shown in Figure 1-1. Figure 1-1 includes identification of both those systems meeting the definition of Urban Water provider and those that are too small to be required to prepare an UWMP. An UWMP has been prepared for each of the systems shown that meet the Urban Water provider threshold as required by the Act.

Located in Ventura County, the Ojai System serves the City of Ojai, part of the unincorporated area east of the City of Ventura in Ventura County and part of the Meiners Oaks community to the west of Ojai. The service area is primarily characterized by residential land use, with some commercial land use. Figure 1-1 illustrates the location of the Ojai System.

1.3 Notice of Document Use

GSWC is committed to implementation of the projects, plans, and discussions provided within this document. However, it is important to note that execution of the plan is contingent upon the regulatory limitations and approval of the CPUC and other state agencies. Additionally, this document merely presents the water supply, reliability, and conservation programs known and in effect at the time of adoption of this plan. GSWC shall not be responsible for changed or unforeseen conditions affecting any of the above factors after adoption of the plan.

GOLDEN STATE WATER COMPANY
2010 Urban Water Management Plan
Ojai System, Location Map
July 2010

Figure 1-1

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1.4 California Urban Water Conservation Council

GSWC is a signatory to the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) administered by the California Urban Water Conservation Council (Council). The Council had its beginnings as an independent entity housed under California Urban Water Agencies (CUWA). Currently, the Council is a fully independent nonprofit organization.

The objective of the Council is to implement the MOU. The MOU was signed into existence in 1991 by nearly 100 urban water agencies and environmental groups. Current membership of the Council is over 389 members from various groups such as water suppliers, public advocacy organizations, and other interested groups (Council, 2011).

The MOU is a document by which the signatories obligate themselves to implement prescribed urban water conservation best management practices. The goal of the practices in the MOU is to reduce long-term urban water demands and to provide practices that may be implemented during occasional water supply shortages (Council, 2004). The urban water conservation practices identified in the MOU are called the Best Management Practices (BMPs) and range from water audits to toilet replacements.

There are 14 BMPs that also coincide with the 14 demand management measures (DMMs) identified in the Act. The last amendment of the MOU in 2008 included implementation of a new organization of the 14 BMPs, grouping them into “foundational” and “programmatic” categories. Additionally, the amendment provides for alternative measures for complying with the MOU which are discussed in the conservation chapter of this UWMP. The conservation program descriptions included in this document are formulated around the current, adopted MOU.

Each agency that is a signatory to the MOU is required to file reports on the implementation of the BMPs identified in the MOU. For the purposes of the UWMP, the reports filed with the Council on the BMPs that are implemented or under implementation can be substituted for the reporting requirements of Section 10631 (f) (1). The UWMP uses the reports filed with the Council in addition to any necessary analysis as described in Section 10631.

1.5 Public Utility Commission 2010 Water Action Plan

The CPUC adopted the 2005 Water Action Plan (WAP) in December 2005 and an updated 2010 WAP in October 2010. The WAP is a general policy document, and specific implementation policies and programs, along with modifications to CPUC ratemaking policies, and other programs including conservation, long term planning, water quality and drought management programs are ongoing.

The purpose of the 2010 WAP update was to establish renewed focus on the following elements:

1. Maintain the highest standards of water quality;
2. Promote water infrastructure investment;
3. Strengthen water conservation programs to a level comparable to those of energy utilities;
4. Streamline CPUC regulatory decision-making; and

5. Set rates that balance investment, conservation, and affordability;

6. Assist low income ratepayers;

GSWC has been actively involved with the CPUC in suggesting optimal approaches to the WAP. In particular, the GSWC has suggested specific implementation measures and modifications to certain CPUC rate setting practices so that regulated utilities are able as a practical matter to achieve the policy objectives of the WAP. These efforts are intended to include further investment in local resource optimization, reduced reliance on imported supplies, enhanced conservation and intensification of company-wide efforts to optimize water resource mix, including planned water supply projects and programs to meet the long term water supply needs of GSWC's customers.

1.6 Agency Coordination and Public Participation

The 2010 UWMP requirements for Agency Coordination and public participation include specific timetables and requirements as presented in this chapter. The required elements of the Act are as follows:

Section 10620.

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

Section 10621.

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

Section 10635.

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

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

Table 1-1 provides the agencies with which coordination occurred while preparing this 2010 UWMP. The initial coordination included the distribution of letter notification and request for information as indicated in Table 1-1, followed by telephone correspondence as necessary to obtain supporting data for the preparation of the UWMP. Table 1-1 also provides a checklist of agencies provided the notifications and access to the documents.

For this update of the Ojai System UWMP, a public hearing was held on August 15, 2011 at the Nordoff High School in Ojai, California. This public session was held for review and comment on the draft plan before approval by GSWC. Legal public notices for the public hearing were published 60 days in advance in the local newspapers in accordance with Government Code Section 6066. Copies of the draft plan were available to the public for review at GSWC's Ojai office. Appendix B contains a copy of the hearing notice from a local newspaper and the meeting minutes from the public hearing pertaining to the UWMP.

Table 1-1: Coordination with Agencies

Agency	Contacted for Assistance	Participated in UWMP Development	Commented on the Draft	Attended Public Meetings	Received Copy of the Draft	Sent Notice of Intent to Adopt	Not Involved/ No Information
Southern California Association of Governments (SCAG)	✓						
City of Ojai	✓						
County of Ventura							
Casitas Municipal Water District (CMWD)	✓						
Ojai Valley Sanitation District (OVSD)	✓						
Ojai Basin Groundwater Management Agency (OBGMA)	✓						

Note:
This table is based on DWR's *Guidebook to Assist Water Suppliers in the Preparation of a 2010 Urban Water Management Plan* (DWR Guidebook) Table 1.

1.7 Plan Adoption and Submittal

Plan adoption and submittal requirements are detailed in the following sections of the Act:

Section 10621.

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

Section l0642. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

Section 10644. An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after

adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

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

The final UWMP, as adopted by GSWC, will be submitted to the DWR within 30 days of adoption. This plan includes all information necessary to meet the requirements of California Water Code Division 6, Part 2.6 (Urban Water Management Planning). Adopted copies of this plan are available to the public at GSWC's Ojai Customer Service Office.

1.8 UWMP Preparation

GSWC prepared this UWMP as permitted by the following section of the Act.

Section 10620(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

During the preparation of the UWMP, documents that have been prepared over the years by GSWC and other entities were reviewed and information from those documents incorporated, as applicable, into this UWMP. The list of the references is provided in Chapter 9.

The adopted plans are available for public review at GSWC's Ojai Office as required by Section 10645. Copies of the plan were submitted to DWR, cities and counties within the service area, the State Library, and other applicable institutions within 30 days of adoption as required by Section 10644. Appendix K includes copies of the transmittals included with the adopted plan as supporting documentation.

1.9 UWMP Implementation

Section l0643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

GSWC is committed to the implementation of this UWMP concurrent with the scheduled activities identified herein as required by Section 10643 of the Act. Each system is managed through GSWC District offices and with appropriate regulatory approval is afforded staff to properly plan and implement responses identified in this document and other key planning efforts to proactively addressing water supply reliability challenges. Furthermore, each region of GSWC has a conservation coordinator that oversees the implementation of DMMs through GSWC participation in the Council's MOU.

1.10 Content of the UWMP

This UWMP addresses all subjects required by Section 10631 of the Act as defined by Section 10630, which permits "levels of water management planning commensurate with the numbers of customers served and the volume of water supplied." All applicable sections of the

Act are discussed in this UWMP, with chapters of the UWMP and Guidebook Checklist cross-referenced against the corresponding provision of the Act in Table 1-2. Additionally, a completed copy of the 2010 Urban Water Management Plan Checklist organized by subject is included at Appendix J.

Table 1-2: Summary of UWMP Chapters and Corresponding Provisions of the California Water Code

Chapter	Corresponding Provisions of the Water Code		UWMP Guide Book Checklist No.
Chapter 1: Plan Preparation	10642	Public participation	55 and 56
	10643	Plan implementation	58
	10644	Plan filing	59
	10645	Public review availability	60
	10620 (a)–(e)	Coordination with other agencies; document preparation	4
	10621 (a)–(c)	City and county notification; due date; review	6 and 52
	10620 (f)	Resource optimization	5
Chapter 2: System Description	10631 (a)	Area, Demographics, Population, and climate	8-12
Chapter 3: Water Use	10608	Urban water use targets	1
	10631 (e), (k)	Water use, data sharing	25 and 34
Chapter 4: Water Supply	10631 (b)–(d), (h), (k)	Water sources, reliability of supply, transfers and exchanges, supply projects, data sharing	13-21, 24, 33
	10631 (i)	Desalination	31
	10633	Recycled water	44-51
Chapter 5: Water Quality	10634	Water quality impacts on reliability	52
Chapter 6: Water Supply Reliability	10635 and 10631	Water supply reliability, and vulnerability to seasonal or climatic shortage	22
Chapter 7: Conservation Program and Demand Management Measures	10631 (f)–(g), (j) and 10631.5	Conservation Program and DMM implementation status	2, 26-29, 32
Chapter 8: Water Shortage Contingency Plan	10632	Water shortage contingency plan	35-43

1.11 Resource Optimization

Section 10620 (f) of the Act asks urban water suppliers to evaluate water management tools and options to maximize water resources and minimize the need for imported water from other

regions. GSWC understands the limited nature of water supply in California and is committed to optimizing its available water resources. This commitment is demonstrated through GSWC's use of water management tools throughout the company to promote the efficient use of water supplies from local sources, wherever feasible. Additionally, GSWC takes efforts to procure local reliable water supplies wherever feasible and cost effective. GSWC is a regular participant in regional water resources planning efforts as well as development of internal company water resource plans and robust water conservation programs.

GSWC has implemented a robust water conservation program, deployed through each region of the company. In an effort to expand the breadth of offered programs, GSWC partners with wholesale suppliers, energy utilities, and other agencies that support water conservation programs.

Chapter 2: System Description

Chapter 2 summarizes the Ojai System's service area and presents an analysis of available demographics, population growth projections, and climate data to provide the basis for estimating future water requirements.

The water system description requirements are detailed in the following section of the Act:

> *Section 10631*
>
> *(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.*

2.1 Area

The Ojai System is located in Ventura County and serves the City of Ojai, part of the unincorporated area east of the city of Ventura in Ventura County and part of the Meiners Oaks community to the west of Ojai. Figure 2-1 illustrates the customer service area of the Ojai System. The service area can generally be described as being bounded by San Antonio Creek to the east and south, Highway 33 to the west, and Topatopa Mountains to the north. The service area is primarily characterized by residential land use, with some commercial land use, including a few orchards and golf courses.

2.2 Demographics

The City of Ojai was chosen as demographically representative of the Ojai System. According to 2000 U.S. census data, the median age of Ojai's residents is 42.4 years. Ojai has average household size of 2.42 and a median household income of approximately $44,593.

Viewing the Ojai System map superimposed on Google Earth indicates there is land available for development. Preliminary information from the Ojai general plan was provided by the City of Ojai's Planning Department. This general plan indicates future redevelopment projects, including affordable multi-family housing units, may be implemented within Ojai's existing service area.

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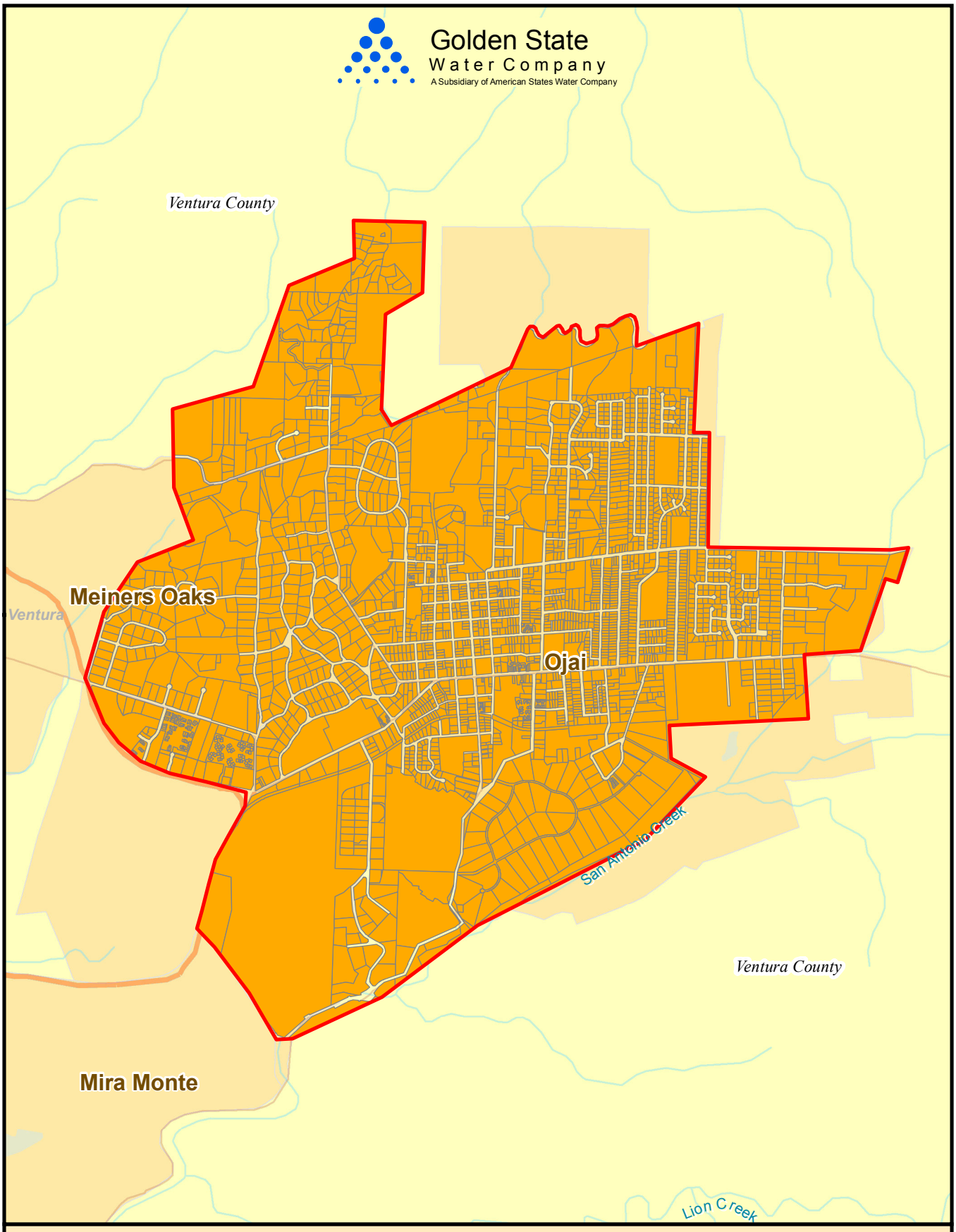

GOLDEN STATE WATER COMPANY
2010 Urban Water Management Plan
Ojai System, Customer Service Area
July 2010

Figure 2-1

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2.3 Population, Housing and Employment

Population, housing, and employment projections were developed for the Ojai System using the Southern California Association of Governments (SCAG) population, housing and employment data. SCAG last updated its projections for population, household, and employment growth through the year 2035 using the 2008 "Integrated Growth Forecasting" process for use in the 2008 Regional Transportation Plan (2008 RTP). SCAG's methodology is described below, followed by the derivation of population projections for the Ojai System. Previous and current projections utilize 2000 U.S. Census data.

SCAG is currently in the process of developing its 2012 Regional Transportation Plan (2012 RTP) which will utilize a new population projection model based using a 2010 baseline. In certain cases, growth rates using these preliminary data are significantly reduced from the 2008 model. The population, household, and employment projections in this document use the adopted 2008 RTP data. Future UWMP updates will be able to utilize 2012 RTP projections as well as 2010 Census data.

2.3.1 SCAG Population Projection Development Methodology

Population, housing, and employment data is derived from the 2000 U.S. Census, which forms a baseline for local data projections. SCAG applies a statistical cohort-component model and the headship rate to the 2000 U.S. Census data for regional, county, and household demographic projections. To evaluate the Ojai System, SCAG data was used in census tract form, the smallest geographic division of data that SCAG provides. SCAG projects sub county and census tract demographic trends using the housing unit method.

The Integrated Growth Forecasting process uses a variety of estimates and projections from the federal and state governments. Sources include the U.S. Department of Labor, Internal Revenue Service (IRS), U.S. Citizenship and Immigration Services, U.S. Department of Health and Human Services, California Department of Finance (DOF), California Employment Development Department, and information received through the Intergovernmental Review process. The detailed explanation of the population projection process can be found in the adopted SCAG 2008 Regional Transportation Plan, Growth Forecast Report for SCAG.

2.3.2 Historical and Projected Population

SCAG-derived census-tract projections were used to determine historical and projected population from 1997 to 2035. The Ojai System service area boundaries often contain multiple census tracts, many of which have boundaries that do not coincide exactly with service area boundaries. The population projection analysis consisted of superimposing service area boundaries over census tract boundaries, identifying the applicable overlapping census tracts, and developing a percentage estimate for each overlapping area. For a census tract 100 percent within the service area boundaries, it was assumed that 100 percent of the associated census tract population data was applicable to the Ojai System. For areas where the overlap was not exact, the area of overlap as a percentage was applied to the data to develop an estimate of applicable population. Appendix G, Table G-1 lists the census tracts with a corresponding estimate of what percent of each tract lies within the Ojai System. It was typically assumed that the various types of housing and employment distributed within a census tract are distributed uniformly within all parts of that census tract, unless maps indicated non-uniform concentrations. In these cases, population estimates were either increased or decreased as applicable to match the existing land use. Appendix G, Table G-2 contains all of the SCAG's

historic and projected demographic data for each census tract number from 2000 through 2035. Figure 2-2 details the census tracts within the Ojai System.

