Final

2010 Urban Water Management Plan Update

Prepared for:

Goleta Water District

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Kennedy/Jenks Consultants

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Chapter 1: Introduction

This volume presents the 2010 Urban Water Management Plan (Plan) for the Goleta Water District (GWD) service area. This section describes the general purpose of the Plan, discusses Plan implementation, and provides general information about GWD and its service area. A list of acronyms and abbreviations is also provided.

GWD is a County Water District operating pursuant to the provisions of the California Water Code. GWD was formed in 1944 to take advantage of the water supply to be developed by the Federal Cachuma Project on the Santa Ynez River. GWD initially relied on local groundwater until the Cachuma Project began making deliveries in 1955. Since that time, the Cachuma Project has been and continues to be, GWD's primary water supply source. As described more fully in this document, GWD water supplies also include water from the State Water Project (SWP), recycled water, and groundwater.

GWD is located in the South Coast portion of Santa Barbara County with its western border adjacent to El Capitan State Park, its northern border along the foothills of the Santa Ynez mountains and the Los Padres National Forest, the City of Santa Barbara to the east, and the Pacific Ocean to the south (Figure 1-1). The service area encompasses approximately 29,000 acres, and provides water service to approximately 86,950 residents. GWD includes the City of Goleta, University of California, and Santa Barbara Airport; the remainder of GWD is located in unincorporated County of Santa Barbara. La Cumbre Mutual Water Company, El Capitan Mutual Water Company, and several other small private water purveyors are located within the GWD service area but these entities have their own supply, water distribution facilities, and customers; GWD does not serve these customers.

1.1 Purpose

An Urban Water Management Plan (UWMP) is a planning tool that generally discloses the actions of water management agencies. Every five years, water suppliers such as GWD are required to update the UWMP.[1] It provides managers and the public with a broad perspective on a number of water supply and demand issues. It is not a substitute for project-specific planning documents, nor was it intended to be when mandated by the State Legislature. For example, the Legislature mandated that a plan include a section which "describes the opportunities for exchanges or water transfers on a short-term or long-term basis." (California Urban Water Management Planning Act, Article 2, Section 10630(d).) The identification of such opportunities, and the inclusion of those opportunities in a general water service reliability analysis, neither commits a water management agency to pursue a particular water exchange/transfer opportunity, nor precludes a water management agency from exploring exchange/transfer opportunities not identified in the Plan. When specific projects are chosen to be implemented, detailed project plans are developed, environmental analysis, if required, is prepared, and financial and operational plans are detailed.

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

In short, this Plan is a management tool, providing a framework for potential action, but not functioning as a detailed project development or action. It is important that this Plan be viewed as a long-term, general planning document, rather than as an exact blueprint for supply and demand management. Water management in California is not a matter of certainty, and planning projections may change in response to a number of factors. From this perspective, it is appropriate to look at the Plan as a general planning framework, not a specific action plan. It is an effort to generally answer a series of planning questions including:

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

Using these "framework" questions and resulting answers, GWD will pursue feasible and cost-effective options and opportunities to meet demands. Specific planning efforts will be undertaken in regard to each option, involving detailed evaluations of how each option would fit into the overall supply/demand framework, how each option would impact the environment, and how each option would affect customers. The objective of these more detailed evaluations would be to find the optimum mix of conservation and supply programs to ensure the needs of GWD's customers are met.

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

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

A checklist to ensure compliance of this Plan with the Act requirements is provided in Appendix A.

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

GWD's mission is to provide an adequate supply of quality water to the present and future customers within the Goleta Water District service area. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the UWMP demonstrates that GWD is likely to achieve this goal over the next five years, given prevailing conditions. Under the Safe Water Supplies Ordinance (SAFE), whereby GWD is required to consider the availability of potable water supplies available for new customers every year, the 2011 Water Supply Management Plan, and the 2010 Groundwater Management Plan, GWD is well-positioned to monitor the pace of increasing water demands against supplies, climate considerations, or other factors that could impact its ability to achieve its core mission.

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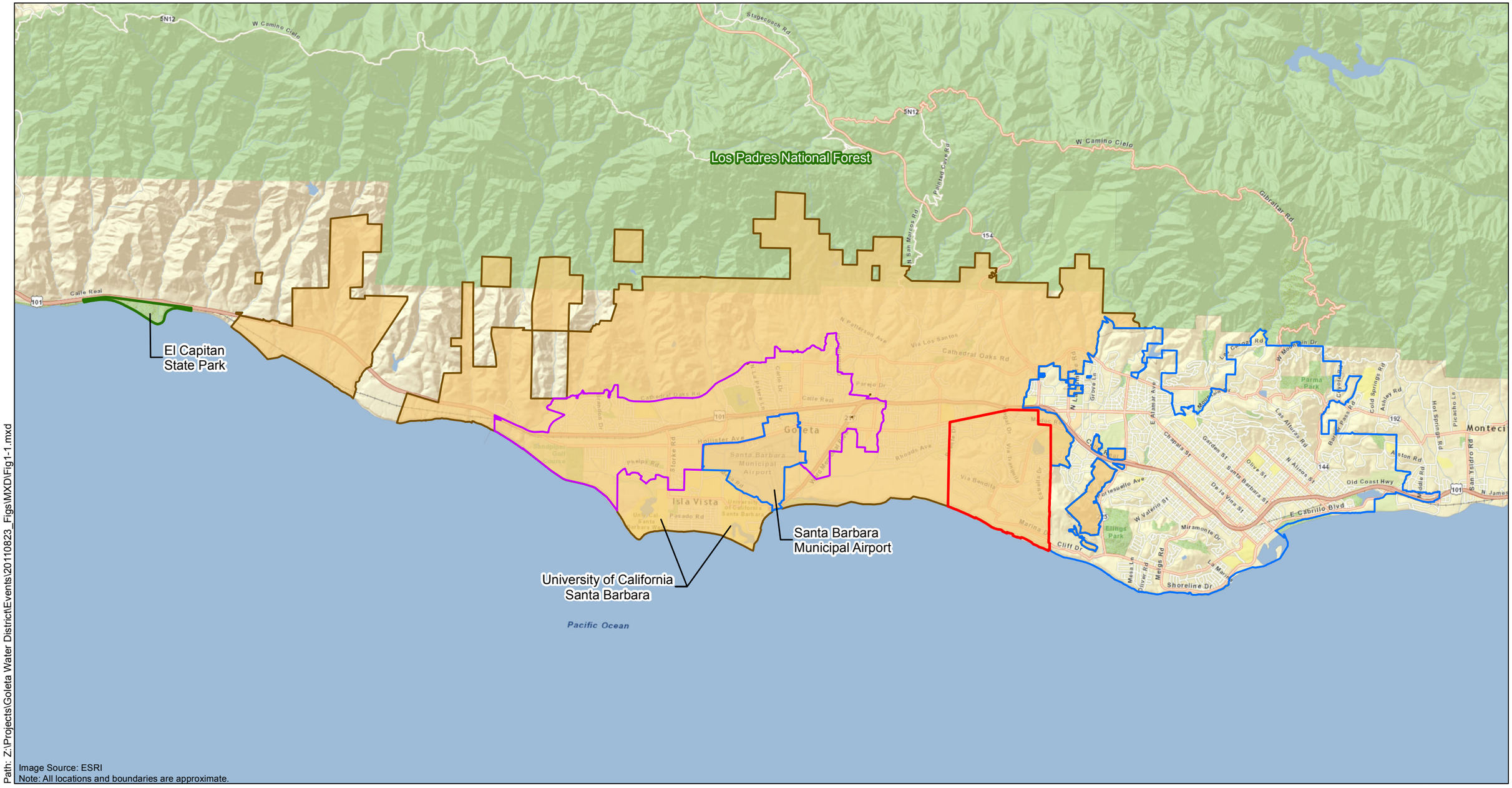

Image Source: ESRI
Note: All locations and boundaries are approximate.

Legend

- El Capitan Beach State Park
- La Cumbre Mutual Water Company
- City of Goleta
- City of Santa Barbara
- GWD Service Area Boundaries

N

0 4,250 8,500

Feet

Kennedy/Jenks Consultants

Goleta Water District
Santa Barbra County, California

Goleta Water District Service Area

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Figure 1-1

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1.2 Implementation of the Plan

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

1.2.1 Preparation of the Plan

As described earlier, GWD provides water to the City of Goleta, the University of California, the Santa Barbara airport (City of Santa Barbara property), and unincorporated portions of Santa Barbara County. These land use entities were notified of the GWD 2010 UWMP update. Agency coordination for this Plan is summarized in Table 1-1.

TABLE 1-1
AGENCY COORDINATION SUMMARY

	Received Copy of Draft	Contacted for Assistance	Sent Notice of Intent to Adopt	Attended Public Meetings	Commented on Draft
City of Goleta	✓		✓		
County of Santa Barbara	✓		✓		
City of Santa Barbara	✓		✓		
Cachuma Operations and Maintenance Board	✓		✓		
Carpinteria Valley Water District	✓		✓		
Central Coast Water Authority	✓	✓	✓		
El Capitan Mutual Water Company	✓		✓		
Goleta Sanitation District		✓			
La Cumbre Mutual Water Company	✓		✓		
Montecito Water District	✓		✓		
Santa Barbara County Water Agency	✓		✓		
Santa Ynez River Water Conservation District	✓		✓		
University of California Santa Barbara	✓		✓		

1.2.2 Public Outreach

GWD notified agencies within its service area, including the City of Goleta, Santa Barbara County, and the University of California of the opportunity to provide input regarding the Plan. Table 1-2 presents a timeline for public participation during the development of the Plan. A copy of the public outreach materials, including website postings and invitation letters, are included in Appendix B.

TABLE 1-2
PUBLIC PARTICIPATION TIMELINE

June 17, July 21, August 18, 2011	Elements of the UWMP	Review and input to UWMP components by Water Management and Long-Range Planning Committee
October 17, 2011	Preliminary Draft UWMP	Preliminary Draft released to solicit input
November 8, 2011	Public Hearing	UWMP considered for adoption by GWD's Board
November 8, 2011	Adoption of UWMP	Board adoption of 2010 UWMP per Resolution
December 8, 2011	Final UWMP	Final UWMP released

The components of public participation included:

Local Media

- Paid notice in the Santa Barbara News Press

Agency Outreach

- City of Goleta
- Santa Barbara County
- UC Santa Barbara

Public Availability of Documents

- Goleta Water District website

Following adoption, the Plan will be available during normal business hours at Goleta Water District administrative headquarters located at 4699 Hollister Avenue, Goleta, CA 93110.