Annual estimates of historical population between 1997 and 2010 required for SBX7-7 are provided in Table 2-1. The population estimates were developed following DWR Technical Methodology 2: Service Area Population. GSWC is considered a Category 2 water supplier because they maintain a Geographic Information System (GIS) of their service area. The per-connection methodology described in Appendix A of Technical Methodology 2 was used since annual estimates of direct service area population from SCAG were not available. This method estimates annual population by anchoring the ratio of year 2000 residential connections to the year 2000 Census population. This ratio was then linearly scaled to active residential connections data to estimate population for the non-Census years in which water supply data was available: 1997 through 2010. The residential billing category includes traditional single-family residential connections; however since GSWC does not have a specific multifamily billing category that only encompasses the apartment complexes and other types of multi-family housing units, the ratio of year 2000 Census total population per residential connections was used.

Table 2-1: Ojai System Historical Population

Year	Service Area Population
1997	7,328
1998	7,351
1999	7,375
2000	7,399
2001	7,403
2002	7,401
2003	7,404
2004	7,404
2005	7,405
2006	7,499
2007	7,592
2008	7,685
2009	7,779
2010	7,873

As concluded from analysis of SCAG demographic data, the Ojai System had an estimated population of 7,873 in 2010 and is expected to reach 9,589 by 2035. A summary of historic and

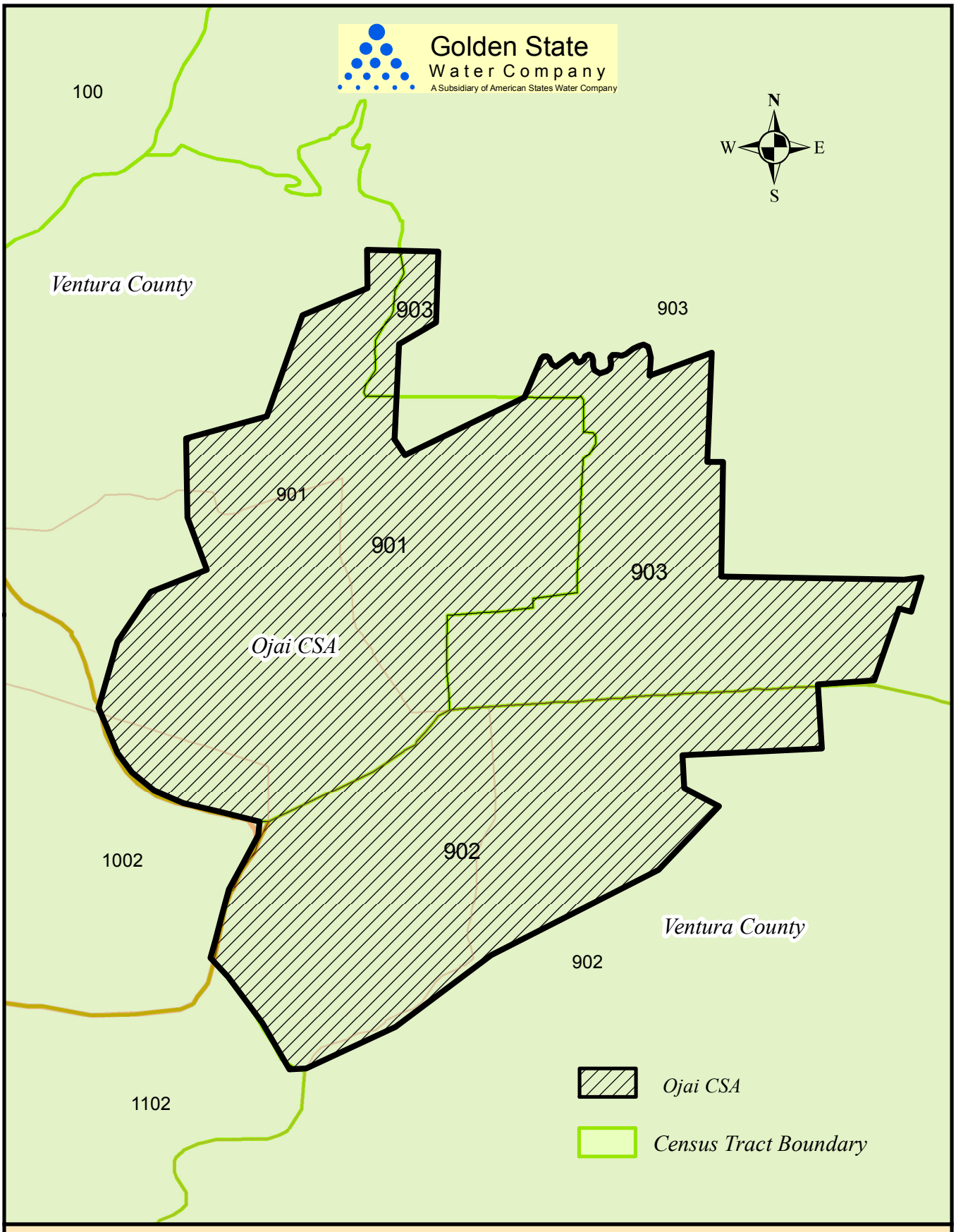
projected population, households, and employment within the Ojai System (based on SCAG growth rate data) is presented in Table 2-2 and illustrated in Figure 2-3

Table 2-2 Ojai System Historical and Projected Population

Year	Service Area Population	Service Area Household	Service Area Employment	Data Source
2005	7,405	2,892	5,006	GSWC
2010	7,873	3,109	5,491	GSWC
2015	8,276	3,346	5,878	SCAG
2020	8,706	3,541	6,232	SCAG
2025	9,068	3,703	6,537	SCAG
2030	9,385	3,848	6,790	SCAG
2035	9,589	3,985	7,015	SCAG

Notes:
1. This table is based on the DWR Guidebook Table 2.
2. Dashed line represents division between historic and projected data

In summary, from 2005 to 2010 the Ojai population increased 6.3 percent, which is a growth rate[1] of approximately 1.3 percent per year. By 2035, population is projected to increase by a total of 21.8 percent, from 7,873 in 2010 to 9,589 in 2035, which is a 0.9 percent growth rate per year. The number of households is expected to grow 28.2 percent during the same period, which equates to an annual household growth rate of 1.1 percent. Employment is expected to grow 27.8 percent during the same period, which equates to an annual employment growth rate of 1.1 percent. Areas with the highest projected growth increases are also the areas that will see the largest increase in water use.



GOLDEN STATE WATER COMPANY
2010 Urban Water Management Plan
Ojai System Customer Service Area with
Census Tract Boundary, July 2010

Figure 2-2

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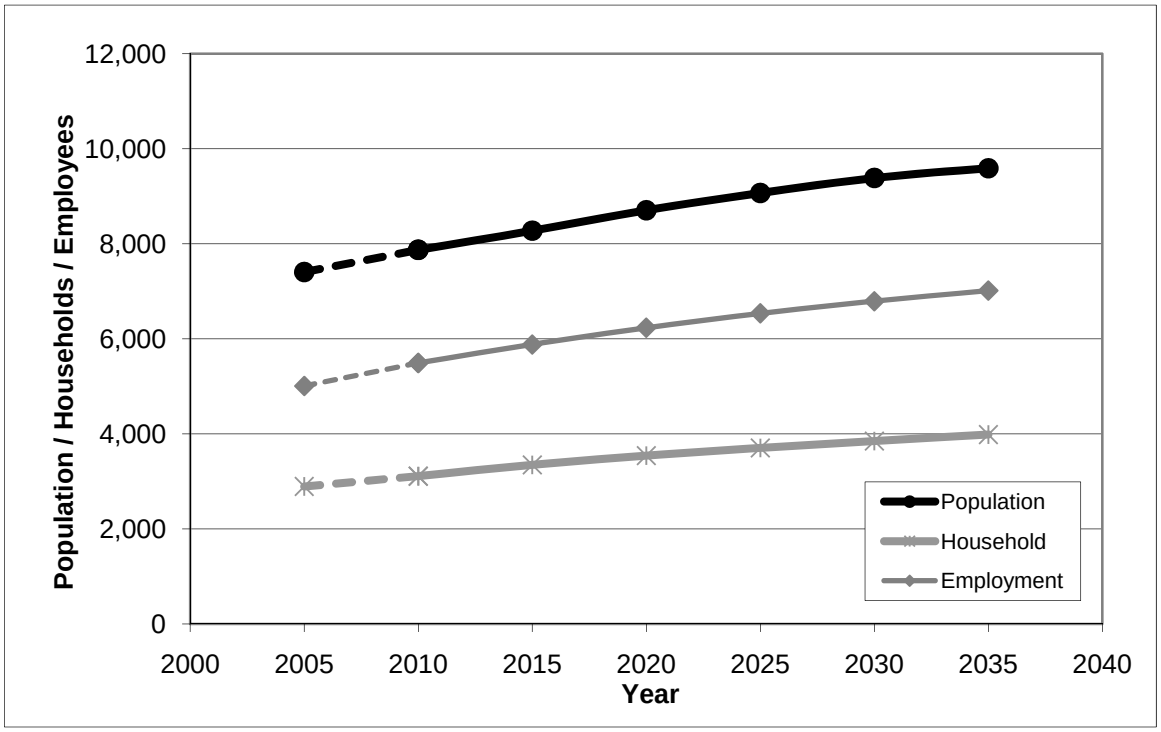

Figure 2-2 Historical and Projected Population, Household and Employment Growth within the Ojai CSA.

2.4 Climate

The Ojai System has cool, humid winters and moderately hot, dry summers. The Western Regional Climate Center (WRCC) web site (www.wrcc.dri.edu) has maintained historical climate records for the past 30 years for Ojai. Table 2-2 presents the average climate summary based on historical data for Ojai. In winter, the lowest average monthly temperature is approximately 36 degrees Fahrenheit while the highest average monthly temperature reaches approximately 91 degrees Fahrenheit in the summer. Figure 2-3 presents the monthly average precipitation based on 30 year historical data. The rainy season is from November to March. Monthly precipitation during the winter months ranges from 2 to 5 inches. Low humidity occurs in the summer months from May to October. The moderately hot and dry weather during the summer months typically results in moderately high water demand.

Similar to the WRCC in the Ojai area, the California Irrigation Management Information System (CIMIS) web site (http://www.cimis.water.ca.gov) tracks and maintains records of evapotranspiration (ETo) for select cities. ETo statistics used for this system come from the Ventura station, which is the closest station (15 miles) to the Ojai System. ETo is a standard measurement of environmental parameters that affect the water use of plants. ETo is given in inches per day, month, or year and is an estimate of the evapotranspiration of a large field of well-watered, cool-season grass that is four- to six-inches tall. The monthly average ETo is presented in inches in Table 2-3. As the table indicates, a greater quantity of water is

evaporated during May through August in correlation to high temperatures and low humidity, which may result in high water demand.

Table 2-3: Monthly Average Climate Data Summary for Ojai System

Month	Standard Monthly Average ETo[(2)] (inches)	Average Total Rainfall (inches)	Average Temperature (degrees Fahrenheit) Max	Min
January	2.2	5.00	66.6	35.9
February	2.6	5.00	67.9	38.1
March	3.2	3.50	70.2	40.0
April	3.8	1.42	73.9	43.1
May	4.6	0.40	77.4	46.9
June	4.7	0.07	83.4	50.2
July	5.5	0.02	90.9	54.5
August	4.9	0.04	91.4	54.2
September	4.1	0.28	88.7	52.1
October	3.4	0.66	82.1	46.7
November	2.5	1.82	74.8	40.3
December	1.9	3.16	67.9	36.4

Note:
Evapotranspiration (ETo) from http://www.cimis.water.ca.gov/cimis/welcom.jsp

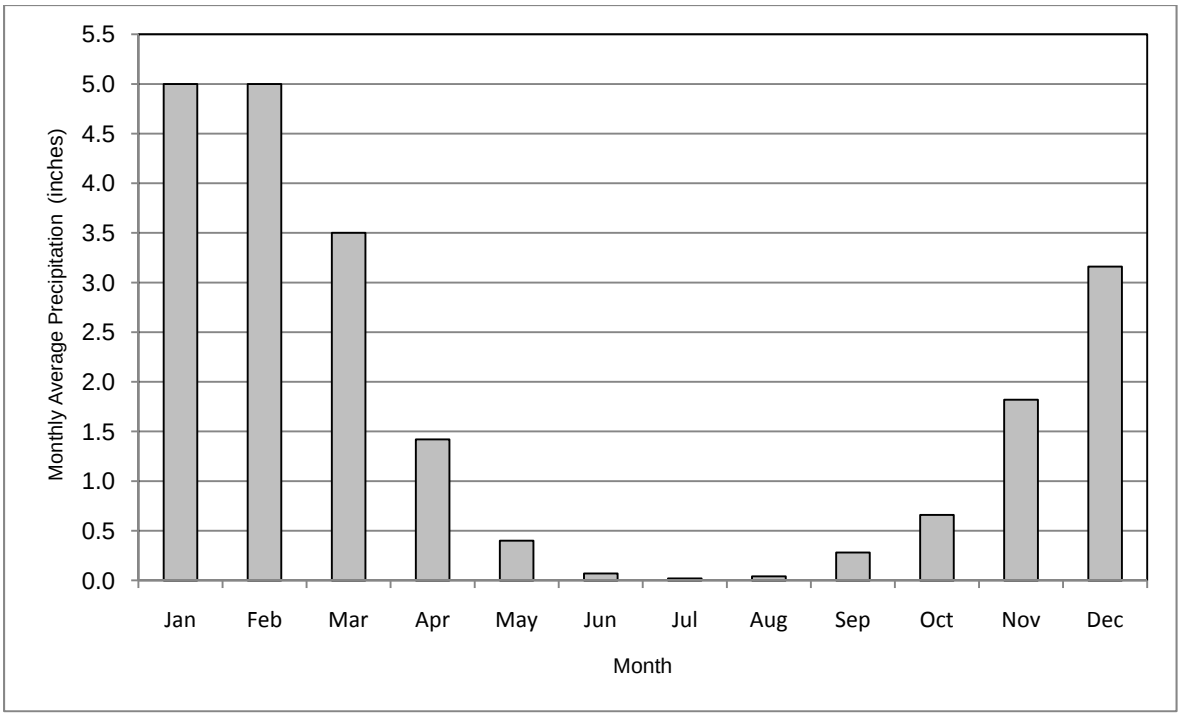

Figure 2-4: Monthly Average Precipitation in Ojai CSA based on 20 Year Historical Data.

Chapter 3: Water Use

Section 10631 (e) of the Act requires that an evaluation of water use be performed for the Ojai System. The Act states the following:

> *Section 10631*
>
> *(e)*
>
> *(1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water-use sectors including, but not necessarily limited to, all of the following uses:*
>
> *(A) Single-family residential*
> *(B) Multifamily*
> *(C) Commercial*
> *(D) Industrial*
> *(E) Institutional and governmental*
> *(F) Landscape*
> *(G) Sales to other agencies*
> *(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof*
> *(I) Agricultural.*
>
> *(2) The water-use projections shall be in the same five-year increments described in subdivision (a).*

In addition, Section 10631 (k) directs urban water suppliers to provide existing and projected water-use information to wholesale agencies from which water deliveries are obtained. The Act states the following:

> *Section 10631*
>
> *Urban water suppliers that rely upon a wholesale agency for a source of water, shall provide the wholesale agency with water-use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c), including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.*

In conjunction with projecting total water demand, each urban water retail supplier must develop urban water use targets and an interim urban water use target in accordance with Senate Bill SBx7-7. SBx7-7 amends the Act requiring statewide water savings of 20 percent by the year 2020. The bill sets specific methods for calculating both the baseline water usage and water use targets in gallons per capita day (gpcd).

Section 10608.20(e) states the following:

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

This chapter presents an analysis of water use data with the resulting projections for future water needs and water use targets in accordance with SBx7-7 for the Ojai System.

3.1 Historical Water Use

Historical water use data from 1994 to 2010 was analyzed in order to provide an overview of historical water usage trends for the Ojai System. Figure 3-1 shows the historical number of metered service connections and water use for the Ojai System from 1994 through 2010.

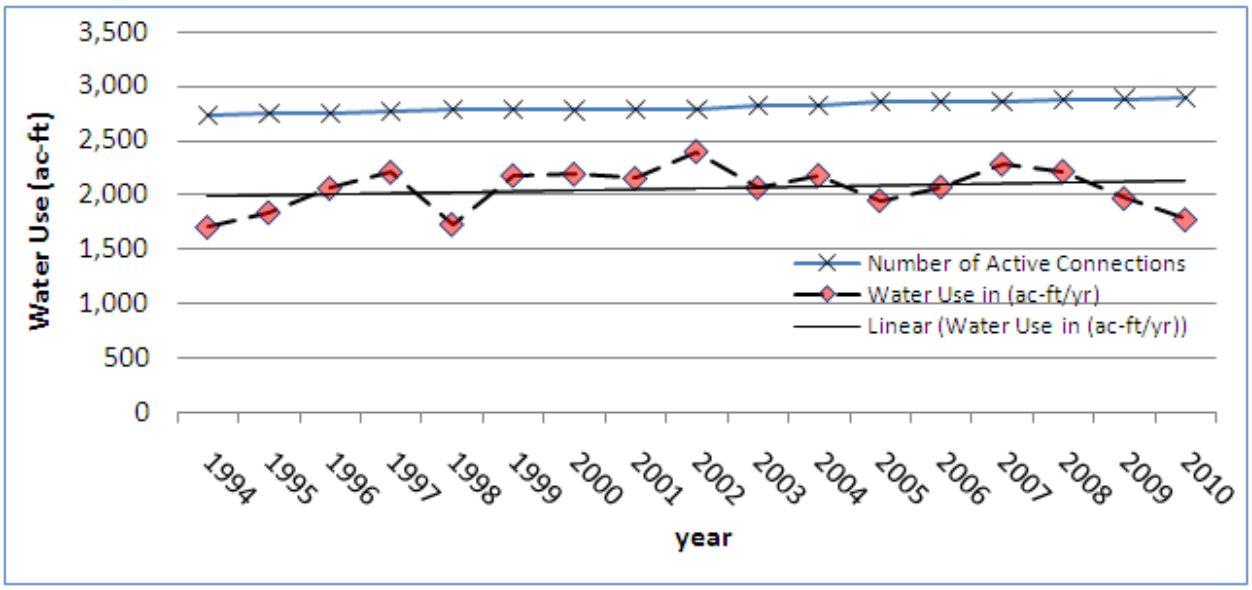

Figure 3-1: Historical Number of Metered Service Connections and Water Use

Figure 3-1 shows a decline of approximately 13 percent per year in water use beginning in 2007. A review of similar data from other systems suggests the decline in water use has been widespread and is not isolated to the Ojai System. The decline in water use from 2007 to 2009 is not yet fully understood, but may be a result of several factors including mild weather, a statewide drought that forced mandatory water reductions, and an economic downturn that has caused many businesses to close and increased housing vacancies. Table 3-1 shows the historical water use by customer type.