1.2.3 Resources Maximization

As documented in Chapters 2 through 8 of this UWMP, GWD has demonstrated a long-term commitment to resource maximization. For many years, GWD has undertaken studies as well as actions to maximize the use of available resources. Studies and documents include the 2011 Water Supply Management Plan, the 2010 Water Conservation Plan, and the 2010 Groundwater Management Plan. Further, GWD has been making an effort to maximize the use of available resources while minimizing the use of imported water. In 1994, GWD became a participant in the Memorandum of Understanding Regarding Water Conservation in California (MOU), and a member of the California Urban Water Conservation Council (CUWCC). Signatories pledge to implement all cost effective Best Management Practices set forth in the MOU.

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

1.3 Goleta Water District Overview

As described previously, GWD is located in the South Coast portion of Santa Barbara County (Figure 1-1). The service area encompasses approximately 29,000 acres, and provides water service to approximately 86,950 residents. There are more than 16,600 active municipal and industrial customer accounts and 165 agricultural accounts within GWD. GWD serves water to the City of Goleta, University of California, and Santa Barbara Airport; the remainder of GWD is located in the unincorporated County of Santa Barbara. La Cumbre Mutual Water Company, El Capitan Mutual Water Company, and several other small private water purveyors are located within the GWD service area but manage their own supplies, facilities, and customers, and are not served by GWD.

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

Goleta Water District was formed by a vote of the people within the service area on December 17, 1944. GWD was established as a legal entity to represent the Goleta Valley and to contract with the Santa Barbara County Water Agency and the Bureau of Reclamation to participate in the Cachuma Project. The Santa Barbara County Water Agency was formed in 1945 and soon thereafter contracted with the Bureau of Reclamation to develop the Cachuma Project. The Cachuma Project began serving water to member agencies in 1955.

During the 1987 to 1992 drought, it became evident that Lake Cachuma would not be able to supply enough water in the event of a prolonged drought. In 1991, GWD customers voted to participate in the SWP. Thereafter the Central Coast Water Authority (CCWA) was formed in 1991 through a Joint Exercise of Powers Agreement among nine (9) public agencies in Santa Barbara County, including GWD. CCWA was specifically formed for the purpose of designing, building and operating the facilities needed to deliver water from the SWP to entities in Santa Barbara County.

1.4 Climate

The climate in GWD's service area is generally characterized as a Mediterranean coastal. Summers are mild and dry, and winters are cool. The average temperature is 59 degrees Fahrenheit. Average rainfall is about 16 inches per year. The average evapotranspiration (ETo) in the region is 44.61 inches per year (Table 1-3). The area is subject to wide variations in annual precipitation. For example, the area received only 5.6 inches of rain in 1990, but received over 40 inches of rain in 1983.

TABLE 1-3
CLIMATE DATA FOR THE GOLETA WATER DISTRICT

	Jan	Feb	Mar	Apr	May	Jun
Standard Monthly Average ETo[(a)]	1.67	2.24	3.43	4.94	4.99	5.24
Average Rainfall (inches)[(b)]	3.51	3.38	2.90	1.17	0.29	0.05
Average Temperature (Fahrenheit)[(b)]	52	54	55	57	60	62

	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Average ETo[(a)]	5.29	5.33	3.89	3.51	2.22	1.86	44.61
Average Rainfall (inches)[(b)]	0.03	0.05	0.23	0.55	1.65	2.55	16.36
Average Temperature (Fahrenheit)[(b)]	65	66	65	62	57	53	59

Notes:
(a) ETo (evapotranspiration) data provided Santa Barbara region, CIMIS Station #107 for years 1980 to 2010, http://wwwcimis.water.ca.gov/cimis.
(b) Average for Santa Barbara Airport weather station 047905 for years 1941 to 2010, http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7905

1.5 List of Abbreviations and Acronyms

The following abbreviations and acronyms are used in this report.

Act	California Urban Water Management Planning Act
AF	acre-feet
AFY	acre-feet per year
AMR	Automatic Meter Reading
AWWA	American Water Works Association
BMPs	Best Management Practices
CAT	Climate Action Team
CCWA	Central Coast Water Authority
ccf	hundred cubic feet
CCR	Consumer Confidence Report
CDPH	California Department of Public Health
CII	Commercial, Industrial and Institutional
COMB	Cachuma Operations and Maintenance Board
CPUC	California Public Utilities Commission
CUWCC	California Urban Water Conservation Council
DMM	Demand Management Measures
DOF	California Department of Finance
DWR	California Department of Water Resources

EPA	Environmental Protection Agency
ETo	Evapotranspiration
GIS	Geographic Information System
gpcd	gallons per capita per day
gpd	gallons per day
gpm	gallons per minute
GWD	Goleta Water District
HAA	Haloacetic acids
HECW	High-Efficiency Clothes Washer
HET	High-Efficiency Toilet
ID#1	Santa Ynez River Water Conservation District Improvement District No. 1
MCL	Maximum Contaminant Level
MF	Multi-family
MG	million gallons
MGD	million gallons per day
mg/L	milligrams per liter
MOU	Memorandum of Understanding Regarding Water Conservation in California
Plan	Urban Water Management Plan 2010
RWQCB	Regional Water Quality Control Board
SAFE	Safe Water Supplies Ordinance
SBX7-7	Water Conservation Bill of 2009
SF	Single Family
SWP	State Water Project
TDS	total dissolved solids
THM	Trihalomethanes
USGS	United States Geographical Survey
UWMP	Urban Water Management Plan
WWTP	Wastewater Treatment Plant

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Chapter 2: Water Use

This section describes historic and current water usage and the methodology used to project future demands within GWD's service area. Water usage is divided into sectors such as residential, commercial and landscape.

2.1 Population

GWD has a current service area population of approximately 86,950. GWD's service area population for years 1990, 2000, and 2010 was estimated using Census data. Census tracts within the GWD service area were identified using Geographic Information System (GIS) software. Those census tracts not fully within the GWD service area were mapped and evaluated. In those instances where the urbanized area of the census tract fell within the GWD service area and the rest of the census tract was generally rural, then the population of that census tract was assumed to be in the GWD. In those instances where the urbanized area of the census tract extended outside of the GWD boundary, a percentage of the population was assigned to GWD (i.e., if 80 percent of a census tract area fell within GWD then 80 percent of the population was assigned to GWD). Population for intervening years was linearly interpolated based on the population established for 1990, 2000, and 2010. Estimated historic population for the GWD service area is shown in Table 2-1. As Table 2-1 documents, average annual growth in the water service area has been relatively consistent, remaining below 1 percent per year for the period 2000 to 2010.

TABLE 2-1
HISTORIC POPULATION ESTIMATES IN
GOLETA WATER DISTRICT SERVICE AREA

2000	2002	2004	2006	2008	2010
79,874	81,241	82,631	84,045	85,483	86,946

2.1.1 Growth Estimates

Population is one component of future water demand. Other factors include economic conditions, land use policies, changes in technology, and water costs. This interplay of factors makes predicting future water use difficult, particularly over a 25-year period. For this UWMP, three different projection methods were evaluated:

1. Estimating water demand growth consistent with population projections of the Santa Barbara County Association of Governments
2. Estimating water demands using past water growth demand trends
3. Estimating growth in water demands using anticipated land use development

These three methodologies are further discussed in Appendix C. Based on the evaluation of these methodologies Goleta Water District has decided to consider demand using a range of potential future scenarios, resulting from forecasts made using historic population growth rates

and land-use based growth rates (Table 2-2) (called “Moderate” and “High” estimates in the tables below).

TABLE 2-2
PROJECTED POPULATION IN GOLETA WATER DISTRICT SERVICE AREA

Service Area Population	2010 (Current)	2015	2020	2025	2030	2035
Moderate Estimate[(a)]	86,946	90,480	94,157	97,984	101,967	106,111
High Estimate[(b)]	86,946	94,841	102,245	107,740	109,077	112,120

Notes:
(a) Based on Santa Barbara Association of Governments (SBCAG) 2002 Regional Growth Forecast, see Appendix C
(b) Assumes population grows in proportion to anticipated land use developments, see Appendix C

2.2 Historic Water Use

2.2.1 Historic Water Deliveries

State law requires that the UWMP illustrate water use across various classes of customers, including: single family residential, multi-family residential, agricultural, commercial/institutional, and landscape customers. In 2010, residential uses comprise approximately 47 percent of GWD’s total demand, commercial and institutional uses make up approximately 25 percent of demand, and agricultural uses make up approximately 18 percent of demand. Actual water deliveries in 2005 and 2010 are provided in Tables 2-3 and 2-4, respectively. All GWD accounts are metered.

TABLE 2-3
WATER DELIVERIES - ACTUAL 2005[(a)]

	Metered	
Water Use Sectors	# of accounts	Volume (AFY)
Single family	13,109	4,823
Multi-family	1,550	2,052
Commercial/Institutional	1,034	2,080
Landscape	153	263
Agriculture	162	2,050
Total	**16,008**	**11,268**

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

TABLE 2-4
WATER DELIVERIES - ACTUAL 2010[(a)]

Water use sectors	Metered # of accounts	Metered Volume (AFY)
Single family	13,340	4,349
Multi-family	1,579	1,766
Commercial/Institutional	1,006	3,336
Landscape	203	371
Agriculture	165	2,387
Total	**16,293**	**12,209**

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

2.2.2 Historic Sales

GWD has, on occasion, considered the sale or purchase of water with other water purveyors. As shown in Table 2-5, GWD sold 1,150 AF of SWP water in 2010 to other regional agencies.