Table 3-1: Historical Water Use by Customer Type								
	Water Use (ac-ft) by Customer Type							
YEAR	Commercial	Industrial	Institutional/ Government	Landscape	Multi Family	Other	Single Family	Total
1994	137	2	8	13	66	23	1,389	1,638
1995	134	2	81	79	66	26	1,457	1,844
1996	188	2	97	99	76	26	1,575	2,064
1997	146	2	108	115	85	25	1,730	2,210
1998	154	4	82	49	74	32	1,342	1,737
1999	218	3	96	119	97	36	1,551	2,120
2000	217	4	82	295	110	42	1,444	2,193
2001	261	4	85	198	116	44	1,445	2,153
2002	266	2	112	247	125	47	1,599	2,398
2003	178	1	101	181	112	44	1,453	2,070
2004	169	2	93	205	124	45	1,544	2,182
2005	167	2	69	178	123	43	1374	1,954
2006	175	2	75	190	136	115	1,384	2,077
2007	178	2	108	241	153	71	1,531	2,283
2008	201	2	91	206	142	123	1,454	2,218
2009	162	1	78	198	124	54	1,356	1,973
2010	263	2	23	135	108	30	1218	1779

3.2 Water Use Targets

This section includes documentation of the water use targets commensurate with enactment of SBx7-7. The 2010 UWMP update cycle is the first in which such targets have been documented. The projected water use for each urban water supplier is required to be reduced by a total of up to 20 percent by the year 2020 from a calculated baseline gpcd as required by SBx7-7. The steps described throughout this section follow the guideline methodologies developed by DWR over the past year, as documented in Section D of the Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan (DWR Guidebook) issued March 2011. The three overall steps to determine the 2020 water use target are as follows:

- Step 1 – Calculate the baseline per capita water use, using the required methodologies.

- Step 2 – Calculate the per capita reduction using at least one of the four methodologies (including the minimum reduction target – which is a provision included to ensure all agencies achieve a minimum level of water savings).

- Step 3 – Select the target reduction methodology and set interim (2015) and compliance (2020) water use targets. The chosen methodology is the responsibility of the water supplier and may be changed in 2015.

The Act now stipulates that the state shall review the progress made towards reaching the statewide water savings targets as reported in the 2015 UWMP updates. Currently, no single urban water supplier is required to conserve more than 20 percent; however, there are provisions in the law that could require additional conservation after 2015 if it is found that the program is not on track to reach 20 percent statewide water savings by 2020.

3.2.1 Baseline Per Capita Water Use

The first step in the process of determining the water use target is calculation of the baseline per capita water use (baseline gpcd). The following three baseline gpcd calculations identified in SBx7-7 were evaluated for the Ojai System:

1. Baseline Method 1 - Average water use over a continuous 10-year period ending no earlier than December 31, 2004 and no later than December 31, 2010.

2. Baseline Method 2 - For retailers with at least 10 percent of 2008 demand served by recycled water (either retail or wholesale-provided), this calculation may be extended to include an additional five years ending no earlier than December 31, 2004 and no later than December 31, 2010.

3. Baseline Method 3 - Estimate of average gross water use reported in gpcd and calculated over a continuous five-year period ending no earlier than December 31, 2007 and no later than December 31, 2010.

To calculate the baseline gpcd, service area population estimates were utilized in addition to actual water use within the Ojai System. Annual population between the years 1994 and 2010 was calculated using the 2000 U.S. Census population as the basis based on the SCAG model described in Chapter 2. The number of residential connections (single and multi family) for each year was tabulated based on water use records. The ratio of the number of residential connections to population was calculated for the year 2000. This ratio was then linearly scaled to active connections data to estimate population for the non census years in which water supply data was available: 1999 through 2010.

The baseline gpcd water use methods 1 and 3 were evaluated using water supply data for the years ending December 31, 1999 through December 31, 2010. The base water use was calculated for each year commencing with 1999 as this was the first year with production data records available. The Ojai system does not currently receive any recycled water; therefore method 2 is not applicable. Table 3-2 below presents the base period ranges, total water deliveries and the volume of recycled water delivered in 2008; in order to determine the number of years that can be included in the base period range. Also shown are the actual start and end years for the selected base period range.

Table 3-2: Base Period Ranges			
Base	**Parameter**	**Value**	**Units**
10-year base period	2008 total water deliveries	2,400	Ac-ft
	2008 total volume of delivered recycled water	0	Ac-ft
	2008 recycled water as a percent of total deliveries	0	Percent
	Number of years in base period	10	Years
	Year beginning base period range	1999	
	Year ending base period range	2008	
5-year base period	Number of years in base period	5	Years
	Year beginning base period range	2004	
	Year ending base period range	2008	

Note:
Table format based on DWR Guidebook Table 13

The average annual daily per capita water use in gpcd is provided in Table 3-3.

Table 3-3: 1999-2010 Average Annual Daily Use			
Calendar Year	**Estimated System Population**	**Gallons / Day**	**Annual Daily per Capita Water Use, gpcd**
1999	7,375	2,277,683	309
2000	7,394	2,348,605	317
2001	7,403	2,198,091	297
2002	7,401	2,463,685	333
2003	7,404	2,179,945	294
2004	7,404	2,221,212	300
2005	7,405	1,999,029	270
2006	7,499	2,065,708	275
2007	7,592	2,364,690	311
2008	76687,685	2,142,684	279
2009	78737,779	2,078,352	267
2010	7,873	1,792,019	228

Notes:
1. Table format based on DWR Guidebook Tables 14 and 15

The 10-year averages available for GSWC to select are presented in Table 3-4; and the 5-year rolling averages are shown in Table 3-5. The 1999-2008 10-year and 20082003-2007 5-year average base daily gpcd usages of 299 gpcd and 290 gpcd respectively were selected.

Table 3-4: 10-Year Average Base Daily Per Capita Water Use (Method 1)

10-Year Period	Average Base Daily per Capita Water Use (gpcd)
1999-2008	299
2000-2009	294
2001-2010	285

Table 3-5: 5-Year Average Base Daily Per Capita Water Use (Method 3)

5-Year Period	Average Base Daily per Capita Water Use (gpcd)
2003-2007	290
2004-2008	287
2005-2009	280
2006-2010	272

3.2.2 Urban Water Use Target Calculation

Retail suppliers must identify their demand reduction targets by utilizing one of four compliance methods identified in SBx7-7. The four compliance methods are as follows:

- Compliance Method 1 – 80 percent of baseline gpcd water use.
- Compliance Method 2 – The sum of the following performance standards: indoor residential use (provisional standard set at 55 gpcd); plus landscape use, including dedicated and residential meters or connections equivalent to the State Model Landscape Ordinance (70 percent of reference evapotranspiration (ETo); plus 10 percent reduction in baseline commercial, industrial institutional (CII) water use by 2020.
- Compliance Method 3 – 95 percent of the applicable state hydrologic region target as identified in the 2020 Conservation Plan (DWR, 2010).
- Compliance Method 4 – A provisional method identified and developed by DWR through a public process released 16 February 2011, which aims to achieve a cumulative statewide 20 percent reduction. The method assumes water savings will be obtained through metering of unmetered water connections and achieving water conservation measures in three water use categories: (1) indoor residential, (2) landscape, water loss and other unaccounted for water and (3) commercial, industrial and institutional (CII). GSWC will not be bound to use this new method if it results in a target that is higher than 20 percent.

GSWC elected to evaluate Methods 1 and 3 for selecting urban water use targets for the 2010 plan. The following provides an explanation of the target calculations; and a summary of the interim and compliance water use targets.

Compliance Method 1 Calculation Summary

The compliance method 1 2020 water use target was calculated by multiplying the base daily gpcd by 80 percent. A 20 percent reduction in baseline use would require a 2020 reduction of 60 gpcd as shown in Table 3-6. The 2015 interim target would be 269 gpcd and compliance target of 239 gpcd by 2020; Table 3-6 provides a summary of the reduction requirements.

Table 3-6: 2020 Water Use Target Method 1 Calculation Summary

Description	Units	Baseline	2015 Interim Target	2020 Compliance Target
Per Capita Water Use	**gpcd**	**299**	**269**	**239**
Percent Reduction	%	n/a	10%	20%

Compliance Method 3 Calculation Summary

The compliance Method 3 2020 water use target was calculated by multiplying the respective hydrologic region target by 95 percent. The Ojai system is located in the South Coast region (Region 4), which has a hydrologic region target of 149 gpcd. Ninety-five (95) percent of the Region 4 hydrogologic region target results in a 2020 water use target of 142 gpcd. Since the baseline of 299 gpcd is greater than 95 percent of the hydrologic regional target of 142 gpcd, a review of the minimum reduction target is not triggered per DWR methodologies.

Table 3-7 presents the results of the Method 3 calculation:

Table 3-7: 2020 Water Use Target Method 3 Calculation Summary

Description	Units	Baseline	2015 Interim Target	2020 Compliance Target
Per Capita Water Use	**gpcd**	**299**	**221**	**142**
Percent Reduction	%	n/a	26%	53%

Minimum Compliance Reduction Target

Systems with a 5-year baseline per capita water use of greater than 100 gpcd must calculate a minimum water use reduction, which the 2020 water use target cannot exceed. The minimum water use reduction compliance target is 95 percent of the 5-year rolling average base daily per capita water use (ending no earlier than December 31, 2007, and no later than December 31,

2010). The minimum 2020 reduction compliance target for the Ojai System is 276 gpcd, as presented in Table 3-8 below:

Table 3-8: Minimum 2020 Reduction Calculation Summary					
Description	**Units**	**5-Yr Average**	**2015 Interim Target**	**2020 Compliance Target**	
Minimum allowable 2020 Target	**gpcd**	**290**	**283**	**276**	

3.2.3 Interim and Compliance Water Use Targets

The interim and compliance water use targets are provided per Section 10608.20(e) of the Act. Since both the Method 1 and 3 compliance targets are less than the minimum reduction; compliance Method 1 was selected by GSWC for the Ojai System. As a result, the 2020 SBX7-7 compliance target for the Ojai System is 239 pgcd and the 2015 interim water use target is 269 gpcd. The implementation plan for achieving these targets is described in Chapter 4, Recycled Water section and Chapter 7, Demand Management Measures.

Table 3-9: SBX7-7 Water Use Reduction Targets			
Baseline	**2015 Interim Target**	**2020 Compliance Target**	**Units**
299	**269**	**239**	**gpcd**

3.3 Projected Water Use

Growth projections for the number of service connections and water use were calculated for the year 20102015 through 2035 in five-year increments. Future water demands were estimated using two different methods, a population-based approach and a historical-trend approach, in order to present a projection range reflecting the inherent uncertainty in growth trends. Additionally, demand projections are provided showing a scenario where the Ojai System fully meets water use target reductions by 2020 for comparison to current per capita water use trends. Detailed descriptions of how the population-based and historical-trend projections were calculated are provided below.

The range established between these two approaches is intended as supplemental information; all connection and demand estimates recommendations use the population-based growth rate projections. The historical-trend projections are provided as ancillary information only.

Figure 3-2 shows the historical data and projected number of metered service connections for the Ojai System from 1994 through 2035 employing the population-based and historical trend methods. Figure 3-3 shows the historical and projected water use for the Ojai System from 1994 until 2035.

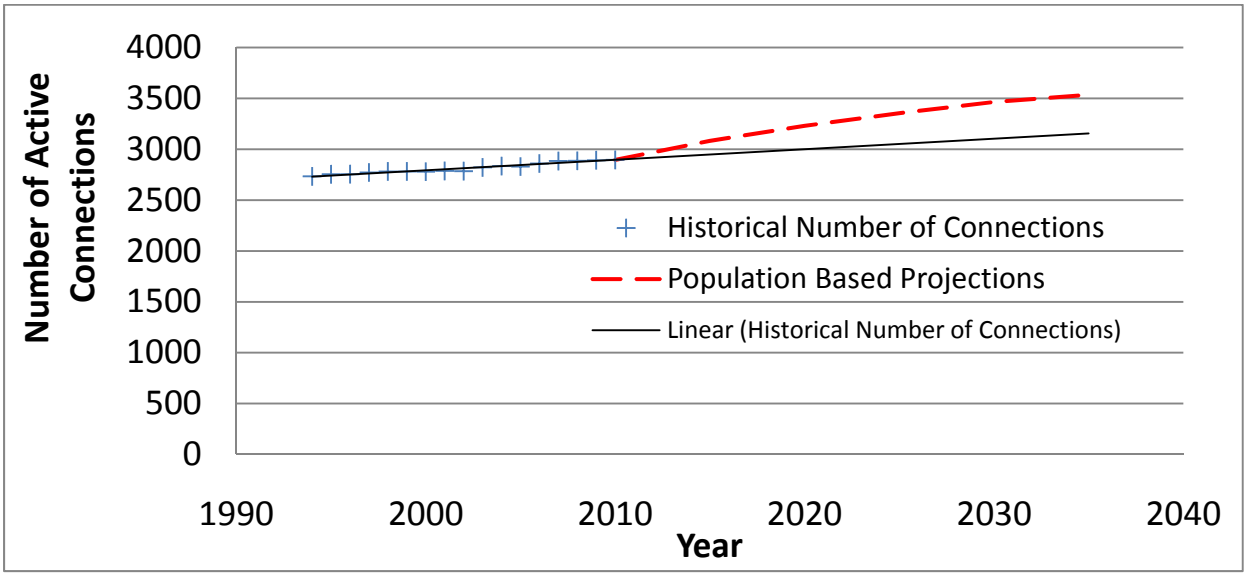

Figure 3-2: Historical and Projected Number of Metered Service Connections

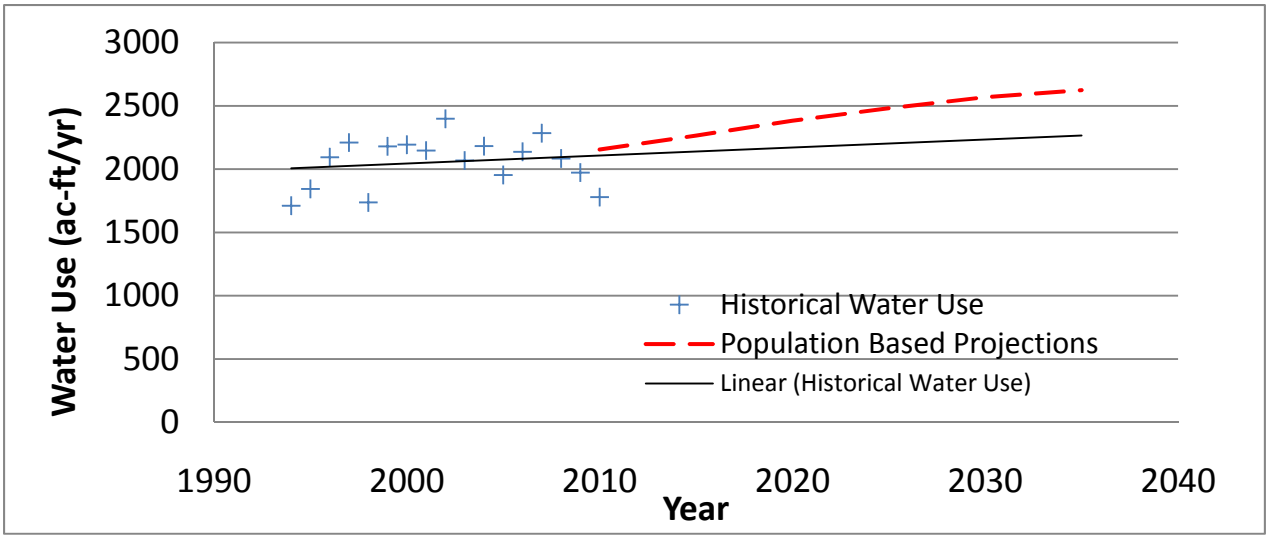

Figure 3-3: Historical Water Use and Future Water Use Projections

Historical water use records from 1994 through 2010 were analyzed to generate estimates of future water demands. The customer billing data for the system consists of annual water sales data. The water sales data was sorted by customer type using the assigned North American Industry Classification System (NAICS) codes. Then the sorted water sales data was further

grouped into the following eight categories: single-family, multi-family, industrial, commercial, institutional/government, landscape, agriculture, and others.

For each category, a water use factor was calculated in order to quantify the average water used per metered connection. For a given customer type, the unit water use factor is calculated as the total water sales for the category divided by the number of active service connections for that category. The unit water use factors for each customer type were averaged over the data range from 1994 through 2010 in order to obtain a representative water use factor that can be used for water demand projections by customer type. Table 3-10 presents the water use factors calculated for each customer category.

Table 3-10: Water Use Factors for the Ojai System

	Account Category							
	Single Family	Multifamily	Commercial	Industrial	Institutional/ Government	Landscape	Agriculture	Other[2]
Water Use Factor[1]	0.58	1.75	1.53	.31	1.85	3.39	0	0

Notes:
1. Based on customer water use data for calendar years 1994-2010.
2. Other accounts for any service connections not included in any other category, including idle or inactive connections.

The population-based water use projections are based on the population and housing growth rates described in Chapter 2. SCAG household projections were used to determine the growth in single-family and multi-family service connections for the years 2015, 2020, 2025, 2030, and 2035. For example, the percent growth rate in households from the year 2010 to year 2015 was multiplied by the number of residential service connections in 2010 to obtain a projection of the number of connections in the year 2015. Similarly, employment growth projections were used to determine the growth for commercial, industrial, institutional/government, landscape, and agriculture service connections. The population-based projected water use was then calculated by multiplying the number of projected active service connections for each customer category with the corresponding customer average water use factor calculated above.