TABLE 2-5
HISTORIC SALES TO OTHER WATER AGENCIES (AF)

Agency	2005	2006	2007	2008	2009	2010
Montecito Water District	0	0	700	0	0	400
Santa Ynez River Water Conservation District-Improvement District No. 1	0	0	0	0	0	400
City of Buelton	0	0	0	0	0	50
Santa Maria			288			
La Cumbre Mutual Water Company	0	0	485	300	0	300
Total	**0**	**0**	**1,473**	**300**	**0**	**1,150**

2.2.3 Historical Other Water Uses

Table 2-6 summarizes what the California Department of Water Resources refers to as “other” water uses, besides metered deliveries and sales to other agencies.

GWD has in place a SAFE Water Supplies Ordinance (SAFE), approved by GWD voters in 1991 and amended in 1994. The SAFE Ordinance allows GWD to provide new service connections at a rate not to exceed one (1) percent of total potable water supply when certain conditions are met. In addition, the SAFE Ordinance established an Annual Storage Commitment – a groundwater recharge requirement when the Central subbasin of the Goleta Groundwater Basin drops below 1972 levels. As demonstrated by GWD’s 2011 Water Supply Management Plan, the basin is currently above 1972 levels; therefore, GWD is not required to make the Annual Storage Commitment. The SAFE Ordinance is further discussed in Chapter 3.

TABLE 2-6
HISTORIC "OTHER" WATER USES (AF)

Water Use[(a)]	2005	2010
Saline Barriers	0	0
Groundwater Recharge[(b)]	0	0
Conjunctive Use	668	0
Recycled Water	1,030	785
System Operations and Losses	1,201	505
Total	**2,899**	**1,290**

Notes:
(a) Any water accounted for in Tables 2-3, 2-4, and 2-5 is not included in this table.
(b) GWD has in place a SAFE Water Supplies Ordinance (SAFE). The SAFE Ordinance established an Annual Storage Commitment – a requirement that at least 2,000 AFY of water be put towards groundwater recharge when the Central subbasin of the Goleta Groundwater Basin is below 1972 levels. The SAFE Ordinance requires that the Annual Storage Commitment permanently increase by two-thirds of any new demand. As of 2011 the Annual Storage Commitment was 2,373 AF. However, as demonstrated by the GWD 2011 Water Supply Management Plan (Figure 11-10, pg. 35), the basin is currently above 1972 levels and therefore there is not a requirement to recharge the Annual Storage Commitment.

GWD has historically participated in conjunctive use practices, whereby excess surface water during Lake Cachuma spill events is injected and stored in the Goleta Groundwater Basin for later use. Injection for conjunctive use purposes are documented in the GWD's 2010 Groundwater Management Plan, as well as annual reports pursuant to the Wright Judgment. As shown in Table 2-6, in 2005 GWD recharged 668 AF of Cachuma spill water. The spill water is not considered a "firm" supply and the recharge is not a regular demand.

As further detailed in Chapter 4, GWD has a relatively steady base of recycled water customers. For the last decade the amount of recycled water produced and delivered has remained relatively constant, with some variation due to rainfall.

GWD, like many water agencies, does have some unaccounted-for water. Unaccounted-for water is the difference between the amount of water produced and the amount of water billed to customers. Over the last five years unaccounted for water has been approximately six (6) percent of produced water within GWD's system (system loss was determined by comparing overall production to overall sales for 2006 to 2010). Sources of unaccounted-for water include:

- Hydrant testing and flushing
- Customer meter inaccuracies
- Leaks from water lines

2.2.4 Total Historical Water Use

Table 2-7 below presents information on all historic water uses for the years 2005 and 2010.

TABLE 2-7
HISTORIC TOTAL WATER USE (AF)

Water Use	2005	2010
Total Water Deliveries (from Tables 2-3 and 2-4)	11,268	12,209
Sales to Other Water Agencies (from Table 2-5)	0	1,150
Other Water Uses (from Table 2-6)	2,899	1,290
Total	**14,167**	**14,649**

2.3 Existing and Targeted Per Capita Water Use

The Water Conservation Bill of 2009 (SBX7-7) is one of four policy bills enacted as part of the November 2009 Comprehensive Water Package (Special Session Policy Bills and Bond Summary). The Water Conservation Bill of 2009 provides the regulatory framework to support the statewide reduction in urban per capita water use described in the 20 by 2020 Water Conservation Plan. Consistent with SBX7-7, each water supplier must determine and report its existing baseline water consumption and establish future water use targets in GPCD; reporting is to begin with the 2010 UWMP.

The two primary calculations required by SBX7-7 are:

1. Base Daily Water Use calculation (average GPCD used in past years)
2. Compliance Water Use Target (target gallons per capita per day in 2015 and 2020)

The Base Daily Water Use calculation is based on gross water use by an agency in each year and can be based on a ten-year average ending no earlier than 2004 and no later than 2010 or a 15-year average if ten percent of 2008 demand was met by recycled water. Base Daily Water Use must account for all water sent to retail customers, excluding:

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

It is at an agency's discretion whether or not to exclude agricultural water use from the Base Daily Water Use calculation. If agricultural water use is excluded from the Base Daily Water Use calculation it must also be excluded from the calculation of actual water use in later urban water management plans. GWD has elected to exclude agricultural water use from its calculation of Base Daily Water Use.

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

1. Eighty percent of the urban water supplier's baseline per capita daily water use
2. Per capita daily water use estimated using the sum of the following:

a. For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of DWR's 2016 report to the Legislature reviewing progress toward achieving the statewide 20 percent reduction target, this standard may be adjusted by the Legislature by statute.

b. For landscape irrigated through dedicated or residential meters or connections, water use efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in section 490 et seq. of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992.

c. For CII uses, a ten percent reduction in water use from the baseline CII water use by 2020.

3. Ninety-five percent of the applicable state hydrologic region target as stated in the state's April 30, 2009, draft *20 by 2020 Water Conservation Plan*. GWD falls within the Central Coast Hydrologic Region; 95% of the region target is 117 GPCD.

4. Reduce the 10 or 15-year Base Daily Per Capita Water Use a specific amount for different water sectors:

    a. Indoor residential water use to be reduced by 15 GPCD or an amount determined by use of DWR's "BMP Calculator".

    b. A 20 percent savings on all unmetered uses.

    c. A 10 percent savings on baseline CII use.

    d. A 21.6 percent savings on current landscape and water loss uses.

The Interim Water Use Target is set as a halfway point between the Base Daily Water Use GPCD and the 2020 Compliance Water Use Target GPCD.

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

2.3.1 Base Daily Per Capita Water Use for SBX7-7 Reduction

Consistent with SBX7-7, the 2010 UWMPs must provide an estimate of Base Daily Per Capita Water Use. This estimate utilizes information on population as well as base gross water use. For the purposes of this UWMP, population was estimated as described in Section 2.1.

The UWMP Act allows urban water retailers to evaluate their base daily per capita water use by using a 10- or 15-year period. A 15-year base period within the range January 1, 1990 to December 31, 2010 is allowed if recycled water made up 10 percent or more of the 2008 retail water delivery. If recycled water did not make up 10 percent or more of the 2008 retail water delivery, then a retailer must use a 10-year base period within the range January 1, 1995 to

December 31, 2010. Recycled water did not make up 10 percent of the 2008 delivery to the GWD retail service areas, and for this reason, Base Daily Per Capita Water Use has been based on a 10-year period. In addition, urban retailers must report daily per capita water use for a 5-year period from January 1, 2003 to December 31, 2010. This 5-year base period is compared to the Target Based Daily Per Capita Water Use to determine the minimum water use reduction requirement (this is described in more detail in the following sections).

Tables 2-8 and 2-9 summarize the Base Daily Water Use calculation for GWD. The period 1995 to 2004 has been selected for calculation of the 10-year base period while the period 2005 to 2009 has been selected for calculation of the 5-year base period. The 10-year average Base Daily Per Capita Water Use for GWD is 119 GPCD; the 5-year is 117 GPCD.

TABLE 2-8
BASE PERIOD RANGES

Base	Parameter	Value
10-Year Base Period	2008 Total Water Deliveries (AF)	15,255
	2008 Total Volume of Delivered Recycled Water (AF)	1,055
	2008 Recycled Water as a Percent of Total Deliveries (%)	7%
	Allowable Base Period (years)[(a)]	10
	Year Beginning Base Period Range	1995
	Year Ending Base Period Range[(b)]	2004
5-Year Base Period	Year Beginning Base Period Range	2005
	Year ending Base Period Range[(c)]	2009

Notes:
(a) If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater the first base period is a continuous 10- to 15-year period.
(b) The ending year must be between December 31, 2004 and December 31, 2010.
(c) The ending year must be between December 31, 2007 and December 31, 2010.

TABLE 2-9
BASE DAILY PER CAPITA WATER USE, 10-YEAR

Sequence Year	Calendar Year	Distribution System Population[(a)]	Daily System Gross Water Use (MGD)	Annual Daily Per Capita Water Use (GPCD)
1	1995	77,761	9.16	118
2	1996	78,179	8.98	115
3	1997	78,599	10.46	133
4	1998	79,022	10.40	132
5	1999	79,447	9.91	125
6	2000	79,874	9.78	122
7	2001	80,554	9.11	113
8	2002	81,241	9.57	118
9	2003	81,933	8.59	105
10	2004	82,631	9.22	112
	Base Daily Per Capita Water Use, 10-Year Average			*119*

Note:
(a) GWD's service area population estimated using 1990, 2000, and 2010 Census data.

Table 2-10 provides the data on the Maximum Allowable GPCD. The Maximum Allowable GPCD is based on 95 percent of the 5-year average base gross water use. In this case 95 percent of the 5-year GPCD is 111 GPCD (95% of 117).

TABLE 2-10
BASE DAILY PER CAPITA WATER USE, 5-YEAR

Sequence Year	Calendar Year	Distribution System Population[(a)]	Daily System Gross Water Use (MGD)	Annual Daily Per Capita Water Use (GPCD)
1	2005	83,335	9.53	114
2	2006	84,045	8.58	102
3	2007	84,761	10.74	127
4	2008	85,483	10.74	126
5	2009	86,211	10.10	117
	Base Daily Per Capita Water Use, 5-Year Average			*117*
	Maximum Allowable GPCD (95% of 5-year Average)			*111*

Note:
(a) GWD's service area population estimated using 1990, 2000, and 2010 Census data.

2.3.2 Compliance Water Use Targets for SBX7-7 Reduction

In addition to calculating base gross water use, the "20 by 2020" legislation requires that a retail water supplier identify its demand reduction targets. The methodologies for calculating demand reduction targets were described above. GWD is choosing to meet SBX7-7 targets as an individual agency rather than as part of a regional alliance. GWD has selected Method 3 to calculate the agency's 2020 Compliance Water Use Target and Interim Water Use Target.

The Compliance Water Use Target under Method 3 is 95 percent of the applicable state hydrologic region target as stated in the state's April 30, 2009, draft *20 by 2020 Water Conservation Plan*. GWD falls within the Central Coast Hydrologic Region; 95 percent of the region target is 117 GPCD.

However, as described earlier, the Maximum Allowable GPCD is 111. The calculated Compliance Water Use Target, under Method 3 (117 GPCD) is greater than the Maximum Allowable GPCD. In these cases the Compliance Water Use Target must be set at the Maximum Allowable GPCD, or 111. Results are as follows:

- Interim Water Use Target, 115 GPCD
- Compliance Water Use Target, 111 GPCD

Over the last 5 years GWD has averaged 117 GPCD, meaning that in order to meet the water use targets prescribed by SBX7-7, GWD will have to reduce current water use by approximately 2 percent by 2015 and by approximately 5 percent by 2020.

2.4 Projected Water Use

2.4.1 Projected Water Demands

As described in Section 2.1, GWD has decided to consider future demand given both a "moderate" growth rate and a "high" growth rate (see Appendix C). Tables 2-11 and 2-12 provide the range of anticipated water use, by sector, for years 2015 through 2035. Notably, the degree of growth forecasted in each customer class is driven by underlying assumptions regarding growth trends and land use. For example, Table 2-11 assumes water demand growth proceeds relatively evenly across customer classes. Comparatively, Table 2-12 forecasts a greater degree of water demand growth in the Commercial / Institutional customer class, due to projects and policies outlined in local General Plans and the UC Santa Barbara Long Range Development Plan. Recycled water demand is not included in Tables 2-11 and 2012; for recycled water demand see Table 2-13.

TABLE 2-11
PROJECTED WATER DEMAND BY SECTOR – MODERATE ESTIMATE (AFY)

Water Use Type	Current[(a)]	2015	2020	2025	2030	2035
Single Family Residential	4,757	4,950	5,151	5,361	5,579	5,805
Multi-Family Residential	1,910	1,988	2,069	2,153	2,240	2,331
Commercial/Institutional	3,252	3,384	3,522	3,665	3,814	3,969
Park and Landscape Irrigation[(b)]	375	375	375	375	375	375
Agriculture[(a)]	2,848	2,848	2,848	2,848	2,848	2,848
Total Estimated Demand without Conservation	*13,142*	*13,546*	*13,965*	*14,402*	*14,856*	*15,329*
Conservation (2% by 2015, 5% by 2020)		*(271)*	*(698)*	*(720)*	*(743)*	*(766)*
Total Estimated Demand with Conservation		*13,275*	*13,267*	*13,682*	*14,113*	*14,562*

Notes:
(a) Average sales data years 2006-2010.
(b) Park and Landscape Irrigation water use and Agricultural water use set at average use 2006-2010.

TABLE 2-12
PROJECTED WATER DEMAND BY SECTOR – HIGH ESTIMATE (AFY)

Water Use Type	Current[(a)]	2015	2020	2025	2030	2035
Single Family Residential	4,757	4,973	5,178	5,381	5,411	5,443
Multi Family Residential	1,910	2,196	2,448	2,691	2,793	2,895
Commercial/Institutional	3,252	3,940	4,597	4,978	5,048	5,375
Park and Landscape Irrigation[(b)]	375	375	375	375	375	375
Agriculture[(b)]	2,848	2,848	2,848	2,848	2,848	2,848
Total Estimated Demand without Conservation	*13,142*	*14,332*	*15,447*	*16,274*	*16,476*	*16,936*
Conservation (2% by 2015, 5% by 2020)		*(287)*	*(772)*	*(814)*	*(824)*	*(847)*
Total Estimated Demand with Conservation		*14,045*	*14,675*	*15,460*	*15,652*	*16,089*

Notes:
(a) Average sales data years 2006-2010.
(b) Park and Landscape Irrigation water use and Agricultural water use set at average use 2006-2010.

2.4.2 Projected Sales and Other Water Uses

GWD does not anticipate any regular or large sales to other agencies in the future. GWD will consider selling unneeded water on a short-term basis when projected or actual supplies exceed GWD demand and ability to inject groundwater. As in the past, GWD does not anticipate future water demand related to saline barriers, groundwater recharge operations or conjunctive use. For the purpose of projections, unaccounted-for water is assumed to be approximately six (6) percent of total sales. Table 2-13 shows projected sales and other water uses.

TABLE 2-13
PROJECTED SALES AND "OTHER" WATER USES (AFY)

Water Use[a]	Current	2015	2020	2025	2030	2035
Sales to Other Agencies[b]	0	0	0	0	0	0
Saline Barriers	0	0	0	0	0	0
Groundwater Recharge[c]	0	0	0	0	0	0
Conjunctive Use	0	0	0	0	0	0
Recycled Water [c]	1,070	1,070	1,070	1,070	1,070	1,070
System Operation and Losses[e]	789	884	903	939	958	984
Total	**1,859**	**1,954**	**1,973**	**2,009**	**2,028**	**2,054**

Notes:
(a) Any water accounted for in Tables 2-11 and 2-12 is not included in this table.
(b) Though there were sales to other agencies in year 2010 no future sales are projected.
(c) Assumes groundwater above 1972 levels and SAFE Annual Storage Commitment not triggered.
(d) Set at highest historic use 1995 to 2010.
(e) Loss in year 2010 based on comparison of production versus sales. All other years assumed to be 6% of potential demand. Potential demand set as average of moderate and high demand estimates.

2.4.3 Total Projected Water Use

Table 2-14 presents the "moderate" estimate of projected water demand for the years 2015 to 2035; Table 2-15 presents the "high" estimate.

TABLE 2-14
TOTAL PROJECTED WATER USE – MODERATE ESTIMATE (AFY)

Water Use	Current	2015	2020	2025	2030	2035
Total Water Deliveries (from Table 2-11)[a]	13,142	13,275	13,267	13,682	14,113	14,562
Sales to Other Water Agencies (from Table 2-13)	0	0	0	0	0	0
Additional water uses and losses (from Table 2-13)	1,859	1,954	1,973	2,009	2,028	2,054
Total	**15,001**	**15,229**	**15,240**	**15,690**	**16,141**	**16,617**

Note: (a) Assumes conservation.

TABLE 2-15
TOTAL PROJECTED WATER USE – HIGH ESTIMATE (AFY)

Water Use	Current	2015	2020	2025	2030	2035
Total Water Deliveries (from Table 2-12)[(a)]	13,142	14,045	14,675	15,460	15,652	16,089
Sales to Other Water Agencies (from Table 2-13)	0	0	0	0	0	0
Additional water uses and losses (from Table 2-13)	1,859	1,954	1,973	2,009	2,028	2,054
Total	**15,001**	**15,999**	**16,647**	**17,469**	**17,679**	**18,143**

Note: (a) Assumes conservation.

2.4.4 Water Use Projections for Low Income Households

Senate Bill 1087 requires that water use projections of an 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. The water demands described for low income households in the paragraphs below are a subset of the water demand estimates of Tables 2-14 and 2-15.

Approximately 82 percent of GWD service area is comprised of unincorporated County of Santa Barbara, the remainder of the service area (18 percent) is primarily within the City of Goleta. Based on 2000 Census Data, the County of Santa Barbara housing element estimates that "extremely low", "very low" and "low" income households make up approximately 33.5 percent of all households in the City of Goleta and unincorporated county area (County of Santa Barbara 2010 page 26). However, to meet regional housing needs goals the County estimates that 44 percent of new housing units would need to be suitable for extremely low, very low, or low income residents (County of Santa Barbara 2010 page 69). The City of Goleta also updated its housing element in November 2010. In order to meet its regional housing needs goals, Goleta estimates that 40 percent of new housing units would need to be suitable for extremely low, very low, or low income residents (City of Goleta 2010 page 10A-63).

To estimate the future number of new low-income households in the Goleta Water District a weighted percentage was calculated as shown in Table 2-16.

TABLE 2-16
WEIGHTED PERCENTAGE OF LOW-INCOME HOUSEHOLDS

	% GWD in Jurisdiction	% Future Housing Units Low Income	Weighted Percentage Low-Income
City of Goleta	18.0%	40.0%	7.2%
Santa Barbara County	82.0%	44.0%	36.1%
Estimate % of future housing units in GWD that will be low income			*43.3%*

The weighted average of 43.3 percent was used for projections of water demand for single-family and multi-family customers from very low and low-income households. Table 2-17 presents projections of future low-income household water demands assuming the moderate estimate of growth and Table 2-18 presents the potential demand assuming the high estimate of growth.

TABLE 2-17
PROJECTIONS OF FUTURE LOW-INCOME HOUSEHOLD WATER USE – MODERATE ESTIMATE (AFY)

Water Use[(a)]	2015	2020	2025	2030	2035
Estimated Very Low and Low-Income Household Water Use	115	227	348	474	604

Note: (a) Assumes conservation.

TABLE 2-18
PROJECTIONS OF FUTURE LOW-INCOME HOUSEHOLD WATER USE – HIGH ESTIMATE (AFY)

Water Use[(a)]	2015	2020	2025	2030	2035
Estimated Very Low and Low-Income Household Water Use	213	395	578	632	687

Note: (a) Assumes conservation.

Further, GWD will not deny nor condition approval of water services, nor 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:

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

2.4.5 Other Factors Affecting Water Usage

Two other factors that affect water usage are weather and conservation practices. Historically, when the weather is hot and dry, water usage increases. The amount of increase varies according to the number of consecutive years of hot, dry weather and the conservation activities imposed. During cool and wet years, historical water usage decreases to reflect less water usage for exterior landscaping and agricultural uses. Past studies by GWD have indicated that during dry years demand increases by 7 percent above normal.