The historical-trend water use projections are based on a linear projection of the historical number of metered service connections. The average growth rate established by this historical trend was applied to the number of connections in each customer category to project the future number of service connections. The historical-trend projected water use was then calculated by multiplying the number of projected active service connections for each customer category with the corresponding customer average water use factor calculated above.

Figure 3-4 shows the population based water use projections by customer type. The population-based projections of the number of service connections, and the resulting water demand, are provided in Table 3-11.

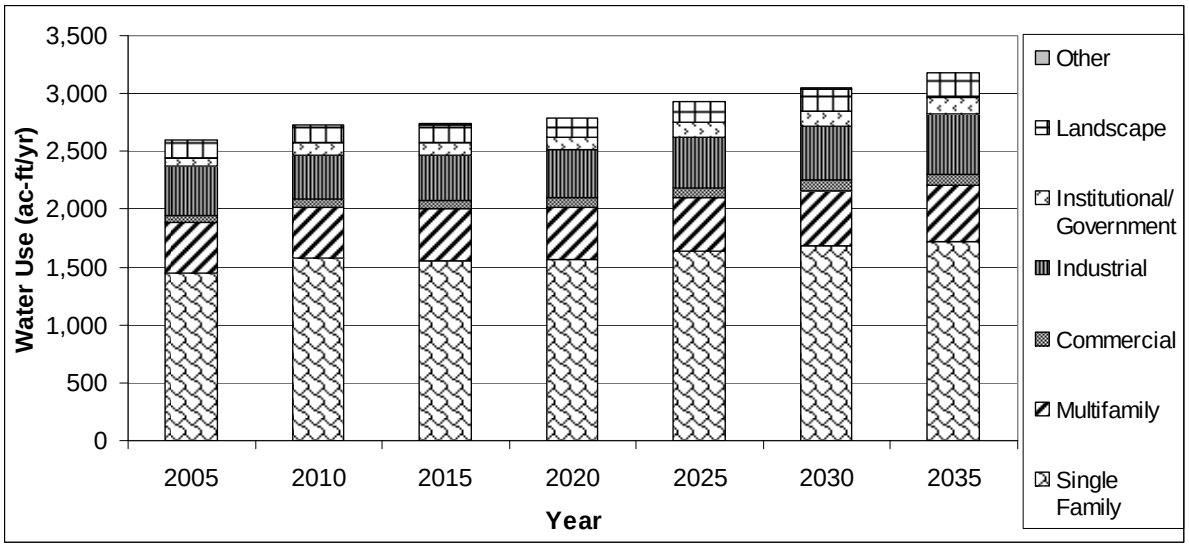

Figure 3-4: Projected Water Use by Customer Type

Table 3-11:		Projections of the Number of Service Connections and Water Use for the Ojai System								
		Account Category								
Year	Projection Type	Single Family	Multifamily	Commercial	Industrial	Institutional/ Government	Landscape	Agriculture	Other[3]	Total
2005[2]	*No. of Accounts*	2,457	72	243	3	14	41	0	2	2,832
	Water Use (ac-ft)	1,373	123	256	1	24	178	0	1	1,955
2010	*No. of Accounts*	2,495	75	264	4	15	43	0	3	2,899
	Water Use (ac-ft)	1,218	108	293	2	23	135	0	1	1,780
2015	*No. of Accounts*	2,606	76	268	3	16	41	0	3	3,012
	Water Use (ac-ft)	1,548	133	414	2	12	138	0	1	2,248
2020	*No. of Accounts*	2,741	80	282	3	17	43	0	3	3,168
	Water Use (ac-ft)	1,628	140	436	1	32	145	0	1	2,384
2025	*No. of Accounts*	2,855	83	293	3	18	45	0	3	3,300
	Water Use (ac-ft)	1,696	146	454	1	33	151	0	1	2,483
2030	*No. of Accounts*	2,955	86	304	3	19	47	0	3	3,415
	Water Use (ac-ft)	1,755	151	470	1	34	157	0	1	2,569
2035	*No. of Accounts*	3,019	88	310	3	19	48	0	3	3,489
	Water Use (ac-ft)	1,793	155	480	1	35	160	0	1	2,625

Notes:
1. This table is based on the DWR Guidebook Tables 3 through 7.
2. Based on calendar year.
3. Other accounts for any service connections not included in any other category, including idle or inactive connections.
4. All connections are metered.

3.4 Sales to Other Agencies

There are no sales to other agencies for the Ojai System; therefore, Table 3-12 has intentionally been left blank.

Table 3-12: Sales to Other Agencies in ac-ft/yr

Water Distributed	2000 (2)	2005	2010	2015	2020	2025	2030	2035
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:
1. This table is based on the DWR Guidebook Table 9.
2. Based on calendar year.

3.5 Other Water Uses and System Losses

In order to estimate total water demand, other water uses, as well as any water lost during conveyance, must be added to the customer demand. California regulation requires water suppliers to quantify any additional water uses not included as a part of water use by customer type. There are no other water uses in addition to those already reported in the Ojai System.

System losses must be incorporated when projecting total water demand. System losses (also known as non-revenue water) are defined as the difference between annual water production and annual sales. Included are system losses (due to leaks, reservoir overflows, or inaccurate meters), and water used in operations such as system flushing and filter backwashing. GSWC does not tabulate system losses separately from other water uses such as operations. In the Ojai System, from 1999 through 2009, system losses have averaged approximately Thirteen (13) percent of total production; therefore, this rate was incorporated projections. Table 3-13 provides a summary of projected system losses in the Ojai System.

Table 3-13: Additional Water Uses and Losses in ac-ft/yr

Water-Use Type	2005 (2)	2010	2015	2020	2025	2030	2035
Other Water Uses	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Unaccounted-for System Losses(3)	284	227	339	356	371	384	392
Total	284	227	339	356	371	384	392

Notes:
1. This table is based on the DWR Guidebook Table 10.
2. Based on calendar year.
3. Unaccounted-for water includes system losses due to leaks, reservoir overflows, and inaccurate meters, as well as water used in operations.

3.6 Total Water Demand

As described above, other water uses, as well as any water lost during conveyance, must be added to the customer demand in order to project water demand for the Ojai System. Although there are no other water uses contributing to the total water demand in the Ojai System, system losses must be incorporated into the total water demand. Table 3-14 summarizes the projections of water sales, system losses, and total water demand through the year 2035.

The projected water sales in the remainder of the analysis, including Table 3-14, are calculated using the population-based projections for water use. Two total water demand values are provided: baseline and conservation. The baseline demands projections below do not include water use reductions due to either additional implementation of Demand Management Measures (DMM) or other water use reductions. Conservation-based demand projections are provided for reference purposes and assume full compliance with the SBX7-7 interim and compliance targets identified in this chapter. Baseline demands are used for supply reliability evaluation purposes throughout this UWMP in order to provide a conservative estimate of water supplies that may be required to meet system demands for the next twenty five years. Table 3-14 shows the projected total water demand through 2035.

Table 3-14: Projected Water Sales, Unaccounted-for System Losses, and Total Water Demand in ac-ft/yr

Year	Projected Water Sales	System Losses	Total Water Demand Baseline	Conservation to Meet SBx7-7	Total Water Demand with SBX7-7 compliance
2005[(2)]	1,955	284	2,239	0	2,239
2010	1,780	227	2,007	0	2,007
2015	2,266	339	2,605	111	2,494
2020	2,384	356	2,740	409	2,331
2025	2,483	371	2,854	426	2,428
2030	2,569	384	2,953	440	2,513
2035	2,625	392	3,017	450	2,567

Notes:
1. This table is based on the DWR Guidebook Table 11.
2. Based on calendar year.

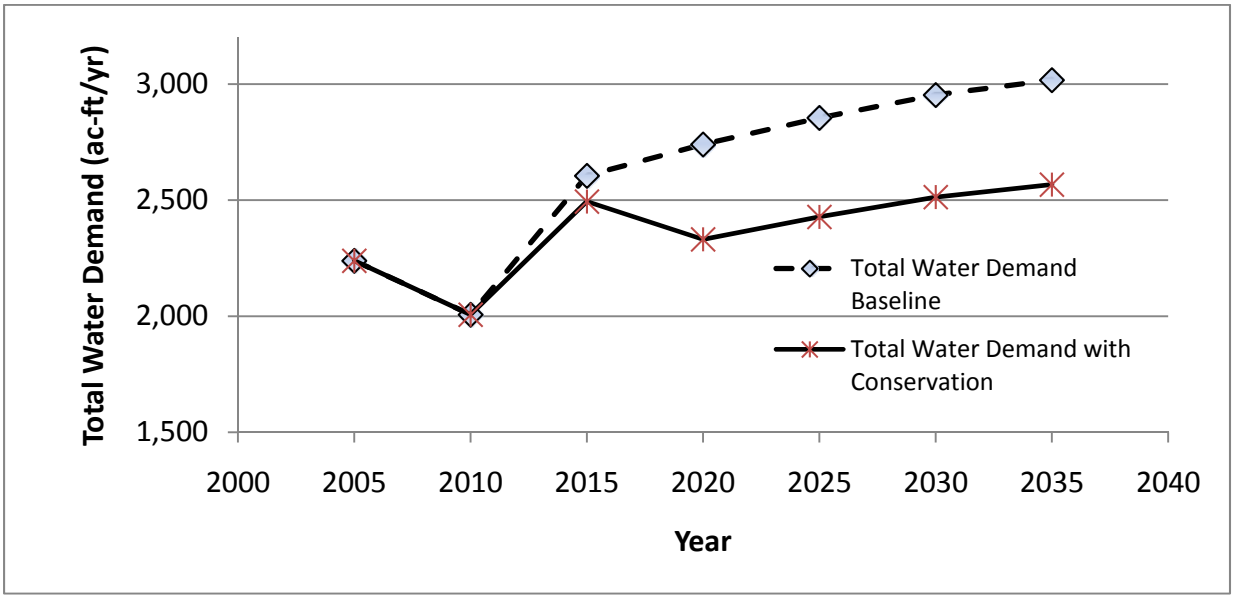

Figure 3-5: Projected Total Water Demand

3.7 Data Provided to Wholesale Agency

GSWC provided the following projected water use data to the Casitas Municipal Water District, its wholesale water supplier for the Ojai System, as summarized in Table 3-15. As required per section 10631(k), the supporting documentation providing the water use projections to the wholesale agency is included in Appendix I.

Table 3-15: Summary of Ojai System Data Provided to Casitas in ac-ft/yr

Wholesaler	Contracted Volume	2010	2015	2020	2025	2030	2035
CMWD	N/A	265	384	404	617	640	652

Note:
This table is based on the DWR Guidebook Table 12.

3.8 Disadvantaged Community Water Use Projections

Section 10631.1 (a). Include projected water use for single-family and multi-family residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

Senate Bill 1087 requires that water use projections of a UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier.

Housing elements rely on the Regional Housing Needs Allocation (RHNA) generated by the State Department of Housing and Community Development (HCD) to allocate the regional need for housing to the regional Council of Governments (COG) (or a HCD for cities and counties not covered by a COG) for incorporation into housing element updates. Before the housing element is due, the HCD determines the total regional housing need for the next planning period for each region in the state and allocates that need. The COGs then allocate to each local jurisdiction its "fair share" of the RHNA, broken down by income categories; very low, low, moderate, and above moderate, over the housing element's planning period.

The City of Ojai Draft Housing Element was last updated July 29, 2009. A lower income house is defined as 80 percent median income, adjusted for family size. The city's housing element identifies the target number of low income households in the City from 2006 to 2014 as 15 percent extremely low income, 11 percent very low income and 20 percent low income households. However, it is unknown what percentage of the low income and very low income households are within GSWC's Ojai service area. For this reason, it is not possible to project water use for lower income households separate from overall residential demand. However, to remain consistent with the intent of the SB-1087 legislation and also to comply with the UWMP Act, an effort has been made to identify those water use projections for single and multi-family households based on the aggregate percentage of the extremely low, very low and low income categories. 46 percent was used to estimate the lower income demand projections as shown in Table 3-16Table 3-16 below.

Table 3-16: Lower Income Demand Projections in ac-ft/yr

	2015	2020	2025	2030	2035
Single -Family Residence	152	189	220	247	265
Multi-Family Residence	12	15	17	20	22
Total	164	204	237	267	287

Note:
This table is based on the DWR Guidebook Table 8.

GSWC will not deny or condition approval of water services, or reduce the amount of services applied for by a proposed development that includes housing units affordable to lower income households unless one of the following occurs:

- GSWC specifically finds that it does not have sufficient water supply.
- GSWC is subject to a compliance order issued by the State 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: Water Supply

A detailed evaluation of water supply is required by the Act. Sections 10631 (b) through (d) and (h) of the Act state the following:

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

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

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.

For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

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

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

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

(1) An average water year.

(2) A single dry water year.

(3) Multiple dry water years.

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

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

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single dry, and multiple dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

This chapter addresses the water supply sources of the Ojai System. The following chapter provides details in response to those requirements of this portion of the Act.

4.1 Water Sources

GSWC obtains its water supply for the Ojai System from local groundwater from the Ojai Valley Basin (Ojai Basin) and purchased water from the Casitas Municipal Water District (Casitas). Casitas obtains its water supply from Lake Casitas. Casitas then conveys this treated surface water to GSWC's Ojai System. Surface water is an important component to the Ojai System's overall water supply. However, groundwater is the major source of water supply for the Ojai System. The surface water supply provides GSWC operational flexibility and reliability should the groundwater supply be impacted.

Groundwater currently is pumped from a total of five wells in the Ojai Basin. These wells have a current total active capacity of 2,730 gpm (4, 404 ac-ft/yr). Between 2005 and 2010 the actual groundwater production averaged 1,826 ac-ft/yr.

Water purchased from Casitas is delivered to the Ojai System through the following connections:

- Montgomery and Grand connection with a design capacity of 1,350 gallons per minute (gpm)
- Sierra and Cuyama connection with a design capacity of 900 gpm
- Montana and Cuyama connection with a design capacity of 900 gpm.

These connections have a combined active design capacity of 3,150 gpm (5,083 ac-ft/yr). In addition, GSWC has an emergency connection with Casitas at the Ojai Valley Inn, which is only used for fire service.

The current and planned water supplies needed by GSWC for the Ojai System are summarized in Table 4-1. There is presently no use of recycled water in the Ojai System. For more information on recycled water please see Section 4.7.

Table 4-1: Current and Planned Water Supplies for the Ojai System in ac-ft/yr

Source	2010	2015	2020	2025	2030	2035
Purchased water from Casitas	265	391	411	428	443	453
Groundwater(1)	1,741	2,214	2,329	2,426	2,510	2,564
Recycled water	0	0	0	0	0	0
Total	2,007	2,605	2,740	2,854	2,953	3,017

Notes:
1. Table format based on DWR Guidebook Table 16
2. 2010 water supplies based on actual production records

4.2 Groundwater

The Ojai System is supplied by five wells located in the Ojai Basin. The Ojai Basin Groundwater Management Agency is responsible for managing the Ojai groundwater basin and, working with the well operators in the basin, for conserving that groundwater.

4.2.1 Ojai Basin

The Ojai Basin has a surface area of approximately 6,830 acres (10.7 square miles). It is bounded by nonwater-bearing Tertiary rocks on the west and east, by the Santa Ana Fault and the Sulphur Mountain Range on the south, and by Black Mountain and the Topatopa Mountains on the north (DWR, 2003).

The water-bearing units are Recent and Pleistocene alluvium with some water found in fractures and interstices of underlying older Tertiary sedimentary rocks (DWR, 2003). The alluvium consists of sand, gravel and clay (DWR, 2003). The alluvium is estimated to be 700 feet thick near the center of the basin (SWRB, 1953).

The Ojai Basin is generally unconfined while some areas are locally confined. During periods of high water levels, artesian conditions have been observed for wells located in the southwestern portion of the Basin. Groundwater generally flows to the west and south with convergence near the outflow of San Antonio Creek.

Recharge from the Ojai Basin is generally from precipitation and percolation of surface waters through alluvial channels. The Ojai Basin tends to be quickly recharged during wet periods and depleted during dry periods because of the relatively small storage capacity (SWRB, 1953).

The total groundwater storage capacity has been estimated to be around 83,000 ac-ft (SGD, 1992). The Ojai Basin was estimated to be about 75 to 80 percent full in 1999 through 2003 (DWR, 2003 and Ojai Basin Groundwater Management Agency, 2003). In 1992, a study conducted for the Ojai Basin Groundwater Management Agency (OBGMA) estimated the operational safe yield to be 6,000 ac-ft/yr. The operational yield of the basin was estimated by evaluating hydrologic and land use data during a base period from 1975 through 1991 (SGD, 1992).

Water levels in wells in the Ojai Basin tend to respond to seasonal variability, with corresponding fluctuations during dry and wet periods, especially in the eastern part of the basin (DWR, 2003). Recent seasonal peak water levels across the basin generally occur over a narrower range than in the past. This is likely a result of increased volumes of purchased water delivered into the basin (SGD, 1992).

4.2.2 Ojai Basin Management

In 1991, the California Legislature adopted the Ojai Ground Water Basin Management Act (Senate Bill 534), creating the Ojai Basin Groundwater Management Agency (OBGMA). The OBGMA has the statutory authority to monitor and manage groundwater use in the Ojai Basin. Well owners report usage to the OBGMA and the organization compiles data on overall basin usage, aquifer supply, and water quality. The OBGMA has the power to adopt and enforce ordinances related to groundwater management, including exports from the Ojai Basin.

Table 4-2 shows the wells in the Ojai System along with the associated design well capacity. The total design well capacity for GSWC's Ojai System is 2,730 gpm (4,404 ac-ft/yr).