In recent years, water conservation has become an increasingly important factor in water supply planning in California. Since the 2005 UWMP, there have been a number of regulatory changes related to conservation including new standards for plumbing fixtures, a state universal retrofit ordinance[2], new Green Building standards, demand reduction goals and more. In addition, the California Plumbing Code has instituted requirements for new construction that mandate the installation of ultra low-flow toilets and low-flow showerheads.

Per capita residential, commercial, and industrial usage can be expected to decrease as a result of the implementation of more aggressive water conservation practices.

[2] Under Senate Bill 407 passed in October 2009 and signed into law by Governor Arnold Schwarzenegger, starting in January 2014 toilets and urinals across the state must meet efficiency standards as a condition of receiving a certificate of occupancy. The legislation requires that a seller or transferor of single-family residential real property, multifamily residential real property, or commercial real property disclose to a purchaser or transferee, in writing, specified requirements for replacing plumbing fixtures, and whether the property includes noncompliant plumbing.

Chapter 3: Water Resources

This section describes the water resources available to GWD for the 25-year period covered by the Plan. These are summarized in Table 3-1 and discussed in more detail below. Both currently available and planned supplies are discussed.

TABLE 3-1
SUMMARY OF CURRENT AND PROJECTED WATER SUPPLIES (AFY)

Water Supply Source	2010	2015	2020	2025	2030	2035
Existing Supplies						
Cachuma Project Water	9,322	9,322	9,322	9,322	9,322	9,322
State Water Project Water	3,800	3,800	3,800	3,800	3,800	3,800
Groundwater	2,350	2,350	2,350	2,350	2,350	2,350
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Total Existing Supplies	*16,622*	*16,622*	*16,622*	*16,622*	*16,622*	*16,622*
Planned Supplies						
Potable Water Projects	0	0	0	0	0	0
Total Planned Supplies	*0*	*0*	*0*	*0*	*0*	*0*
Total Estimated Supplies	**16,622**	**16,622**	**16,622**	**16,622**	**16,622**	**16,622**

3.1 GWD Plans and Policies

Wright Judgment. GWD has a current water right to 2,350 AFY of groundwater from the Goleta Groundwater basin under the terms of the Wright Judgment. Unexercised groundwater rights at the end of a year revert to a stored water right in the basin. GWD can also store water by injecting water in the basin for later extraction. The amount of water stored in the basin is reported annual by GWD; as of 2009 GWD storage in the basin was 43,253 AF (GWD 2011). The details of how both the Wright Judgment and the SAFE Ordinance affect groundwater use by GWD are contained in GWD's and La Cumbre Mutual Water Company's Groundwater Management Plan for the Goleta Groundwater Basin (Appendix D).

SAFE Ordinance. The SAFE Ordinance directs how GWD manages groundwater. The SAFE Ordinance specifies under what conditions groundwater is either pumped or stored. The key determining factors are groundwater elevations in the basin and the availability of Cachuma water in any year. When groundwater elevations are below those measured in 1972 groundwater cannot be pumped and a pre-determined amount of water must be stored in the basin as a drought buffer. In any year when groundwater levels are below 1972 levels the "Annual Storage Commitment" is triggered. The Annual Storage Commitment requires that at least 2,000 AF be replenished. However, SAFE requires that the Annual Storage Commitment increase by two thirds of any new potable water demand. As of 2011, the Annual Storage Commitment was 2,378 AF (GWD 2011). When groundwater levels are below those of 1972, SAFE requires that any SWP in excess of 3,800 AFY be stored in the Goleta Groundwater Basin until the basin is replenished to its 1972 levels. However, even when groundwater elevations are below 1972 levels, SAFE allows groundwater pumping when there are reduced

deliveries of Cachuma water. The Groundwater Management Plan specifies which wells to use in determining groundwater elevations in 1972 and in subsequent years (GWD 2010). Finally, for planning purposes, SAFE requires that SWP supplies be estimated as no more than 3,800 AFY.

Water Supply Management Plan. In 2011 GWD developed a water supply management strategy based on an extensive evaluation of its various supplies, supply reliability, drought scenarios, and anticipated demand. The Water Supply Management Plan used a combination of the Santa Ynez River Model for deliveries from the Cachuma Project and the State Water Project Delivery Reliability Report for the SWP. The Water Supply Management Plan recommends that in a normal year, when groundwater is above 1972 levels, Cachuma water sources be the first utilized, then groundwater, and then SWP. In a normal year, when groundwater is below 1972 levels, GWD would first use Cachuma water sources and then SWP. In a dry year GWD would use as much Cachuma water as available and maximize available groundwater, with SWP use the last priority.

3.2 Wholesale Water Supplies

3.2.1 Cachuma Project Water

The majority of GWD's water supply is from the Cachuma Project which was constructed by the Bureau of Reclamation on the Santa Ynez River in the early 1950's. The Cachuma Project consists of Bradbury Dam, Tecolote Tunnel, South Coast Conduit, Lake Cachuma, and various water conveyance facilities. The reservoir has a capacity of approximately 190,000 AF (GWD 2005). Cachuma reservoir is operated by the Cachuma Operations and Maintenance Board (COMB) under contract with Reclamation.

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

Water is diverted from Lake Cachuma to the South Coast through the Tecolote Tunnel, which extends approximately 6.4 miles through the Santa Ynez Mountains to the headworks of the South Coast Conduit at Glen Annie reservoir. The South Coast Conduit extends for a distance of approximately 24 miles from Goleta to Carpinteria. The South Coast Conduit delivers water to GWD at the Corona del Mar Treatment Plant. A turnout at Glen Annie Reservoir supplies raw water that is chlorinated by GWD prior to delivery to agricultural customers.

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

Normal Cachuma deliveries to GWD are 9,322 AFY; however for the period 1997 to 2008 average deliveries have been 10,675 AFY with the addition of spill water (GWD 2011). Given that the availability of spill water is difficult to predict, the District does not rely on this water resource for long-range planning purposes.

3.2.2 State Water Project Water

In 1991 residents in the GWD voted to purchase a project allotment of 4,500 AFY from the SWP. The SWP conveyance facilities to Cachuma Lake were completed in 1997 by the CCWA. The CCWA is a California Joint Powers Agency formed by its nine public agency members, including GWD. CCWA was formed to construct the necessary facilities to deliver SWP to its members and now operates and maintains the facilities. SWP water deliveries to Santa Barbara County, including GWD, began in 1997. SWP water is commingled with Cachuma Project water and conveyed through the Tecolote Tunnel to the South Coast Conduit where it is delivered to the Corona del Mar Water Treatment Plant.

GWD receives SWP water through a Water Supply Agreement with the CCWA. GWD's annual project allotment (also called "Table A Amount") is 4,500 AFY. Table A refers to the table in each SWP contract that lists the maximum amount of water an agency can request each year. GWD also has a drought buffer amount of 450 AFY through CCWA and 2,500 AF of special drought buffer with DWR.

The SWP is the largest state-built, multi-purpose water project in the country. It was authorized by the California State Legislature in 1959, with the construction of most facilities completed by 1973. Today, the SWP includes 34 storage facilities, reservoirs and lakes, 20 pumping plants, 4 pumping-generating plants, 5 hydro-electric plants and approximately 700 miles of aqueducts and pipelines. The primary water source for the SWP is the Feather River, a tributary of the Sacramento River. Storage released from Oroville Dam on the Feather River flows down natural river channels to the Sacramento-San Joaquin River Delta (Delta). While some SWP supplies are pumped from the northern Delta into the North Bay Aqueduct, the vast majority of SWP supplies are pumped from the southern Delta into the 444-mile-long California Aqueduct. Near Kettleman City, the Coastal Branch Aqueduct splits from the California Aqueduct for water delivery to agricultural areas to the west and municipal and industrial water users in San Luis Obispo and Santa Barbara counties.

The amount of SWP water delivered to State Water Contractors in a given year depends on a number of factors, including the demand for the supply, amount of rainfall, snowpack, runoff, water in storage, pumping capacity from the Delta, and legal/regulatory constraints on SWP operation. Water delivery reliability depends on three general factors: the availability of water, the ability to convey water to the desired point of delivery, and the magnitude of demand for the water. Urban SWP contractors' requests for SWP water, which were low in the early years of the SWP, have been steadily increasing over time. Regulatory constraints have changed over time, becoming more restrictive.

Since the last round of UWMPs was prepared in 2005, the California Department of Water Resources has twice updated its State Water Project Delivery Reliability Report. The biennial Report assists SWP contractors in assessing the reliability of the SWP component of their overall supplies. The 2009 SWP Reliability Report updates DWR's estimate of the current

(2009) and future (2029) water delivery reliability of the SWP. The updated analysis shows that the primary component of the annual SWP deliveries (referred to as Table A deliveries) will be less under current and future conditions, when compared to the preceding report (State Water Project Delivery Reliability Report 2007). The report discusses factors having the potential to affect SWP delivery reliability:

- Restrictions on SWP and Central Valley Project (CVP) operations due to State regulation and federal biological opinions to protect endangered fish such as Delta smelt and spring-run salmon;
- Climate change and sea level rise, which is altering the hydrologic conditions in the State;
- The vulnerability of Delta levees to failure due to floods and earthquakes.

"Water delivery reliability" is defined as the annual amount of water that can be expected to be delivered with a certain frequency. SWP delivery reliability is calculated using computer simulations based on 82 years of historical data.

The 2009 SWP Reliability Report recognizes continuing challenges to the ability of the SWP to deliver full contractual allotments of SWP water. For current conditions, the dominant factor for these reductions is the restrictive operational requirements contained in the federal biological opinions. Deliveries estimated for the 2009 Report expressly account for the operational restrictions of the biological opinions issued by the U.S. Fish and Wildlife Service in December 2008 and the National Marine Fisheries Service in June 2009 governing the SWP and Central Valley Project operations.

For future conditions, the 2009 SWP Reliability Report conservatively assumes that the restrictions imposed by the biological opinions will still be in place, and includes the potential effects of climate change to estimate future deliveries. The changes in run-off patterns and amounts are included along with a potential rise in sea level. Sea level rise has the potential to require more water to be released to repel salinity from entering the Delta in order to meet the water quality objectives established for the Delta. The 2005 SWP Reliability Report did not include any of these potential effects. For the 2007 SWP Reliability Report, the changes in run-off patterns and amounts were incorporated into the analyses, but the potential rise in sea level was not.

These updated analyses in the 2009 SWP Reliability Report indicate that the SWP, using existing facilities operated under current regulatory and operational constraints and future anticipated conditions, and with all contractors requesting delivery of their full Table A amounts in most years, could deliver 60 percent of Table A amounts on a long-term average basis.

Based on DWR's 2009 Delivery Reliability Report, in its 2010 UWMP CCWA has estimated the following long-term average water imported supplies for GWD (Table 3-2).

TABLE 3-2
ESTIMATES FROM CCWA ON SWP SUPPLIES AVAILABLE (AFY)
(LONG-TERM AVERAGE)

Wholesale Source	Contracted Volume	2010	2015	2020	2025	2030	2035
Agreement with CCWA	4,500 Table A plus 2,500 drought buffer	4,705	4,659	4,612	4,566	4,520	4,473

Source: CCWA 2011.

Based on pipeline capacity, GWD can only take about 4,500 AFY of SWP. However, the SAFE Ordinance requires that for planning purposes 3,800 AFY of SWP deliveries be considered the maximum amount expected in a normal year. This UWMP is consistent with the SAFE Ordinance and the recently prepared Water Supply Master Plan and assumes 3,800 AFY is available in a normal year during the planning period (2010 to 2035).

3.3 Groundwater

The Goleta Groundwater Basin underlies the Goleta Coastal Plain (Figure 3-1). The basin is bounded on the north by bedrock of the Santa Ynez Mountains and to the south by uplifted bedrock along the More Ranch Fault. Tertiary-age bedrock forms the western boundary. The eastern boundary consists of bedrock uplifted along the Modoc Fault. The basin is approximately eight miles long and three miles wide. Basin groundwater rights were adjudicated in the Wright Judgment (Appendix D). There are three subbasins, the North, Central, and West though the North and Central basins are often handled as a single subbasin.

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

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

Groundwater levels have been collected from wells in the Goleta Groundwater Basin since the 1940s. As of May 2011, groundwater levels in the North, Central, and West subbasins are near historic highs. In the Central Basin (the primary basin for water supply) groundwater levels are high but are well below land surface and well below sea level. More Ranch Fault is thought to protect the basin from seawater intrusion. The Goleta Groundwater Basin is not identified as in overdraft by DWR (DWR 2003).

GWD currently has five fully operational groundwater production wells. Well extraction and treatment capacity is about 300 AF a month (GWD 2011). The wells are located in the North and Central subbasins. The same wells used for extracting groundwater can be used for injection. Historically, the source water for injection has been spill water from Cachuma. Since the drought of 1991 GWD has largely foregone pumping the basin (Table 3-3). As a result there is a significant amount of groundwater in the basin that GWD has the right to pump (over 43,000 AF as of 2009), subject to the 300 AF per month capacity limitations previously discussed.

Based on the results of the Groundwater Management Plan (GWD 2010), GWD anticipates an average year groundwater yield of 2,350 AF (the GWD allowed base extraction under the Wright Judgment).

TABLE 3-3
HISTORIC GROUNDWATER PRODUCTION GWD (AFY)

Basin Name	*Metered or Unmetered?*	2005	2006	2007	2008	2009	2010
GGWB	Metered	0	46	438	1,888	1,987	0
Groundwater as Percent of Total Water Supply		*0%*	*<1%*	*3%*	*14%*	*14%*	*0%*

Based on the Water Supply Management Plan, GWD anticipates on average pumping up to 2,350 AF in future Normal Years (see Table 3-4). By not taking all of its groundwater entitlement in an average year, GWD anticipates maintaining a healthy drought buffer in the Goleta Groundwater Basin. Given potential variations in demand, additional amounts could be pumped from the basin to serve customers, subject to SAFE limitations and pumping capacity constraints; however, GWD does not currently anticipate the need to do so.

TABLE 3-4
ANTICIPATED GROUNDWATER PRODUCTION GWD (AFY)

Basin Name	*Metered or Unmetered?*	2010	2015	2020	2025	2030	2035
GGWB	Metered	0	900	900	900	900	2,350
Groundwater as Percent of Total Water Supply		*0%*	*5%*	*5%*	*5%*	*5%*	*5%*

Source: GWD 2011, Table 9-1.

3.4 Recycled Water

GWD has been serving recycled water since 1995. The recycled water production capacity is approximately 3,000 AFY. However, the ability to fully utilize recycled water is limited by recycled water use patterns, which are typically condensed into a 12- rather than a 24-hour period, and are driven by the irrigation season. While storage is available to address daily needs, storage is not available to address seasonal variability in irrigation demand. Currently GWD is delivering approximately 1,000 to 1,150 AFY and it could require additional infrastructure to deliver recycled water in excess of 1,150 AFY.

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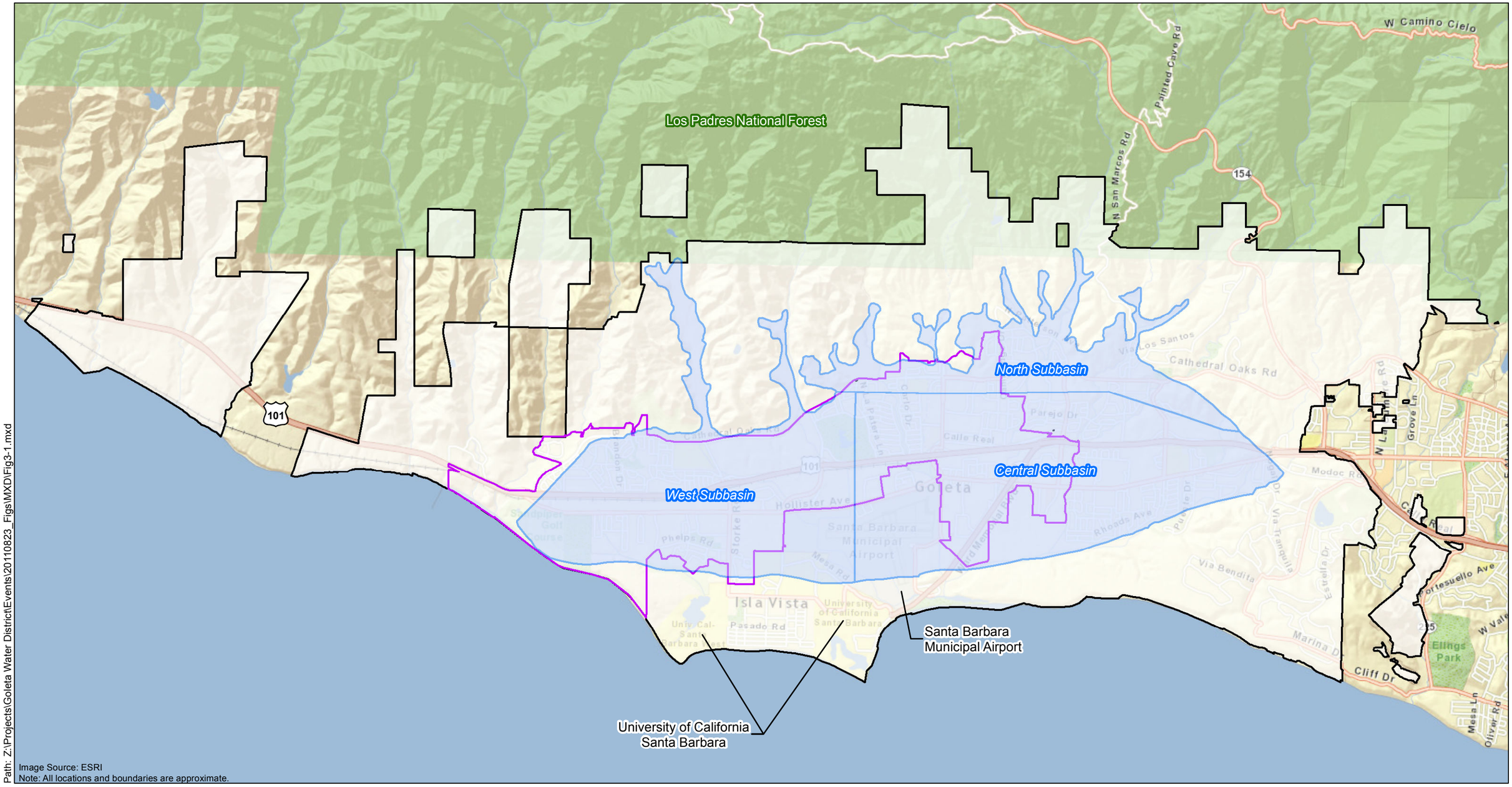

Legend

- Goleta Groundwater Basin
- City of Goleta
- GWD Service Area Boundaries

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Miles

Kennedy/Jenks Consultants

Goleta Water District
Santa Barbra County, California

Goleta Groundwater Basin

K/J: 1189023*00
September 2011

Figure 3-1

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3.5 Transfers and Exchanges

GWD has, on occasion, considered the sale or purchase of water with other water purveyors. In most cases, the transactions involved short-term needs or opportunities. Short-term water purchases from a willing seller is one action that could be considered, in the event of a projected or actual water shortage. Similarly, GWD could consider selling unneeded water on a short-term basis when projected or actual supplies are in excess of GWD demand. Completion of an exchange, transfer, purchase or sale of water involving an outside agency or party would require approval by the Board of Directors.

GWD has two categories of water exchange or transfers:

1. Exchanges or Transfers among Cachuma Project Member Units. GWD has the ability to purchase water from other Cachuma Project Member Units in the event of a need, or to sell unneeded water to other Cachuma Member Units. Cachuma Member Units include GWD, Carpinteria Valley Water District, Montecito Water District, City of Santa Barbara, and ID#1. This type of transaction could occur when there is a willing seller and buyer. Cachuma Member Units can readily transfer water to one another because all of the Member Units have water stored in Cachuma Lake; these transactions do not require the approval of the Bureau of Reclamation.