Table 4-2: Well Name and Capacity		
Well Name	**Well Capacity (gpm)**	**Well Capacity (ac-ft/yr)**
Gorham No. 1	800	1,290
Mutual No. 4	450	726
Mutual No. 5	500	807
San Antonio No. 3	430	694
San Antonio No. 4	550	887
Total Capacity	2,730	4,404
Active Capacity	2,730	4,404

The annual volume of groundwater produced from the Ojai System from 2005 to 2010 is summarized in Table 4-3.

Table 4-3: Groundwater Pumping History by the Ojai System (2005 to 2010) in ac-ft						
Basin Name	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Ojai Valley	1,947	1,817	1,963	1,735	1,751	1,742
Percent total water supply	87%	79%	74%	72%	75%	87%

Notes:

1. Table format based on DWR Guidance Document Table 18
2. Years are reported in calendar years (January 1 – December 31)

Table 4-4 shows the projected groundwater pumping amounts by the Ojai System. Groundwater is pumped from the five wells in the Ojai Basin and projected amounts are based on the historically available groundwater supplies to GSWC's Ojai System.

Table 4-4: Projected Groundwater Pumping by the Ojai System to 2035 in ac-ft						
Basin Name	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Ojai Valley	1,742	2,214	2,329	2,426	2,510	2,567564
Percent total water supply	87%	85%	85%	85%	85%	85%

Notes:

1. Table format based on DWR Guidance Document Table 19
2. Years are reported in calendar years (January 1 – December 31)

4.3 Transfers and Exchanges

There are no planned transfer and/or exchange opportunities in the Ojai System at this time; therefore, Table 4-**5** has been intentionally left blank.

Table 4-5: Transfer and Exchange Opportunities

Source Transfer Agency	Transfer or Exchange	Short Term	Proposed Quantities	Long Term	Proposed Quantities
GSWC	N/A	N/A	N/A	N/A	N/A

Note:
Table format based on DWR Guidebook Table 20

4.4 Planned Water Supply Projects and Programs

There are no water supply projects and programs, in the planning stage, in the Ojai System at this time; therefore, Table 4-6 has been left blank. GSWC, as a part of its normal maintenance and operations, will replace wells, pipelines, and treatment systems as needed as a part of its ongoing Capital Improvement Program to maintain its supply and meet distribution system requirements.

Table 4-6: Future Water Supply Projects in ac-ft

Project Name	Normal Year	Single Dry Year	Multiple Dry Years		
			Year 1	Year 2	Year 3
N/A	N/A	N/A	N/A	N/A	N/A

Note:
This table is based on the DWR Guidebook Table 26

4.5 Wholesale Agency Supply Data

Table 4-7 provides Caritas's existing and planned water sources available to the Ojai System. These supplies are expected to meet the projected purchased water demands in normal water years.

Table 4-7: Existing and Planned Water Sources Available to the Ojai System as Identified by Casitas in ac-ft/yr													
Wholesaler Sources	**Contracted Volume**	**2010**		**2015**		**2020**		**2025**		**2030**		**2035**	
		Existing	Planned	Existing	Planned	Existing	Planned	Existing	Planned	Existing	Planned	Existing	Planned
CCWD		265	N/A	391	N/A	411	N/A	428	N/A	443	N/A	453	N/A

Note:
Table format based on DWR Guidebook Table 17

Table 4-8 demonstrates the reliability of the wholesale water supply to meet annual water demand of the Ojai System. The table includes a single-dry year and multiple-dry year supplies for 2035. Casitas provides 100 percent reliability to meet the water demand through 2035 for the normal water years. Casitas has determined that 2003 represents their Average/ Normal water delivery year with a volume of 16,571 ac-ft. Lake Casitas has an Average Safe Yield value of 20,840 ac-ft/yr. In 2003 GSWC purchased 382 ac-ft or 2.28 percent of the sales from Casitas. GSWC's prorated share of the Lake Casitas Average Safe Yield should be approximately 481 ac-ft. This value is 126 percent of the normal amount purchased from Casitas.

Table 4-8: Reliability of Wholesale Supply for Year 2035 in ac-ft/yr					
			Multiple-Dry Water Years		
Wholesaler	**Average / Normal Water Year Supply**	**Single Dry**	**Year 1**	**Year 2**	**Year 3**
Casitas	382	481	481	481	481
Percent Normal		126	126	126	126

Note:
Table format based on DWR Guidebook Table 31

Table 4-9 lists factors affecting wholesale supply for the Ojai System. Casitas plans 100 percent reliability of supply to the Ojai System during normal water years

Table 4-9: Factors Affecting Wholesale Supply				
Name of Supply	**Legal**	**Environmental**	**Water Quality**	**Climatic**
Casitas	None	None	None	None

Note:
Table format based on DWR Guidebook Table 29

4.6 Desalination

Section 10631 (i) of the Act requires an evaluation of desalination opportunities within the Ojai System. The Act states the following:

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

Per requirements of California Water Code Section 10631(i), this chapter presents opportunities to use desalinated water as a future water supply source for the Ojai System. The reliability of water supply for the Ojai System could be further augmented by additional supplies from desalination. Per Casitas' UWMP (2010), there are no active desalination plans.

The proximity to the Pacific Ocean provides an opportunity for Casitas to consider the development of desalinated water supplies that could supplement surface water supplies. Both the City of San Buenaventura and the Rincon Beach area are two specific water service areas to which desalination seawater supplies may be directly applicable (see Casitas' 2005 UWMP for details). The City of San Buenaventura considered seawater desalination during the early 1990s drought but did not proceed with implementation. A portion of the City of San Buenaventura is within the boundaries of Casitas. In the Rincon Beach area, an initial estimate of production from a seawater desalination plant was 1 mgd or 1,121 ac-ft/yr. Further analysis will be required to identify potential locations for a plant and the need for additional pipelines, pumping and storage facilities.

Table 4-10 provides a summary of opportunities for seawater desalination. Future seawater desalination projects could increase the reliability of water supply for the region. However, it is not possible at this point to quantify the amount of water that desalination projects would provide for the GSWC's Ojai System.

Table 4-10 Summary of Opportunities for Water Desalination

Source of Water	Yield (ac-ft/yr)	Start Date	Type of Use	Other
Seawater Desalination	1,121	N/A	N/A	N/A

4.7 Recycled Water Plan

This chapter covers Section 10633 which details the requirements of the Recycled Water Plan that are included in the Act. The Act states the following:

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

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

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

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

(d) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

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

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

4.7.1 Coordination

Table 4-11 summarizes the role of the agencies that participated in the development of recycled water plans that affect the Ojai System for GSWC.

Table 4-11: Role of Participating Agencies in the Development of the Recycled Water Plan	
Participating Agencies	**Role in Plan Development**
Water agencies	GSWC works closely with the Ojai Valley Sanitation District in providing data for planning a potential recycled water distribution system and identifying potential recycled water customers. The Ojai Valley Sanitation District, acting as the recycled water wholesaler, would lead the way in implementing the recycled water plan and distribution network.
Wastewater agencies	The Ojai Valley Sanitation District provides a reliable supply of recycled water that meets California recycled water quality standards set forth in Title 22 of the California Code of Regulations.
Groundwater agencies	Not applicable for this System.
Planning agencies	The City of Ojai, in conjunction with the Ojai Valley Sanitation District, plays a key role in conducting data and customer assessments, as well as analyzing community and economic impacts.

4.7.2 Wastewater Quantity, Quality, and Current Uses

Wastewater in the Ojai Valley Sanitation System is collected by gravity sewers, lift stations, and force mains. The wastewater is then transported through trunk and main sewer lines to the Ojai Valley Sanitary District's (OVSD) wastewater treatment plant.

The OVSD Treatment Plant provides primary, secondary, and tertiary treatment for an average dry weather flow (DWF) of 2.2 million gallons of wastewater per day (MGD); the design capacity is 3 MGD. The plant serves a largely residential population of approximately 23,000 residents living in the City of Ojai, the unincorporated Ojai Valley, and the North Ventura Avenue area, of which less than half are GSWC customers. After treatment, the water is discharged into the Ventura River.

Because the OVSD treats wastewater for a larger population than is accounted for in the Ojai System, an estimated per capita wastewater generation factor was used to calculate the volume of wastewater generated by the customers in the Ojai System. The wastewater generation factor is based on the population served and the average DWF for the OVSD's treatment plant. The plant serves approximately 23,000 residents and treats an average of 2.2 MGD, making the average per capita wastewater generation factor for OVSD 96 gallons per day (gpd). This per capita wastewater generation factor was used to estimate the wastewater generation in the Ojai System; Table 4-12 summarizes the estimates of existing and projected volumes of wastewater collected and treated in the Ojai System. Although all of the treated water is discharged into the Ventura River, 100 percent of it is treated to meet recycled water standards and has been indicated as such in the table.

Table 4-12: Estimates of Existing and Projected Wastewater Collection and Treatment in ac-ft/yr (mgd) for the Ojai System							
	2005[2]	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Projected population in service area	7,405	7,873	8,276	8,706	9,069	9,385	9,589
Wastewater collected & treated in service area	796 (.71 mgd)	847 (.76 mgd)	890 (.79 mgd)	936 (.84mgd)	975 (.87 mgd)	1,009 (.90 mgd)	1,031 (.92 mgd)
Quantity that meets recycled water standard	796 (.71 mgd)	847 (.76 mgd)	890 (.79 mgd)	936 (.84mgd)	975 (.87 mgd)	1,009 (.90 mgd)	1,031 (.92 mgd)

Notes:
1. This table is based on the DWR Guidebook Table 21.
2. Based on actual year.
3. Values of wastewater collected and treated are estimated. For a description of the methodology, refer to the text.

Table 4-13 lists the existing and projected wastewater disposal methods for the OVSD. Currently, all wastewater that is collected and treated is discharged into the Ventura River. Table 4-14 was intentionally left blank, as there are no existing uses of recycled water by the GSWC customers of the Ojai System.

Table 4-13: Estimates of Existing and Projected Disposal of Non-Recycled Wastewater In ac-ft/yr (mgd) for the Ojai System								
Method of Disposal	**Treatment Level**	**2005[2]**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
River Discharge	Secondary	796 (0.71)	847 (0.76)	890 (0.79)	936 (0.84)	975 (0.87)	1,009 (0.90)	1,031 (0.92)

Notes:
1. This table is based on the DWR Guidebook Table 22.
2. Based on actual year.
3. Volumes of effluent discharged are estimated. For a description of the methodology, refer to the text.

Table 4-14: Existing Recycled Water Use in the Ojai System		
Type of Use	**Treatment Level**	**2009 Use (ac-ft/yr)**
N/A	N/A	N/A

4.7.3 Potential and Projected Use

The OVSD has evaluated the feasibility of implementing a recycled water program and has found that due to the treatment plant location and the plant size, it is not economically viable to provide the infrastructure necessary to establish a recycled water program at this time. Although the OVSD treats the effluent from the plant to meet recycled water standards, the OVSD discharges the effluent into the Ventura River to maintain in-stream flows. Because OVSD has no plans to implement a recycled water program, Table 4-15, Table 4-16, and Table 4-17 were intentionally left blank.

Table 4-15: Potential Future Recycled Water Uses in ac-ft/yr

Type of Use	Treatment Level	Description	Feasibility	2010[2]	2015	2020	2025	2030	2035
N/A	N/A	N/A	N/A	0	0	0	0	0	0
			Total	0	0	0	0	0	0

Notes:
1. **This table is based on the DWR Guidebook Table 23.**
2. **Based on actual year.**

Table 4-16: Projected Future Recycled Water Use in Service Area in ac-ft/yr

Type of Use	2010	2015	2020	2025	2030	2035
None	0	0	0	0	0	0

Table 4-17: Comparison of Recycled Water Uses—Year 2005 Projections versus 2010 Actual

Type of Use	2005 Projection for 2010	2010 Actual Use
N/A	N/A	N/A

Note:
This table is based on the DWR Guidebook Table 24.

4.7.4 Optimization and Incentives for Recycled Water Use

As owner and operator of the treatment plant, OVSD is responsible for determining the technical and economic feasibility of supplying recycled water to the Ojai System. Extension of the recycled water lines within the Ojai System is also the responsibility of OVSD.

Because there are no plans in place to provide recycled water to the Ojai System, there are no actions in place at this time by which GSWC is encouraging the use of recycled water in the SYSTEM. Therefore, Table 4-18 is not applicable for this system and has been intentionally left blank.

Table 4-18: Methods to Encourage Recycled Water Use and the Resulting Projected Use in ac-ft/yr

Actions	2010	2015	2020	2025	2030	2035
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note:

This table is based on the DWR Guidebook Table 25.

Chapter 5: Water Quality

Section 10634 of the Act requires an analysis of water quality issues and their impact to supply reliability. The Act states as follows:

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

5.1 GSWC Measures for Water Quality Regulation Compliance

To facilitate full compliance with water quality laws and regulations, GSWC maintains an Environmental Quality Department that has independent lines of reporting authority within the organization. The Environmental Quality Department is headed by a company officer specifically assigned to oversee and manage the company's environmental and water quality programs. The Vice President of Environmental Quality has a staff of three managers, including two Water Quality Managers. The Water Quality Managers, in turn, manage a staff of Water Quality Engineers and Technicians that are assigned to district offices. Each district office is assigned one Water Quality Engineer and at least one Water Quality Technician to provide direct support to the local drinking water systems within the district.

The District Water Quality Engineer is the main point of contact for the California Department of Public Health (CDPH) as well as other regulatory agencies. The Water Quality Engineer also is responsible for coordinating compliance measures through scheduling required sample collection, preparing water quality related plans, maintaining a water quality database, providing training to operations, maintaining a cross connection control program, and preparing and submitting monitoring reports, permit applications and other regulatory related correspondence.

As a whole, the Environmental Quality Department monitors and participates in the implementation of new water quality related laws and regulations. Through routine department meetings and training, the District Water Quality Engineers are kept up to date with changing water quality regulations and related technology. These efforts contribute towards maintaining a pool of trained water quality professionals that can be utilized throughout the company. This provides the company the ability to respond to a wide variety of water quality issues or emergencies.

5.2 Water Quality Issues

The drinking water quality of the Ojai System must comply with the Safe Drinking Water Act (SDWA), which is composed of primary and secondary drinking water standards regulated by the U.S. Environmental Protection Agency and CDPH. Water Quality sampling is performed at each well and within the distribution system to ensure compliance with the regulatory standards.

5.2.1 Surface Water Quality

The Ojai System purchases some treated surface water from the Casitas Municipal Water District (Casitas). Casitas operates and obtains its source water from Casitas Lake, which has a storage capacity of 254,000 ac-ft and receives inflow from a 105 square mile watershed.

The main water quality concerns for the surface water purchased from CMWD are related to the water supply source. The water quality is generally excellent; however, it is affected by seasonal variations to lake inflow, algal blooms, and lake turn-over. The water quality parameters that are of particular importance include total organic carbon (TOC), taste and odor compounds. An increase in TOC concentrations may result in an increased production of disinfection byproducts, while an increase in taste and odor compounds will affect the aesthetic quality of the drinking water.

5.2.2 Groundwater Quality

Table 5-1 summarizes water quality issues and recommendations for wells within the Ojai System. The following discussion relates to contaminants with MCLs that are either existing or have been proposed by the United States Environmental Protection Agency (USEPA) and/or CDPH.

Drinking water regulations pertaining to emerging contaminants of concern, such as chromium-6 and nitrosamines, and potential revisions to existing regulations are closely monitored by GSWC's environmental quality department. The appropriate sampling and action will be taken on any affected water supply sources as monitoring requirements, new or revised MCLs are promulgated by the USEPA or CDPH. It is anticipated that it will take approximately two to five years from official adoption of a new or revised MCL to implement wellhead treatment or alternative approach for a source, including all steps from procuring CPUC funding approval to planning, permitting, design, and construction. There is typically adequate time allotted from regulatory approval to promulgation of a new drinking water standard to address localized treatment requirements; therefore no direct impacts to water supply reliability from future water quality regulations are anticipated at this time.

Strategies for treating groundwater in the Ojai System are designed to meet or exceed state and federal regulations. All equipment is regularly maintained by GSWC personnel, and any failures are immediately addressed, resulting in minimal disruption to water supply.

The primary source of water supply for the Ojai System is groundwater. The system operates 5 active groundwater wells which extract groundwater from the Ojai Valley Groundwater Basin. All five wells are located in the northeast portion of the groundwater basin, within the GSWC Mutual and San Antonio Plants (two adjacent parcels of land that are separated by San Antonio Creek).

Iron & Manganese. Iron and manganese periodically exceed their respective secondary drinking water standard of 300 µg/L and 50 µg/L. These two constituents are addressed through the proper operation of the San Antonio Plant Iron & Manganese Filter, and the effluent from that filter is normally non-detect for both of these elements.

TDS. Some of the water produced from the GSWC groundwater wells exceeds the "recommended" secondary MCL standard for total dissolved solids (TDS) of 500 mg/L. The wells have TDS concentrations that range from 340 to 660 mg/L. The groundwater from these wells is also considered hard water as the hardness levels have ranged from 208 to 380 mg/L.

Table 5-1: Summary of Assessment					
Well	**Normal Year Well Capacity (gpm)**	**Status**	**Water Quality Issue/Concern**	**Existing Treatment**	**Recommendations**
Gorham Well No. 1	800	Active	TDS, iron, manganese	Chlorination, iron & manganese filtration	
Mutual Well No. 4	450	Active	TDS, iron, manganese	Chlorination, iron & manganese filtration	
Mutual Well No. 5	500	Active	TDS, iron, manganese	Chlorination, iron & manganese filtration	
San Antonio Well No. 3	430	Active	TDS, iron, manganese	Chlorination, iron & manganese filtration	
San Antonio Well No. 4	550	Active	TDS, iron, manganese	Chlorination, iron & manganese filtration	

5.2.3 Distribution System Water Quality

Distribution system water quality monitoring is performed for several water quality parameters in the Ojai System, including general physical parameters, presence of coliform bacteria, disinfectant and disinfection by-product levels. Corrosivity of the water is monitored by measuring lead and copper levels at customer water taps. The Ojai System utilizes an approved Sample Siting Plan for the collection, recording, and reporting of all bacteriological analyses. All monitoring parameters and levels currently meet drinking water standards. The ability to continue to meet these standards is not expected to change in the foreseeable future.

In addition to the monitoring programs, the Ojai System has implemented a number of operational programs that are designed to maintain water quality within acceptable criteria. The system flushes its distribution system on a routine basis as a means to remove built up sediment within the mains as well as to ensure proper maintenance of disinfectant residuals. The system also has an active backflow and cross connection prevention program in place to reduce the risk of backflow conditions from a service connection into the distribution system. Also, security measures are in place to protect the distribution system from tampering by unauthorized personnel. All of these programs are designed to assist with maintaining the water quality within the distribution system and provide some of the tools needed to respond to a water quality emergency

5.3 Projected Impact of Water Quality

As discussed previously, the Ojai groundwater wells have been impacted by TDS, iron, and manganese concentrations. Some of the wells also have low level nitrate, with concentrations hovering near or below about ½ the MCL of 45 mg/L. None of these parameters are expected to change in the near future, but should that or any other situation occur that would result in the groundwater not meeting regulatory requirements, there is a connection to CMWD at the San Antonio Plant that can be used to blend purchased water with groundwater in order to reduce contaminant levels to within acceptable limits.

Table 5-2 summarizes the projected impact on water supply due to water quality issues with wells in the Ojai System.

Table 5-2: Summary of Projected Water Supply Changes Due to Water Quality Issues (ac-ft/yr)						
Water Source	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Gorham Well No. 1	0	0	0	0	0	0
Mutual Well No. 4	0	0	0	0	0	0
Mutual Well No. 5	0	0	0	0	0	0
San Antonio Well No. 3	0	0	0	0	0	0
San Antonio Well No. 4	0	0	0	0	0	0

Chapter 6: Water Supply Reliability

Sections 10631 and 10635 of the Act require that an assessment of water supply reliability for various climatic conditions be undertaken. The Act states:

Section 10631

(c)

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

(A) An average water year.

(B) A single dry year.

(C) Multiple dry water years.

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

Section 10635

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

This chapter provides a water supply and demand assessment for the Ojai System for a normal year, a single-dry year, and multiple-dry years. The following is a summary of the water supply sources and reliability of those sources for the Ojai System. The details of water supply sources are provided in Chapter 4, and the water demand projections are documented in Chapter 3.

6.1 Reliability of Supply

The Ojai System receives its water supply from two sources, purchased water from Casitas and local groundwater from the Ojai Basin. Therefore, conditions in both local and more distant areas can impact the reliability of supplies. The following discussion summarizes the reliability of GSWC's water supply sources. In general, GSWC's supply is expected to be 100 percent reliable through 2035 during normal water years. This reliability is a result of the projected reliability of purchased water from Casitas and groundwater supplies from the Ojai Basin. The following is a summary of the basis of this reliability.

6.1.1 Reliability of Purchased Water

Reliability and vulnerability of the purchased supply to seasonal or climatic shortages are dependent on the reliability plan of Casitas. Casitas intends to provide 100 percent supply reliability for purchased water to the Ojai System through 2035 for normal years (Casitas 2010). Casitas' plan for resource management optimizes the use of its available resources during

surpluses and shortages to minimize the probability of severe shortages and to eliminate the possibility of extreme shortages and shortage allocations.

Presently, the Casitas relies on Lake Casitas surface water supply as its primary water source. In addition, Casitas' Mira Monte well provides roughly 300 ac-ft/yr compared to the roughly 20,000 ac-ft that is realized from the Lake. Casitas has taken important steps over the past decade to reduce its vulnerability to extended drought or other potential threats. During 2003-04, Casitas undertook a study that re-evaluated the supply and demand given the drought period from 1945 through 1965 (Water Supply and Use Status Report, December 7, 2004). The report analyzes the reliability of the Lake Casitas water supply and its vulnerability to climatic and seasonal variations in weather and water demands. The evaluation considered the historical hydrology of the Ventura River area for the period of 1945 through 2003 and the historical water use demands for the period of 1983 through 2003. The period analysis included an extensive drought, associated with the diminishment of local water supply, followed by a series of wet years that resulted in the restoration of the Lake Casitas water supply. The report also evaluated the impact to water supplies that could result from regulatory requirements to release additional water for fisheries and the removal of a dam structure from the water system. The drought period safe yield was 20,840 ac-ft/yr for Lake Casitas and the Mira Monte Well.

Casitas has developed a method for implementing a reduction of water use during times of drought. The water allocation program imposes staged cutbacks among classes of customers and water rate incentives. In addition, Casitas is considering adopting a price-driven allocation program that provides for a base water use at a reasonable cost rate. The water cost rate escalates once the customer exceeds the base use (allocation). This structure promotes water conservation measures (Casitas, 2004).

Casitas has also adopted a number of strategies to get the public to adopt water conservation practices. Some of these activities include providing information to community groups about water conservation and sending out quarterly newsletters that include information on water conservation to all residents within the Casitas supply area. In addition, Casitas may curtail the water use of its customers in the event of an extended drought as the Lake Casitas storage level declines over time (Casitas UWMP, 2005).

Casitas currently does not have any specific future water projects that will develop more water for their system. They plan to utilize program management of the safe yield of Lake Casitas to balance water supplies within their boundary.

6.1.2 GSWC's Groundwater Supply Reliability

The OBGMA was created to manage the groundwater in the Ojai Basin. The OBGMA has completed several hydrologic studies on groundwater supplies and conditions in the Ojai Basin (SG&D, 1992) (OBGMA, 1993). These studies have served as a basis for creating a management plan for the groundwater resources of the Ojai Basin. As a result of this hydrologic work, the safe yield of the Ojai Basin is estimated to be 6,000 ac-ft/yr (SG&D, 1992). According to the 2007 Ojai Basin Groundwater Management Plan, total groundwater extraction between 1981 and 2005 averaged approximately 5,170 ac-ft/yr. During this period GSWC extracted an average 1,820 ac-ft/yr while non-GSWC groundwater use averaged 3,350 ac-ft/yr.

The projected groundwater pumping for GSWC's Ojai System in 2035 is 2,520 ac-ft/yr. Assuming the non-GSWC groundwater use continues within the same range as recently reported historical use, total groundwater extractions from the Ojai Basin would be

approximately 5,870 ac-ft/yr. Based on these projections, groundwater extractions in the Ojai Basin do not exceed the Basin's estimated annual safe yield and should provide a reliable source in the future, even during dry periods.

6.2 Ojai System's Water Supply Reliability

Supply reliability for the Ojai System depends on the reliability of purchased water from Casitas and local groundwater supplies from the Ojai Basin as discussed above.

Table 6-2 presents water supply projections for purchased water and groundwater sources during a normal year, a single-dry year, and multiple-dry years for the Ojai System. The normal-year supply represents the expected supply under average hydrologic conditions, the dry-year supply represents the expected supply under the single driest hydrologic year, and the multiple-dry year supply represents the expected supply during a period of three consecutive dry years.

As described above, purchased water supplies from Casitas are expected to be 100 percent reliable to meet the normal year demands of the Ojai System through 2035. The total supply and demand assessment shows that Casitas has a supply excess during normal years.

However, Casitas anticipates shortages in supply during single-dry years and in multiple-dry years, with a shortage of 2.3 percent of the projected demands for the single-dry years, and varying from 1.0 to 17.2 percent shortfall over the multi-dry years (Casitas' 2010 UWMP). It is anticipated that any shortage in purchased water will be met by local groundwater supplies and/or by utilizing conservation practices. Casitas and GSWC have implemented and will implement projects to ensure the purchased water demands can be met under normal, single-dry year, and multiple-dry years.

Table 6-1: Supply Reliability for the Ojai System for Year 2035 in ac-ft/yr

Source	Normal Water Year	Single-Dry Water Year	Multiple-Dry Water Years		
			Year 1	Year 2	Year 3
Purchased water from Casitas	382	481	481	481	481
Groundwater	2,060	1,963	1963	1,963	1,963
Total	2,442	2,444	2,444	2,444	2,444
Percent of Normal		100	100	100	100

Note:
Table format based on DWR Guidebook Table 28

Table 6-2 lists single-dry year and multiple-dry year periods for both groundwater and purchased water supplies. Casitas has evaluated the reliability of the Lake Casitas water supply and its vulnerability to climatic and seasonal variations in weather and water demands. The single-dry year and multiple-dry year periods are based on Casitas' analysis of the lowest average precipitation for a single year and the lowest average precipitation for a consecutive multiple-year period, respectively. Casitas' estimates suggest that 2003 represents a normal

water year based on median rainfall (24.83 inches) in the Lake Casitas area during the 30 year time period of 1980-2010. 2007 represents the single-dry year with 8.6 inches of rainfall, and the years of 1988 -1990 represent the driest consecutive years, with median rainfall of 13.27 inches. Casitas has determined that they can meet 97.7 percent of the projected water demands for a single-dry year, and 82.4 percent of the projected demands for multiple- dry year periods.

According to the 2007 Ojai Basin Groundwater Management Plan, total groundwater extraction between 1981 and 2005 averaged 5,170 ac-ft/yr. During this period GSWC extracted an average 1,820 ac-ft/yr while other groundwater pumpers averaged 3,350 ac-ft/yr.

The projected groundwater pumping for GSWC's Ojai System in 2035 is 2,520 ac-ft/yr. Assuming the other groundwater pumpers continue pumping at rates similar to recently reported historical use, total groundwater extractions from the Ojai Basin would be approximately 5,870 ac-ft/yr. Based on these projections, groundwater extractions in the Ojai Basin do not exceed the Basin's estimated annual safe yield of 6,000 ac-ft/yr and should provide a reliable source in the future, even during dry periods. Continued efforts by the OBGMA and GSWC to manage groundwater resources within the Ojai Basin will help maintain the reliability of the water supply.

The safe yield of the Ojai Basin was estimated to be 6,000 ac-ft/yr (SGD, 1992). The Ojai Basin has substantial storage capacity to provide a buffer during droughts. During recent dry periods, including 2002 through 2004, the water supply for the Ojai System has been reliable, although the basin generally experiences large drops in water levels during extended dry periods. As a result, projected groundwater extractions in the Ojai Basin do not exceed the annual safe yield and should provide a reliable source in the future, even during dry periods.

Table 6-2: Basis of Water Year Data

Water Year Type	Base Year(s)	Historical Sequence
Purchased Water[1]		
Normal Water Year	2003	1980 – 2010
Single-Dry Water Year	2007	1980 – 2010
Multiple-Dry Water Years	1988- 1990	1980 – 2010
Groundwater[2]		
Normal Water Year[3]	2003	1980 – 2010
Single-Dry Water Year	2007	1980 – 2010
Multiple-Dry Water Years	1988 – 1990	1980 – 2010

Notes
Table format based on DWR Guidebook Table 27.

6.2.1 Factors Resulting in Inconsistency of Supply

Table 6-3 presents factors that could potentially result in inconsistency of supply for the Ojai System.

The climatic vulnerability for the groundwater supply would only become a factor during an extended drought. Currently, total groundwater extractions in the Ojai Basin do not exceed the safe yield. Any climatic variations that would affect the groundwater supply would likely be reconciled by the additional use of purchased water.

Table 6-3: Factors Resulting in Inconsistency of Supply

Name of Supply	Legal	Environmental	Water Quality	Climatic
CCWD	N/A	N/A	N/A	N/A
Groundwater, Pittsburg Plain Groundwater Basin	N/A	N/A	N/A	N/A

Notes:
1. Table format based on DWR Guidebook Table 29.
2. N/A – Not Applicable.

6.3 Normal Water Year Analysis

Table 6-4 summarizes the service reliability assessment for a normal water year based on water supply and water demand projections.

Table 6-4: Comparison of Projected Normal Year Supply and Demand

	2015	2020	2025	2030	2035
Water Supply Total (ac-ft/yr)	2,494	2,331	2,428	2,513	2,567
Water Demand Total (ac-ft/yr)	2,494	2,331	2,428	2,513	2,567
Difference (supply minus demand)	0	0	0	0	0
Difference as Percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

Note:
Table format based on DWR Guidebook Table 32

6.4 Single Dry-Year Analysis

Table 6-5 demonstrates the reliability of water supplies to meet projected annual water demands for the Ojai System in a single-dry year. Casitas has designated 2003 as their normal water year. This year most closely replicates the period of average supply. During that year GSWC purchased 382 ac-ft or 2.31% of Casitas' sales. Lake Casitas has an Annual Safe Yield

(ASY) of 20,840 ac-ft/yr. For the purpose of this investigation it was assumed that during a single dry-year, GSWC would be allocated a prorated share of the ASY or 481 ac-ft.

Casitas also designated 2007 as the single-dry year. During that year GSWC extracted 1,963 ac-ft from the Ojai Groundwater Basin. Provided the 481 ac-ft from Casitas and 1,963 from groundwater GSWC would have a single-dry year supply of 2,444 ac-ft.

Table 6-5: Comparison of Projected Supply and Demand for Single Dry Year

	2015	2020	2025	2030	2035
Supply Total (ac-ft/yr)	2,444	2,331	2,428	2,444	2,444
Demand Total (ac-ft/yr)	2,494	2,331	2,428	2,513	2,567
Difference (supply minus demand)	- 50	0	0	- 69	- 123
Difference as Percent of Supply	2.0%	0%	0%	2.8%	5.0%
Difference as Percent of Demand	2.0%	0%	0%	2.8%	4.8%

Note:

Table format based on DWR Guidebook Table 33

6.5 Multiple Dry-Year Analysis

Table 6-6 presents the projected multiple-dry year water supply and demand assessment. For calculating the multi-dry years the following procedures applied: 1) The water demands would be the same as normal demand years. 2) The multiple dry-year supply would be the same per year as the single-dry year. GSWC would have multiple dry- year supply of 2,444 ac-ft/yr.

In a worst case scenario in 2035, the Ojai system would have a demand of 2,567 ac-ft and a supply of 2,444 ac-ft. This would result in a shortage of 123 ac-ft. The shortage is approximately 5 percent of the total supply. It is anticipated that the 5 percent shortage would be accommodated through voluntary short-term conservation programs.

Table 6-6:	Projected Multiple-Dry Year Water Supply and Demand Assessment				
Year	**Supply (ac-ft/yr)**	**Demand (ac-ft/yr)**	**Difference**	**Difference as Percent of Supply**	**Difference as Percent of Demand**
2011					
2012					
2013	2,299	2,299	0	0%	0%
2014	2,397	2,397	0	0%	0%
2015	2,444	2,494	-50	2.0%	2.0%
2016					
2017					
2018	2,396	2,396	0	0%	0%
2019	2,364	2,364	0	0%	0%
2020	2,331	2,331	0	0%	0%
2021					
2022					
2023	2,389	2,389	0	0%	0%
2024	2,409	2,409	0	0%	0%
2025	2,428	2,428	0	0%	0%
2026					
2027					
2028	2,444	2,479	-35	1.4%	1.4%
2029	2,444	2,496	-52	2.1%	2.1%
2030	2,444	2,513	-69	2.8%	2.8%
2031					
2032					
2033	2,444	2,545	-101	4.1%	4.1%
2034	2,444	2,556	-112	4.6%	4.4%
2035	2,444	2,567	-123	5.0%	4.8%

Notes:
1. This assessment is based on the 3-year multiple-dry year period ending in 2015, 2020, 2025, 2030, and 2035.
2. Table format based on DWR Guidebook Table 34.

Chapter 7: Conservation Program and Demand Management Measures

This Chapter addresses the water conservation requirements of the Act for the Ojai System and includes a summary of current and planned Demand Management Measures (DMM) implementation and overview of the proposed program for compliance with SBX7-7 which requires 20 percent statewide reduction in urban water use by 2020. The DMM portion of the Act states the following:

Section 10631.

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

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

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

(B) Residential plumbing retrofit.

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

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

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

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

(J) Wholesale agency programs.

(K) Conservation pricing.

(L) Water conservation coordinator.

(M) Water waste prohibition.

(N) Residential ultra-low-flush (ULF) toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(j) For purposes of this part, urban water suppliers that are members of the California Urban Water

Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

7.1 Conservation Program Background

In 1991, GSWC became a signatory to the Memorandum of Understanding Regarding Water Conservation in California (MOU) and a member of the California Urban Water Conservation Council (CUWCC), establishing a firm commitment to the implementation of the Best Management Practices (BMP) or DMMs. The CUWCC is a consensus-based partnership of agencies and organizations concerned with water supply and conservation of natural resources in California. By becoming a signatory, GSWC committed to implement a specific set of locally cost-effective conservation practices in its service areas. In order to facilitate efficient BMP reporting for GSWC across service areas spread throughout California, several BMP "Reporting Units" were established. The Ojai BMP Reporting Unit is equivalent to the Ojai System.

As an investor-owned utility, GSWC's ability to obtain funding and implement conservation programs is contingent on approval of the General Rate Case by the CPUC. GSWC is currently in the process of reviewing and revising its existing program as follows:

- In 2011, GSWC will be submitting rate case with the CPUC which will facilitate further development of cost- effective conservation programs, including compliance with SBX7-7.

- Subject to funding approval for each rate-making area, GSWC will conduct a baseline water use efficiency assessment of each of its districts to identify opportunities for cost-effective conservation. Results of the baseline assessment will be available by 2013, and will enable GSWC to define programs that target water savings in specific areas and meet DMM requirements. To the extent practicable, a companywide conservation program will then be implemented. Varying levels of program implementation will be scaled as appropriate for each district depending on funding availability, local wholesaler and regional participation levels, and SBX7-7 targets.

The MOU and associated BMPs were revised by the CUWCC in 2008, which is equated to the DMM per Section 10631(j) of the Act. The revised BMPs now contain a category of "Foundational BMPs" are considered to be essential water conservation activities, that signatories are expected to implement as a matter of their regular course of business. These include Utility Operations (metering, water loss control, pricing, conservation coordinator, wholesale agency assistance programs, and water waste ordinances) and Public Education (public outreach and school education programs). The remaining BMPs are generally quantifiable (the water savings achieved from implementation can be directly calculated) and are called "Programmatic BMPs." Programmatic BMPs are divided into Residential, Large Landscape, and Commercial, Industrial, and Institutional (CII) categories. These revised BMP organization is also reflected in the 2010 UWMP's DMM compliance requirements. A summary of the DMMs described in the Act and current CUWCC BMP organization is presented in Table 7-1 for reference.