2. Exchanges or Transfers among SWP Contractors. GWD can purchase or sell SWP water from other SWP contractors in the state under the DWR Turnback Pool Program. Under this program SWP contractors can sell water at anytime to other SWP contractors, provided the buyer has the ability to convey the water. This type of transaction is coordinated by the CCWA on behalf of the local SWP contractors. Each year, DWR notifies CCWA of the anticipated SWP deliveries to its members, including any SWP water for sale by other SWP contractors. GWD can sell up to the amount of SWP water that is available to GWD in that particular year and the sale is subject to approval by CCWA. The CCWA contractors can also sell and exchange water among themselves. In the past, GWD has sold water to other CCWA contractors.

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

3.6 Total Anticipated Water Supply

The total anticipated water supply for GWD from imported water, groundwater and recycled water is shown in Table 3-5.

TABLE 3-5
TOTAL PROJECTED WATER SUPPLIES (AF)

Water Supply Source	2010	2015	2020	2025	2030	2035
Cachuma Project Water	9,322	9,322	9,322	9,322	9,322	9,322
State Water Project Water	3,800	3,800	3,800	3,800	3,800	3,800
Groundwater	2,350	2,350	2,350	2,350	2,350	2,350
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Total	**16,622**	**16,622**	**16,622**	**16,622**	**16,622**	**16,622**

3.7 Planned Water Supply Projects and Programs

At the direction of its Board, GWD will investigate and evaluate potentially feasible means of enhancing water supplies. Currently GWD does not have any short term plans to develop new water supplies. In addition, GWD will focus on demand management and achieving permanent conservation.

3.8 Desalinated Water

The California UWMP Act requires a discussion of potential opportunities for use of desalinated water (Water Code Section 10631[i]). GWD participated in the financing of the City of Santa Barbara's seawater desalination plant during the 1987 to 1991 drought, but no longer has any financial or institutional arrangements with the City of Santa Barbara for desalinated water. Past studies by GWD have shown that seawater desalination is not financially feasible.

GWD could provide financial assistance to another SWP contractor to assist with the construction of seawater desalination facilities in exchange for SWP supplies. GWD has been following existing and proposed seawater desalination projects along the California coast. Table 3-6 provides a summary of the status of several of California's municipal/domestic seawater desalination facilities. As shown Table 3-6, most of the existing and proposed seawater desalination facilities are or would be operated by agencies that are not SWP contractors. However, in these cases as described above, an exchange for imported water deliveries would most likely involve a third party SWP contractor.

TABLE 3-6
EXISTING AND PROPOSED SEAWATER DESALINATION FACILITIES ALONG THE CALIFORNIA COAST

Project	Member Agency Service Area	AFY	Status
Long Beach Seawater Desalination Project	Long Beach Water Department	10,000	Pilot study
South Orange Coastal Ocean Desalination Project	Municipal Water District of Orange County	16,000-28,000	Pilot study
Carlsbad Seawater Desalination Project	San Diego County Water Authority	56,000	Permitting
West Basin Seawater Desalination Project	West Basin Municipal Water District	20,000	Pilot study
Huntington Beach Seawater Desalination Project	Municipal Water District of Orange County	56,000	Permitting
Camp Pendleton Seawater Desalination Project	San Diego County Water Authority	56,000 to 168,000	Planning
Rosarito Beach Seawater Desalination Feasibility Study	San Diego County Water Authority	28,000 to 56,000	Feasibility study
	Total AFY	**102,000-280,000**	

Source: MWD 2010 UWMP

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Chapter 4: Recycled Water

4.1 Recycled Water System Description

Both the Goleta West Sanitary District and the Goleta Sanitary District provide wastewater collection to customers within the GWD service area. Wastewater from both the Goleta West Sanitary District and the Goleta Sanitary District is treated at the Goleta Sanitary District wastewater treatment plant (WWTP). Recycled water service within Goleta began in 1994 in response to drought conditions of the early 1990s and the Wright suit settlement. The WWTP is constructed to handle a peak dry weather flow of 9 MGD (Goleta Sanitary District 2009). The WWTP produces secondary effluent, a portion of which is blended with primary effluent prior to ocean discharge, another portion is sent to the recycled water system. The recycled water system consists of flash mixing tanks, flocculation tanks, anthracite filters, and a chlorine contact tank. Following production recycled water is placed in storage tanks. The tanks allow the WWTP to operate at a steady efficient rate regardless of recycled water demand (Goleta Sanitary District 2011). The existing recycled water system can produce up to 3 million gallons per day (MGD) (approximately 3,000 AFY) of tertiary effluent for recycling. However, the ability to fully utilize recycled water is limited by recycled water use patterns, which are typically condensed into a 12- rather than a 24-hour period, and is limited by recycled water delivery capacity and the end user demand for recycled water.

Table 4-1 provides information on projections of wastewater collection, treatment, and disposal.

TABLE 4-1
PROJECTIONS OF WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL (AFY)

	2010	2015	2020	2025	2030	2035
Wastewater Collected and Treated at Goleta Sanitary District WWTP[(a)]	6,861	7,211	7,578	7,965	8,371	8,371
Recycled water treatment and delivery capacity[(a)]	1,150	1,150	1,150	1,150	1,150	1,150
Estimate of volume sent to reuse[(b)]	785	1,070	1,070	1,070	1,070	1,070
Estimate of volume sent to ocean outfall[(c),(d)]	6,076	6,145	6,512	6,899	7,305	7,305

Notes:
(a) From 2005 GWD UWMP and 2011 Water Supply Master Plan.
(b) Based on estimates of recycled water demand
(c) Based on data in 2005 GWD UWMP.
(d) Currently ocean discharge is blended secondary wastewater. Starting in 2015 all water sent to ocean discharge will be secondary wastewater.

4.2 Recycled Water Demand

Currently GWD delivers recycled water for landscape irrigation uses as well as a minor amount for toilet flushing (Goleta Water District 2010). Over the last 14 years the amount of recycled water produced and delivered has remained relatively constant, with some variation due to rainfall. In years where the Goleta Valley receives higher than normal rainfall, demand for recycled water is low. Based on a review of upcoming land uses (see Appendix C) demand for

recycled water is not expected to dramatically increase in the future. For the purposes of projections, recycled water demand is assumed to be no higher than the demand seen for years 1995 to 2010. It is assumed that the recycled water system has a similar loss rate to that of the overall water system, currently about 6 percent. Table 4-2 illustrates projections of actual and potential recycled water use by sector for 2015 to 2035.

TABLE 4-2
RECYCLED WATER USES – ACTUAL AND PROJECTED (AFY)

	2010	2015	2020	2025	2030	2035
Agriculture	0	0	0	0	0	0
Landscape	780	1,065	1,065	1,065	1,065	1,065
Wildlife Habitat	0	0	0	0	0	0
Wetlands	0	0	0	0	0	0
Industrial	0	0	0	0	0	0
Groundwater Recharge	0	0	0	0	0	0
Toilet Flushing	5	5	5	5	5	5
Total	**785**	**1,070**	**1,070**	**1,070**	**1,070**	**1,070**

4.2.1 Potential Users

GWD conducted a recycled water market survey in 1999. This survey identified 28 potential customers within the current recycled water system boundaries. Most of these customers are now under contract to receive recycled water. Review of upcoming development projects has identified only minimal (less than 15 AFY) potential for growth in recycled water demand and this demand will only be realized if and when new development occurs.

The Goleta Valley has a large agricultural market, a portion of which could potentially utilize recycled water. However there are obstacles to using recycled water for agricultural irrigation. Avocados and citrus are the dominant crops in the Goleta Valley and these are sensitive to dissolved minerals found in recycled water. Avocados are extremely sensitive to total dissolved solids (TDS) requiring water with TDS of less than 800 mg/L. Currently the recycled water system produces water with TDS of approximately 1250 mg/L. To deliver recycled water to agriculture would require additional and perhaps costly enhanced treatment. At this time, GWD does not consider agriculture a near-term recycled water customer.

GWD will be participating in the South Coast Subregion Recycled Water Development Plan, coordinated by the County of Santa Barbara Water Agency and funded through Proposition 84. This is a study to support the increase of recycled water use in the South Coast. This study will evaluate existing recycled water infrastructure in the City of Santa Barbara, Montecito area, City of Carpinteria, and Goleta area), summarize existing treatment methods, daily/seasonal ranges of flow, site layout/constraints, delivery systems (storage, conveyance and pumping), end users and associated recycled water use quantities and flow patterns (daily, seasonal), as well as point-of-use treatment, if applicable. This study may identify additional recycled water users in GWD as well as opportunities to sell water outside of the GWD service area.

4.3 Optimizing Recycled Water Use

Within the GWD service area there are significant financial benefits for users of recycled water. Recycled water rates are 40 percent lower than residential and commercial water rates, and 20 percent lower than the landscape water rate. GWD works collaboratively with Goleta Sanitary District to market recycled water. These efforts are important to retaining existing recycled water customers and could attract future recycled water customers. As described earlier, GWD will participate in the South Coast Subregion Recycled Water Development Plan with the intent of identifying means to increase recycled water use. However, large increases in recycled water demand are not anticipated in the near future. There are limits to the existing recycled water market and there is a high cost to expanding treatment levels and treatment capacity. For projection purposes GWD has assumed recycled water use will remain at or near historic levels.

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Chapter 5: Water Quality

The quality of any natural water is dynamic in nature. This is true for the SWP, local surface water, and local groundwater. During periods of intense rainfall or snowmelt, routes of surface water movement are changed; new constituents are mobilized and enter the water while other constituents are diluted or eliminated. The quality of water changes over the course of a year. These same basic principles apply to groundwater. Depending on water depth, groundwater will pass through different layers of rock and sediment and leach different materials from those strata. Water depth is a function of local rainfall, snowmelt, and artificial recharge. During periods of low groundwater levels, the mineral content of groundwater increases. Water quality is not a static feature of water, and these dynamic variables must be recognized.