Table 7-1: CUWCC BMP and UWMP DMMs)organization and Names					
CUWCC BMP Organization and Names (2009 MOU)				**UWMP DMMs**	
Type	**Category**	**BMP #**	**BMP name**	**DMM #**	**DMM name**
Foundational	Operations Practices	1.1.1	Conservation Coordination	L	Water conservation coordinator
		1.1.2	Water Waste Prevention	M	Water waste prohibition
		1.1.3	Wholesale Agency Assistance Programs	J	Wholesale agency programs
		1.2	Water Loss Control	C	System water audits, leak detection, and repair
		1.3	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	D	Metering with commodity rates for all new connections and retrofit of existing connections
		1.4	Retail Conservation Pricing	K	Conservation pricing
	Education Programs	2.1	Public Information Programs	G	Public information programs
		2.2	School Education Programs	H	School education programs
Programmatic	Residential	3.1	Residential assistance program	A	Water survey programs for single-family residential and multifamily residential customers
				B	Residential plumbing retrofit
		3.2	Landscape water survey	A	Water survey programs for single-family residential and multifamily residential customers
		3.3	High-Efficiency Clothes Washing Machine Financial Incentive Program	F	High- efficiency washing machine rebate programs
		3.4	WaterSence Specification (WSS) toilets	N	Residential ultra-low-flush toilet replacement programs
	Commercial, Industrial, and Institutional	4	Commercial, Industrial, and Institutional	I	Conservation programs for commercial, industrial, and institutional accounts
	Landscape	5	Landscape	E	Large landscape conservation programs and incentives

Note:

1. Components of DMM A (Water Survey programs for single-family residential and multifamily residential customers) applies to both BMP 3.1 (Residential assistance program) and BMP 3.2 (Landscape water survey)

7.2 Implementation of BMPs/DMMs

This section provides a description of the various programs and conservation activities implemented in the Ojai System. Signatories to the MOU are permitted by Water Code Section 10631(j) to include biennial CUWCC BMP reports in an UWMP to meet the requirements of the DMMs section of the UWMP Act if the agency is meeting all provisions of the MOU. The Ojai System CUWCC BMP coverage report for 2009 through 2010 is included as Appendix C and supplements the summary of BMP implementation activities provided in this chapter.

7.3 Foundational DMMs

GSWC is progressing towards implementing all Foundational BMPs required in the revised MOU and UWMP Act. In order to maintain consistency with the SBX7-7 planning process, GSWC has chosen to comply with the remainder of the CUWCC MOU through the gpcd compliance option for the Ojai Reporting Unit. The gpcd compliance option allows MOU signatories to employ any conservation program approach that attains a two percent per year per capita savings, for a total reduction of 18 percent by 2018. Since the CUWCC MOU and SBX7-7 compliance strategies are the same and the terms are used interchangeably throughout this chapter.

7.3.1 Utility Operations

7.3.1.1 Conservation Coordinator

This BMP is being implemented. GSWC maintains a fully staffed Conservation Department with a companywide Water use Efficiency Conservation Analyst, and a Water Conservation Coordinator that represents each of the three regions to administer conservation programs and support wholesale programs. GSWC also employs a number of consultants to support program development and implementation.

7.3.1.2 Water Waste Prevention

Although GSWC does not have rule-making authority, it supports member agencies and local cities in efforts to adopt ordinances that will reduce water waste. This BMP is implemented through CPUC-approved rules provided in Appendix D, including: Rule 14.1 the Water Conservation and Rationing Plan, Rule 11, Discontinuance and Restoration of Service.

CPUC's methodology for water utilities to implement Rule 14.1 is documented in Standard Practice U-40-W, "Instructions for Water Conservation, Rationing and Service Connection Moratoria." Rule 14.1 sets forth water use violation fines, charges for removal of flow restrictors, and the period during which mandatory conservation and rationing measures will be in effect. Water conservation restriction included:

- Use of potable water for more than minimal landscaping.
- Use through a broken or defective water meter.
- Use of potable water which results in flooding or runoff in gutters or streets.

- Use of potable water for washing private cars or commercial aircraft, cars buses, boats, or trailers except at a fixed location where water is properly maintained to avoid wasteful use.

- Use of potable water for washing buildings structures, driveways, street cleaning or other hard-surface areas.

- Use of potable water to irrigate turf, lawns, gardens or ornamental landscaping.

- Use of potable water for construction purposes.

- Use of potable water for filling or refilling of swimming pools.

Rule No. 20 (approved in 1978) discourages wasteful use of water and promotes use if water-saving devices. The stated purpose of the rule is to "ensure that water resources available to the utility are put to a reasonable beneficial use and that the benefits of the utility's water supply and service extend to the largest number of persons." Together Rules 11, 14.1, and 20 prohibit negligent or wasteful use of water, create a process for mandatory conservation and rationing, and promote the use of water-saving devices.

7.3.1.3 Water Loss Control

Unaccounted for water losses are monitored by the Water Loss Control Department (WLCD) by reviewing the Water Audit program survey results. If the amount of unaccounted for water exceeds the established tolerance levels, a Leak Detection Audit is preformed. This is conducted by the Water Loss Control Technician with the most current leak detection technology, a Sonic Leak Detection Sound Amplification Instrument. To pinpoint leaks, the technician conducts a comprehensive survey of the system by making physical contact with all available main line valves, hydrant valves and all service connections.

For calendar year 2009, GSWC implemented the AWWA M36 Standard Water Audit methodology. The approach consists of a component analysis of leaks for designation into "revenue" and "non-revenue" categories and an economic analysis of recoverable loss. Results of the analysis, which are included in Appendix D, show an infrastructure leakage index (ILI) of 4.04. According to general guidelines, an ILI of 3.0 to 5.0 is appropriate for systems where water resources can be developed or purchased at a reasonable expense, and existing water supply infrastructure is sufficient to meet long-term demand, as long as reasonable leakage management controls are in place (AWWA). The initial evaluation suggests that the Ojai System is within the parameters of a moderately functioning system, as defined by the AWWA.

Before the AWWA Standard Water Audit M36 methodology was implemented, prescreening for water losses was conducted by comparing the total volume of water sales and other verifiable uses against the total water supply into the system. A full audit was triggered if the total sales and verifiable uses was less than 90 percent of the total supply (I.e. unaccounted-for-water exceeded 10 percent). Table 7-2 summarizes the results.

Table 7-2: Water Loss Control Evaluation		
Report Year	**Prescreen Completed**	**Prescreen Results**
2006	No	N/A
2007	No	N/A
2008	No	N/A
2009	No	N/A

Implementation Steps and Schedule

Effective 2010, GSWC will continue to implement the Standard Audit and Water Balance worksheet procedures following the AWWA M36 protocol for the next 4 years, taking measurable steps to improve data accuracy while cost-effectively reducing non-revenue water through repair of leaks and other measures. The water audit for Calendar 2010 will be completed by mid-2011.

GSWC used version 4.2 of AWWA Water Audit software for its evaluation in 2009 and 2010, and will use the current software for all future evaluations which includes metrics for evaluating the validity of the data. GSWC already has a comprehensive work order management system in place that documents leak locations and repair history.

7.3.1.4 Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

All customers of the Ojai System are metered and billed by volume on a monthly basis. A meter maintenance and repair plan has been submitted to the CUWCC. In addition, GSWC follows the requirements of CPUC General Order 103-A which prescribes minimum water system design, operation and maintenance standards for water utilities includes requirements for calibrating, testing frequency, and replacing water meters.

7.3.1.5 Retail Conservation Pricing

All metered customers in the Ojai System are charged volumetrically. In addition effective December 2010, GSWC has implemented a three tiered conservation pricing rate structure for residential customers, as approved by the CPUC for Region 1, including the Ojai System customers. The current rate structure for residential customers has a fixed charge as well as volumetric escalating pricing tiers, depending on customer usage. Non-residential customers have a fixed charge and a fixed volumetric charge. Implementation of this revised pricing policy is the result of GSWC's collaboration with CPUC to implement conservation tiered rates for residential customers of investor-owned utilities. Tiered rates are consistent with CPUC's Water Action Plan.

Implementation Steps and Schedule

2009 and 2010 volumetric and fixed price revenue data for the Ojai System can be found in the 2009/2010 BMP Coverage Report in Appendix C. Since 2009, GSWC has been adding third tier

pricing structures and increasing volumetric charges. In 2010, volumetric revenue consisted of 65 percent of Ojai's total revenue which is on track to meet the 2012 goal of 70 percent. GSWC will be submitting a General Rate Case filing to the CPUC in 2011, which includes a proposed rate increase for volumetric charges for Region 1 customers. If the rate structure increases are approved as proposed, it is anticipated that GSWC will be on track to meet this BMP by 2015.

7.3.1.6 Education

Public Information Programs

GSWC offers public information programs for Ojai customers. For 2013, GSWC has a proposed budget of $1,555 for public education and outreach in the Ojai system. This includes free conservation literature brochures, activity booklets, and water conservation kits in the Customer Service Area office. Outreach activities completed by GSWC between 2006 and 2010 are summarized in Table 7-3.

Table 7-1: Outreach Activities

Item	2006	2007	2008	2009	2010
Paid Advertising		1	1		
Public Service Announcement		1	1		
Bill Inserts / Newsletters / Brochures		2	2		
Bill showing water usage in comparison to previous year's usage		Yes	Yes		
Demonstration Gardens		0	0		
Special Events, Media Events		1	1		
Speaker's Bureau		0	0		
Program to coordinate with other government agencies, industry, public interest groups and media		Yes	Yes		

School Education Programs

GSWC sponsors the WaterWise school education program in Ojai elementary schools, as implemented by its vendor, Resource Action Programs. Students learn about conservation practices and receive a free conservation kit that includes a water survey, 1.5 gallon per minute (gpm) low-flow shower head, 1.5 gpm kitchen sink and 1.0 gpm bathroom aerators, leak detection dye tablets, a watering gauge, and step-by-step instructions. The students are given a homework assignment to complete a water audit form and replace inefficient showerheads and aerators with water-saving devices provided in the kit. The program has been a very effective way for GSWC to reach a large number of customers and educate students, who in turn educate their parents about water efficiency practices and low-flow plumbing devices.

Results from the program are tracked, and a comprehensive Program Summary Report is generated at the end of each school year. This report documents the estimated reduction in water usage that was achieved through the retrofits and provides data on the percentage of students who participated in the program. Table 7-4 provides a summary of program participation results between 2006 and 2010.

Table 7-4: School Education Activities

Item	2006	2007	2008	2009	2010
Presentations					
Grade					
Number of students					

7.3.1.7 Methods Used to Evaluate the Effectiveness and Water Savings from Foundational BVMPs

Effective implementation of the Foundational BMPs is critical to ensuring the long-term success of GSWC's conservation efforts. GSWC will utilize quantitative methods to assess the effectiveness of each BMP, to the extent practicable. The effectiveness of the Water Waste Prevention and Water Loss Control BMP's can be measured, in part, by completing the annual M36water loss audits, improving ILI to score between 1 and 3, and documenting a year–over-year reduction in unaccounted-for (non-revenue) water. GSWC will track the impact of new conservation pricing by using its upgraded billing system to carefully monitor consumption of residential and CII customers.

The effectiveness of implementing Public Education BMPs will be measured by tracking the number of public outreach events and education programs where customers receive information on the benefits of water use efficiency and conservation. A successful public information program should encourage customers to take advantage of conservation incentives being offered by GSWC as programmatic DMMs.

There are no direct estimates of water savings applicable to the Foundational BMPs; however, these measures will continue to contribute to reducing the Ojai System's demand.

7.4 Programmatic DMMs

GSWC intends to continue to comply with the MOU using the gpcd compliance approach for the Ojai System. The baseline gpcd is equal to the average annual potable water gpcd for the years 1999 through 2008. This approach requires the purveyor to submit biennial gpcd target reports to the CUWCC. The biennial targets are computed by multiplying the agency's baseline gpcd by the applicable reduced target, as a percentage. The target will gradually decrease to 82 percent of the baseline in 2018. This approach allows the purveyor to choose which program they would like to implement, as long as the combined water savings attributable to these programs is sufficient to meet their biennial gpcd targets. The gpcd compliance option water savings targets are comparable to those required by SBX7-7, as detailed in section 7.5

Once the pending rate case is approved by the CPUC, GSWC will develop a prioritized water use efficiency program and implementation schedule for all customer service areas in the

company, focusing on systems with the highest SBX7-7 water use reduction targets and those where specific conservation activities can be implemented that are locally cost effective.

7.4.1 Residential DMMs

The gpcd compliance option does not require specific implementation plans for each programmatic BMP, and the following descriptions of current programs offerings are provided for information purposes only. Water savings estimated are also not available for each program, as implementation levels have not been defined under the gpcd compliance option requirements.

7.4.1.1 Residential Assistance Programs

GSWC has an audit program targeting high-use Single Family (SF) and Multifamily (MF) customers. GSWC identifies these customers based on billing data and sends out direct mailers to offer free water surveys. Residential water surveys are also offered to walk-in customers at the local customer service area office. Additional home surveys are conducted as part of the school education program (Section 7.3.1.6). Low flow devices are available for free to customers at GSWC office and are distributed to students as part of the free conservation kits they receive in the school education program. Devices are also distributed at outreach events, but the number of devices provided specifically to Ojai customers is not recorded.

7.4.1.2 Landscape Water Surveys

GSWC offers large landscape water surveys to all customers who request the service, but are mostly geared towards the high water-use SF and MF customers throughout the company's service area.

7.4.1.3 High-Efficiency Clothes Washers

GSWC customers are eligible to participate in the High Efficiency Clothes Washer (HECW) rebate program provided. The water efficiency clothes washers is represented by the "water factor," which is a measure of the amount of water used to wash a standard load of laundry. Washers with a lower water factor save more water. The program eligibility requirement is currently set at a water factor 4.0, which saves more than 10,000 gallons per year per washer over a conventional top loading washer. The GSWC webpage for the Ojai system advertises the rebates and provides an online application form.

7.4.1.4 WaterSence Specifications (WSS) Toilets

GSWC customers are eligible to participate in a residential High Efficiency Toilet (HET) rebate program. HET toilets (1.28 gallons per flush or less) use 20 percent less than ultra-low-flush toilets (1.6 gallons per flush). ULFT are the current standard defined by the plumbing code. The GSWC webpage for the Ojai system advertises the rebates and provides an online application form.

7.4.1.5 WaterSence Specification for Residential Development

Integration of WaterSense Specification (WSS) fixtures for new development will be accelerated by the 2010 California Green Building Standard Code (CAL Green Code), which became

effective in 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 jurisdiction, at a minimum, must adopt the mandatory measures; the Code also identifies voluntary measures that set a higher standard of efficiency for possible adoption.

GSWC cannot implement the WSS specification for new developments due to lack of legal authority. As an investor-owned utility, GSWC does not have regulatory authority and cannot adopt ordinances or regulations; however, it does support standards that will achieve a reduction in indoor water use including implementation and use of WSS fixtures as well as adoption of the CAL Green Code by local jurisdictions. GSWC will continue to support incentive programs for water efficient devices and standards.

7.4.2 Commercial, Industrial, and Institutional DMMs

GSWC is not currently implementing any conservation programs for CII in the Ojai System.

7.4.2.1 Large Landscape

GSWC's landscape program consists of identifying and contacting high-use customers, providing information and offering water use surveys, voluntary water use budgets, and landscape training. While the program is available to all customers free of charge, none have chosen to participate. An increase in conservation pricing rates in 2011 is expected to generate increased participation as is the funding mechanism that will allow for increased resources for program marketing.

7.5 SBX7-7 and CUCWCC MOU Compliance Strategy

The SBX7-7 water use baseline for the Ojai System is 299 gpcd. The 2020 compliance goal requiring a 20 percent water use reduction is 239 gpcd, as documented in Chapter 3. The CUWCC gpcd compliance option requires 18 percent water use reduction by 2018 (see Appendix E for detailed calculations), which is consistent with the SBX7-7 20 percent water savings target shown in Table 7-5 below. For this reason, the same compliance strategy will be implemented to meet both SBX7-7 and the MOU targets.

Table 7-5: SBX7-7 and CUWCC MOU Compliance Targets

		Targets		
	Baseline	**2015**	**2018**	**2020**
SBX7-7	299	**269**	-	**239**
CUWCC MOU - gpcd compliance option	**299**	**-**	**245**	**239**

Conservation Pricing

GSWC is in the process of filing a General Rate Case application to increase volumetric charges for residential and CII metered customers in its systems. If approved, increased tiered rates for residential and uniform rates for CII accounts are expected to significantly increase water savings and participation in conservation incentive programs in many of GSWC's systems.

Financial Incentives

Ongoing and/or additional financial incentives may be offered directly to customers by GSWC or in partnership with other agencies:

1. HECW rebates: Clothes washer rebates are already being implemented and will continue to provide measurable savings.

2. Zero and Low-Flow Urinal Rebates would include CII fixtures such as zero consumption and ultra-low volume urinals as well as CII specific HETs.

3. Expansion of fixture rebates to CII and Multi-family customers: currently, the toilet rebate programs are only available to all Ojai customers through the Casitas Municipal Water district's (CMWD's) wholesale program. GSWC (by-itself) offers HET and HECW rebates for single family residential customers in selected systems. GSWC will evaluate expansion of the programs to all customers and there will be increased focus on marketing to large Home Owners Association accounts.

4. Large variety of fixture rebates: This may include hot water distribution tanks, pressurized water brooms and high-pressure spray nozzles.

5. Cash-for-Grass rebated: customers are currently provided with an incentive of up to $0.5 per square foot of turf removed and replaced with landscape appropriate plants. The program is being considered for both residential and CII customers; it is currently being offered in select GSWC systems.

6. Expansion of large landscape programs: GSWC will be evaluating the effectiveness of the current landscape program and making adjustments depending on the results. If the program is found to be successful at meeting reduction targets, the program may be accelerated and more devices will be offered, such as precision nozzles

Building Code/New Standards

Although it does not have regulatory authority, GSWC supports adoption of new building standards, beyond those currently in code to enhance conservation. If all current code changes that improve the efficiency of fixtures and design are implemented, it could account for up to 60 percent of the expected reduction in demand. Some of the changes proposed will be captured in the CAL Green Building Code, adopted January 2011 as well as SB407 (Plumbing Retrofit on Resale) and standard updates for toilets and washers that are being phased in.

Information/Tracking

Information and tracking represents a new element to the existing programs focusing on collecting and processing information and ensuring that the programs are on track to meet the

goals. These activities will also help in program design by providing more robust information about customers and their water use patterns. The immediate priorities include:

1. Automatic Meter Reading (AMR): GSWC will continue to implement and utilize AMR in its systems as a priority to obtain real time data for water usage and identify customer-side leaks GSWC currently follows the requirements of the CPUC General Order 103-A, which prescribe minimum water system design, operation and maintenance standards for water utilities, and includes requirements for calibrating, testing frequency, and replacing water meters. AMR data, where available can also help GSWC monitor the impacts of existing programs, make adjustments where necessary and develop new programs.

2. Water Use Tracking Tools: Another priority, GSWC will consider plans to design and develop database tracking tools for water savings associated with its conservation plans and increase flexibility in adding or changing program elements.

7.5.1 Consideration of Economic Impacts

Since funding for all conservation activities is subject to approval by the CPUC before programs can be implemented, the economic impacts of complying with SBX7-7 have not yet been fully determined. However, an economic analysis to help develop programs that avoid placing disproportionate burdens on any single sector will be prepared during development of the SBX7-7 water use efficiency program. The annual costs associated with implementing all traditional CUWCC programmatic BMPs cannot be determined because it represents the combined efforts of Ojai's wholesaler and GSWC where funding levels, incentives and particular measures change from year to year. GSWC will take advantage of applicable partnership programs that will help make conservation program offerings more effective and cost efficient benefiting customers.

Chapter 8: Water Shortage Contingency Plan

Section 10632 of the Act details the requirements of the water-shortage contingency analysis. The Act states the following:

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

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

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

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

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

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

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

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

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

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

This chapter documents GSWC's Water Shortage Contingency Plan for the Ojai System per requirements of Section 10632 of the Act. The Water Shortage Contingency Plan is based on Rule No. 14.1 Mandatory Water Conservation, Restrictions and Ratings Program adopted by GSWC. Appendix F contains the full text of the rule.

The purpose of the Water Shortage Contingency Plan is to provide a plan of action to be followed during the various stages of a water shortage. The plan includes the following elements: action stages, estimate of minimum supply available, actions to be implemented during a catastrophic interruption of water supplies, prohibitions, penalties and consumption reduction methods, revenue impacts of reduced sales, and water use monitoring procedures.

8.1 Action Stages

The Act requires documentation of actions to be undertaken during a water shortage. GSWC has developed actions to be undertaken in response to water supply shortages, including up to a 50 percent reduction in water supply. Implementation of the actions is dependent upon approval of the California Public Utilities Commission (CPUC), especially for implementing mandatory water use restriction. CPUC has jurisdiction over GSWC because GSWC is an investor-owned water utility. Section 357 of the California Water Code requires that suppliers

that are subject to regulation by the CPUC secure its approval before imposing water consumption regulations and restrictions required by water supply shortage emergencies.

GSWC has grouped the actions to be taken during a water shortage into four stages, I through IV, that are based on the water supply conditions. Table 8-1 describes the water supply shortage stages and conditions. The stages will be implemented during water supply shortages according to shortage level, ranging from 5 percent shortage in Stage I to 50 percent shortage in Stage IV. The stage determination and declaration during a water supply shortage will be made by the Regional Vice President Customer Service.

Table 8-1: Water Supply Shortage Stages and Conditions

Stage No.	Water Shortage Supply Conditions	Shortage Percent
I	Minimum	5 -10
II	Moderate	10 - 20
III	Severe	20 – 35
IV	Critical	35 - 50

Note:
This table is based on the DWR Guidebook Table 35.

The actions to be undertaken during each stage include, but are not limited to, the following:

Stage I (5 - 10 percent shortage) - Water alert conditions are declared and voluntary conservation is encouraged. The drought situation is explained to the public and governmental bodies. GSWC explains the possible subsequent water shortage stages in order to forecast possible future actions for the customer base. The activities performed by GSWC during this stage include, but are not limited to:

- Public information campaign consisting of distribution of literature, speaking engagements, bill inserts, and conversation messages printed in local newspapers
- Educational programs in area schools
- Conservation Hotline, a toll free number with trained Conservation Representatives to answer customer questions about conservation and water use efficiency

Stage II (10 - 20 percent shortage) – Stage II will include actions undertaken in Stage I. In addition, GSWC may propose voluntary conservation allotments and/or require mandatory conservation rules. The severity of actions depends upon the percent shortage. The level of voluntary or mandatory water use reduction requested from the customers is also based on the severity. It needs to be noted that prior to implementation of any mandatory reductions, GSWC must obtain approval from CPUC. If necessary, GSWC may also support passage of drought ordinances by appropriate governmental agencies.

Stage III (20 - 35 percent shortage) – Stage III is a severe shortage that entails or includes allotments and mandatory conservation rules. This phase becomes effective upon notification by the GSWC that water usage is to be reduced by a mandatory percentage. GSWC implements mandatory reductions after receiving approval from CPUC. Rate changes are implemented to penalize excess usage. Water use restrictions are put into effect, i.e. prohibited uses can include restrictions of daytime hours for watering, excessive watering resulting in gutter flooding, using a hose without a shutoff device, use of non-recycling fountains, washing down sidewalks or patios, unrepaired leaks, etc. GSWC monitors production weekly for compliance with necessary reductions. Use of flow restrictors is implemented, if abusive practices are documented.

Stage IV (35 - 50 percent shortage) – This is a critical shortage that includes all steps taken in prior stages regarding allotments and mandatory conservation. All activities are intensified and production is monitored daily by GSWC for compliance with necessary reductions.

8.2 Minimum Supply

The Act requires 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 GSWC's water supply.

Table 8-2 summarizes the minimum volume of water available from each source during the next three years based on multiple-dry water years and normal water year. The driest three-year historic sequence is provided in Chapter 6. It is assumed that the multiple-dry year demands are the same as the water demands projected for the normal years. The water supply quantities for 2011 to 2013 are calculated by linearly interpolating between the projected water supplies of 2010 and 2015 for normal years. The water supplies for 2005 and 2010 are presented in Chapter 4.

The purchased water supplies from Casitas are expected to be 100 percent reliable to meet the normal year demands of the Ojai System through 2035. The total supply and demand assessment shows that the Casitas' supplies are in excess of demands during normal years. However, Casitas anticipates shortages in supply during multiple-dry years. The shortages are less than 5 percent in all periods. It is assumed that any shortage in purchased water can be met by local groundwater supplies and/or by utilizing conservation practices. Therefore, the purchased water supply projections for multiple-dry years are taken as the normal year projection, which is equivalent to the purchased water demand projections.

According to the 2007 Ojai Basin Groundwater Management Plan, total groundwater extraction between 1981 and 2005 averaged approximately 5,170 ac-ft/yr. During this period GSWC extracted an average 1,820 ac-ft/yr while non-GSWC groundwater use averaged 3,350 ac-ft/yr.

The projected groundwater pumping for GSWC's Ojai System in 2035 is 2,520 ac-ft/yr. Assuming the non-GSWC groundwater use continues within the same range as recently reported historical use, total groundwater extractions from the Ojai Basin would be approximately 5,870 ac-ft/yr. Based on these projections, groundwater extractions in the Ojai Basin do not exceed the Basin's estimated annual safe yield and should provide a reliable source in the future, even during dry periods. Continued efforts by the OBGMA and GSWC to manage groundwater resources within the Ojai Basin will help maintain the reliability of the water supply.

Table 8-2: Three-Year Estimated Minimum Water Supply in ac-ft/yr				
Source	**2011**	**2012**	**2013**	**2010 Average year**
Purchased water	289	313	336	265
Groundwater	1828	1915	2001	1741
Recycled water	0	0	0	0
Total	2,117	2,228	2,337	2,006

This table is based on the DWR Guidebook Table 31.

8.3 Catastrophic Supply Interruption Plan

The Act requires documentation of actions to be undertaken by the water supplier to prepare for, and implement during a catastrophic interruption of water supplies. A catastrophic interruption constitutes a proclamation of a water shortage and could be any event (either natural or man-made) that causes a water shortage severe enough to classify as either a Stage III or Stage IV water supply shortage condition.

In order to prepare for catastrophic events, GSWC has prepared an Emergency Response Plan (ERP) in accordance with other state and federal regulations. The purpose of this plan is to design actions necessary to minimize the impacts of supply interruptions due to catastrophic events.

The ERP coordinates overall company response to a disaster in any and all of its districts. In addition, the ERP requires each district to have a local disaster plan that coordinates emergency responses with other agencies in the area. The ERP also provides details on actions to be undertaken during specific catastrophic events. Table 8-3 provides a summary of actions cross-referenced against specific catastrophes for three of the most common possible catastrophic events: regional power outage, earthquake, and malevolent acts.

In addition to specific actions to be undertaken during a catastrophic event, GSWC performs maintenance activities, such as annual inspections for earthquake safety, and budgets for spare items, such as auxiliary generators, to prepare for potential events.

Table 8-3: Summary of Actions for Catastrophic Events	
Possible Catastrophe	**Summary of Actions**
Regional power outage	• Isolate areas that will take the longest to repair and/or present a public health threat. Arrange to provide emergency water. • Establish water distribution points and ration water if necessary. • If water service is restricted, attempt to provide potable water tankers or bottled water to the area. • Make arrangements to conduct bacteriological tests, in order to determine possible contamination. • Utilize backup power supply to operate pumps in conjunction with elevated storage.
Earthquake	• Assess the condition of the water supply system. • Complete the damage assessment checklist for reservoirs, water treatment plants, wells and boosters, system transmission and distribution. • Coordinate with OES utilities group or fire district to identify immediate fire fighting needs. • Isolate areas that will take the longest to repair and/or present a public health threat. Arrange to provide emergency water. • Prepare report of findings, report assessed damages, advise as to materials of immediate need and identify priorities including hospitals, schools and other emergency operation centers. • Take actions to preserve storage. • Determine any health hazard of the water supply and issue any “Boil Water Order” or “Unsafe Water Alert” notification to the customers, if necessary. • Cancel the order or alert information after completing comprehensive water quality testing. • Make arrangements to conduct bacteriological tests, in order to determine possible contamination.
Malevolent acts	• Assess threat or actual intentional contamination of the water system. • Notify local law enforcement to investigate the validity of the threat. • Get notification from public health officials if potential water contamination • Determine any health hazard of the water supply and issue any “Boil Water Order” or “Unsafe Water Alert” notification to the customers, if necessary. • Assess any structural damage from an intentional act. • Isolate areas that will take the longest to repair and or present a public health threat. Arrange to provide emergency water.

8.4 Prohibitions, Penalties, and Consumption Reduction Methods

The Act requires an analysis of mandatory prohibitions, penalties, and consumption reduction methods against specific water use practices which may be considered excessive during water shortages. Given that GSWC is an investor owned entity, it does not have the authority to pass any ordinances enacting specific prohibitions or penalties. In order to enact or rescind any prohibitions or penalties, GSWC would seek approval from CPUC to enact or rescind Rule No. 14.1, Mandatory Conservation and Rationing, which is included in Appendix F. When Rule No. 14.1 has expired or is not in effect, mandatory conservation and rationing measures will not be in force.

Rule No. 14.1 details the various prohibitions and sets forth water use violation fines, charges for removal of flow restrictors, as well as establishes the period during which mandatory conservation and rationing measures will be in effect. The prohibitions on various wasteful water uses, include, but are not limited to, the hose washing of sidewalks and driveways using potable water, and cleaning for filling decorative fountains. Table 8-4 summarizes the various prohibitions and the stages during which the prohibition becomes mandatory.

Table 8-4: Summary of Mandatory Prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Uncorrected plumbing leaks	II, III, IV
Watering which results in flooding or run-off in gutters, waterways, patios, driveway, or streets	II, III, IV
Washing aircraft, cars, buses, boats, trailers, or other vehicles without a positive shut-off nozzle on the outlet end of the hose	II, III, IV
Washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas in a manner which results in excessive run-off	II, III, IV
Irrigation of non-permanent agriculture	II, III, IV
Use of water for street watering with trucks or for construction purposes unless no other source of water or other method can be used	II, III, IV
Use of water for decorative fountains or the filling or topping off of decorative lakes or ponds	II, III, IV
Filling or refilling of swimming pools	II, III, IV

Note:
This table is based on the DWR Guidebook Table 36.

In addition to prohibitions during water supply shortage events requiring a voluntary or mandatory program, GSWC will make available to its customers water conservation kits as required by GSWC's Rule No. 20. GSWC will notify all customers of the availability of conservation kits.

In addition to prohibitions, Rule No. 14.1 provides penalties and charges for excessive water use. The enactment of these penalties and charges is contingent on approval of Rule 14.1 implementation by the CPUC. When the rule is in effect, violators receive one verbal and one written warning after which a flow-restricting device may be installed in the violator's service for a reduction of up to 50 percent of normal flow or 6 ccf per month, whichever is greater. Table 8-5 summarizes the penalties and charges and the stage during which they take effect.

Table 8-5: Summary of Penalties and Charges for Excessive Use

Penalties or Charges	Stage When Penalty Takes Effect
Penalties for not reducing consumption	III, IV
Charges for excess use	III, IV
Flat fine; Charge per unit over allotment	III, IV
Flow restriction	III, IV
Termination of Service	III, IV

Note:
This table is based on the DWR Guidebook Table 38.

In addition to prohibitions and penalties, GSWC can use other consumption reduction methods to reduce water use up to 50 percent. Based on the requirements of the Act, Table 8-6 summarizes the methods that can be used by GSWC in order to enforce a reduction in consumption, where necessary.

Table 8-6: Summary of Consumption Reduction Methods		
Consumption Reduction Method	**Stage When Method Takes Effect**	**Projected Reduction Percentage**
Demand reduction program	All Stages	N/A
Reduce pressure in water lines; Flow restriction	III, IV	N/A
Restrict building permits; Restrict for only priority uses	II, III, IV	N/A
Use prohibitions	II, III, IV	N/A
Water shortage pricing; Per capita allotment by customer type	II, IV	N/A
Plumbing fixture replacement	All Stages	N/A
Voluntary rationing	II	N/A
Mandatory rationing	III, IV	N/A
Incentives to reduce water consumption; Excess use penalty	III, IV	N/A
Water conservation kits	All Stages	N/A
Education programs	All Stages	N/A
Percentage reduction by customer type	III, IV	N/A

Note:
This table is based on the DWR Guidebook Table 37.

8.5 Revenue Impacts of Reduced Sales

Section 10632(g) of the Act requires an analysis of the impacts of each of the actions taken for conservation and water restriction on the revenues and expenditures of the water supplier. Because GSWC is an investor owned water utility and, as such, is regulated by the CPUC, the CPUC authorizes it to establish memorandum accounts to track expenses and revenue shortfalls caused by both mandatory rationing and voluntary conservation efforts. Utilities with CPUC-approved water management plans are authorized to implement a surcharge to recover revenue shortfalls recorded in their drought memorandum accounts. Table 8-7 provides a summary of actions with associated revenue reductions; while Table 8-8 provides a summary of actions and conditions that impact expenditures. Table 8-9 summarizes the proposed measures to overcome revenue impacts. Table 8-10 provides a summary of the proposed measures to overcome expenditure impacts.

Table 8-7: Summary of Actions and Conditions that Impact Revenue	
Type	**Anticipated Revenue Reduction**
Reduced sales	Reduction in revenue will be based on the decline in water sales and the corresponding quantity tariff rate
Recovery of revenues with CPUC approved surcharge	Higher rates may result in further decline in water usage and further reduction in revenue

Table 8-8: Summary of Actions and Conditions that Impact Expenditures	
Category	**Anticipated Cost**
Increased staff cost	Salaries and benefits for new hires required to administer and implement water shortage program
Increased O&M(1) cost	Operating and maintenance costs associated with alternative sources of water supply
Increased cost of supply and treatment	Purchase and treatment costs of new water supply

Notes:
1. Operations and maintenance.

Table 8-9: Proposed Measures to Overcome Revenue Impacts	
Names of Measures	**Summary of Effects**
Obtain CPUC approved surcharge	Allows for recovery of revenue shortfalls brought on by water shortage program
Penalties for excessive water use	Obtain CPUC approval to use penalties to offset portion of revenue shortfall

Table 8-10: Proposed Measures to Overcome Expenditure Impacts	
Names of Measures	**Summary of Effects**
Obtain CPUC approved surcharge	Allows for recovery of increased expenditures brought on by water shortage program
Penalties for excessive water use	Obtain CPUC approval to use penalties to offset portion of increased expenditures

8.6 Water-Use Monitoring Procedures

The Act asks for an analysis of mechanisms for determining actual reduction in water use when the Water Shortage Contingency Plan is in effect. Table 8-11 lists the possible mechanisms used by GSWC to monitor water use and the quality of data expected.

Table 8-11: Water-Use Monitoring Mechanisms

Mechanisms for Determining Actual Reductions	Type and Quality of Data Expected
Customer meter readings	Hourly/daily/monthly water consumption data for a specific user depending on frequency of readings
Production meter readings	Hourly/daily/monthly water production depending on frequency of readings; correlates to water use plus system losses

In addition to the specific actions that GSWC can undertake to verify level of conservation, GSWC can monitor long-term water use through regular bi-monthly meter readings, which give GSWC the ability to flag exceptionally high usage for verification of water loss or abuse.

Chapter 9: References

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