As required by the Safe Drinking Water Act, which was reauthorized in 1996, GWD provides annual Water Quality Reports to its customers, also known as Consumer Confidence Reports (CCR). This mandate is governed by the U.S. Environmental Protection Agency (EPA) and the CDPH to inform customers of their drinking water quality. In accordance with the Safe Drinking Water Act, GWD monitors a number of regulated and unregulated compounds in its water supply and as in years past, the water delivered to GWD potable customers meets the standards required by the state and federal regulatory agencies.

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

5.1 Cachuma Project and SWP Water

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

Recent fires in the Santa Ynez watershed have increased ash, debris, and other nutrient and organic material in the runoff to Lake Cachuma. Organic material can combine with the chlorine disinfectant used in water treatment to eliminate bacteria, and form substances called Trihalomethanes (THM) and Haloacetic acids (HAA). GWD has developed and implemented treatment process adjustments to reduce the formation of these disinfection byproducts. As necessary, GWD can also blend Lake Cachuma water with groundwater to reduce the amount of organic material in the raw water and the potential for disinfection byproduct formation. Stricter regulations related to THM formation will go into effect in January 2012; GWD anticipates meeting this new standard.

5.2 Groundwater

GWD extracts water from the Central subbasin of the Goleta Groundwater Basin. Historically this groundwater has contained iron and manganese that did not meet federal and state secondary drinking water regulations (GWD 2010 pg 3-1). An evaluation of water quality trends indicates that iron and manganese continues to be a problem that requires drinking water treatment prior to delivery to customers. Chloride concentrations in the Central subbasin generally reached a maximum in the late 1980s and early 1990s coinciding with a period of heavy groundwater pumping. Reduced pumping and injection of lower-chloride Cachuma spill water have reduced chloride levels in groundwater.

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

There are a number of spills and leaks of contaminants at the ground surface overlying the Goleta Groundwater Basin. The spilled or leaked contaminants range from gasoline (most common) to dry cleaning fluid. The agency responsible for enforcing the cleanup of most of these sites is the Regional Water Quality Control Board. The Regional Board tracks each of these sites, approves remediation plans, and eventually determines when the site is remediated and the case is closed. For the roughly 175 sites in the Goleta-Santa Barbara area:

- 50% have been remediated and the case is closed
- 20% are currently being remediated
- 25% are being assessed for remediation
- 5% are currently being monitored
  (GWD 2010)

These spills and leaks are only a potential problem to the aquifers in areas of the basin where there are no confining layers that separate the aquifers from the surface soils – the danger is in the recharge areas of the basin where contaminants may move freely from ground surface to aquifer. These recharge areas are generally in the foothills to the north of the majority of the spills (GWD 2010).

5.3 Water Quality Impacts on Reliability

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

Table 5-1 shows the current and expected water supply changes due to water quality in percentage change.

TABLE 5-1
CURRENT AND PROJECTED WATER SUPPLY CHANGES DUE TO WATER QUALITY IN PERCENTAGE CHANGE

Water Source	2015	2020	2025	2030	2035
Cachuma Project	0%	0%	0%	0%	0%
SWP	0%	0%	0%	0%	0%
Groundwater	0%	0%	0%	0%	0%

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Chapter 6: Reliability Planning

The Act requires urban water suppliers to assess water supply reliability that compares total projected water used with the expected water supply over the next twenty years in five-year increments. The Act also requires an assessment for a single dry year and multiple dry years. This section presents the reliability assessment for GWD's service area.

Reliability is a measure of a water supplier's expected success in managing water shortages. The combination of demand management and supply augmentation options helps to reduce the frequency and severity of shortages. The reliability of GWD's water supply is dependent on the reliability of both Cachuma Project and SWP water supplies and local groundwater supplies. Recycled water provides a small supplement to GWD's existing supplies. Table 6-1 shows the factors resulting in inconsistency of supply for GWD's water supply sources.

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

TABLE 6-1
FACTORS RESULTING IN INCONSISTENCY OF SUPPLY

Water Supply Sources	Legal	Environmental	Water Quality	Climatic
Cachuma Water	X	X		X
SWP	X	X		X
Groundwater	X	X		X
Recycled Water	X			

6.1 Reliability of Imported Water Supplies

6.1.1 Cachuma Project Supplies

As part of its Water Supply Management Plan, GWD evaluated the reliability of Cachuma Project water using the Santa Ynez River Model. The Santa Ynez River Model was developed by the Santa Barbara County Water Agency over the past two decades to simulate flow rates along the river and dozens of tributaries, as well as capture and spilling of water from the three reservoirs along the river. GWD had the River Model extended from October 1917 through September 1993, and to October 2007. Measured and estimated historic stream flows, rainfall, evaporation, and tunnel infiltration values provide the database for a set of algorithms that simulate reservoir and river-course conditions. The Santa Ynez River Model superimposes current or future water demand on the 90-year hydrology as if current facilities and policies were in place during the entire period.

This model has demonstrated that 97 percent of the time GWD's full entitlement of Cachuma water, 9,322 AF, is available. Based on the 1986 to 1991 drought and others, GWD projects a decrease in Cachuma Project supplies of approximate 17 to 20 percent during drought conditions (GWD 2011 pg 16). Table 6-2 documents anticipated Cachuma supplies in a normal year, a single-dry year and a multiple-dry year period.

TABLE 6-2
ANTICIPATED CACHUMA WATER SUPPLIES (AFY)

	2010	2015	2020	2025	2030	2035
Normal Year	9,322	9,322	9,322	9,322	9,322	9,322
Single-Dry Year[(a)]	6,894	6,894	6,894	6,894	6,894	6,894
Multiple-Dry Year[(b)]	7,672	7,672	7,672	7,672	7,783	7,783

Notes:
(a) Based on 1989 calendar year from Water Supply Master Plan dataset.
(b) Based on average deliveries during 5-year drought 1986-1991, as described in 2011 Water Supply Master Plan

6.1.2 State Water Project Supplies

Each SWP contractor's Water Supply Contract contains a Table A amount that identifies the maximum amount of water that a contractor may request. However, the amount of SWP water actually allocated to contractors each year is dependent on a number of factors than can vary significantly from year to year. The primary factors affecting SWP supply availability include hydrologic conditions in northern California, the amount of water in SWP storage reservoirs at the beginning of the year, regulatory and operational constraints, and the total amount of water requested by the contractors. The availability of SWP supplies is generally less than their full Table A amounts in many years and can be significantly less in very dry years. DWR's SWP Delivery Reliability Report for 2009, issued in 2010, assists SWP contractors in assessing the reliability of the SWP component of their overall supplies.

Reliability of the GWD's supplies was considered in CCWA's UWMP. In that plan CCWA estimated that on the long-term average supplies available to GWD would range from 4,500 to 4,700 AFY (Table 6-3). This is greater than GWD's capacity to take SWP water, which is currently limited to 4,500 AFY. GWD's SAFE Ordinance further limits the amount of SWP water which can be used for planning purposes to 3,800 AFY.

TABLE 6-3
ESTIMATES FROM CCWA ON SWP SUPPLIES AVAILABLE (AFY)
(LONG-TERM AVERAGE)

Wholesale Source	Contracted Volume	2010	2015	2020	2025	2030	2035
Agreement with CCWA	4,500 Table A plus 2,500 drought buffer	4,705	4,659	4,612	4,566	4,520	4,473

Source: CCWA 2011.

As part of the Water Supply Management Plan, GWD evaluated SWP water reliability in a normal year, a single-dry year, and multiple dry years (Table 6-4). To estimate SWP reliability, the Water Supply Management Plan took data from the 2009 SWP Delivery Reliability Report (2009 Reliability Report) but also considered water that GWD stores in San Luis Reservoir. SWP available to GWD in a given year is a combination of water available in that year and San Luis Reservoir storage, limited by GWD's annual capacity in the Coastal Aqueduct. During the Single Dry Year, 6% or 447 AF of the District's total of 7,450 AF of State Water is anticipated to be available, consistent with the 2009 Reliability Report. This means that 2,605 AF is assumed to be stored in the San Luis Reservoir, for a total of 3,052 AF as illustrated in Table 6-4. For the Multiple Dry Year, 33% of the District's 7,450 AF of total State Water is available during a drought, consistent with the 2009 Reliability Report. This means that 594 AF is stored in the San Luis Reservoir, for a total of 3,052 AF as illustrated in Table 6-4.

TABLE 6-4
ANTICIPATED SWP SUPPLIES (AFY)

	2010	2015	2020	2025	2030	2035
Normal Year	3,800	3,800	3,800	3,800	3,800	3,800
Single-Dry Year	3,052	3,052	3,052	3,052	2,488	2,488
Multiple-Dry Year	3,052	3,052	3,052	3,052	2,488	2,488

Source: GWD 2011

6.2 Reliability of Groundwater Supplies

Prior to the Wright Judgment and SAFE Ordinance, GWD used groundwater as an important source of its water supply. Groundwater elevations dropped to historical lows during the 1986-1991 drought. Since the drought, GWD has largely foregone pumping the basin, which allowed the basin to rise to near-historical highs. Currently there is a significant amount of groundwater in the basin that GWD has the right to pump (over 43,000 AF as of 2009), subject to the limitations of the SAFE Ordinance and pumping constraints. Thus the reliability of groundwater is currently good.

As part of the Water Supply Management Plan GWD evaluated groundwater water reliability in a normal, single-dry, and multiple-dry year (Table 6-5). As shown in Table 6-5, it is assumed GWD can draw on a groundwater drought buffer during drought conditions.

TABLE 6-5
ANTICIPATED GROUNDWATER SUPPLIES (AFY)

	2010	2015	2020	2025	2030	2035
Normal Year	2,350	2,350	2,350	2,350	2,350	2,350
Single-Dry Year	2,710	2,710	2,710	2,710	2,852	2,852
Multiple-Dry Year	2,710	2,710	2,710	2,710	2,852	2,852

Source: GWD 2011

6.3 Reliability of Recycled Water Supplies

Recycled water supplies are considered an extremely reliable source of supply. GWD recycled water demand is lower than the amount of recycled water generated in its service area. Projected recycled water use is not expected to increase above current deliveries of approximately 1,070 AFY for the foreseeable future. GWD does not anticipate any issues with the reliability of recycled water to its customers.

6.4 Supply and Demand Comparisons

The available supplies and water demands for GWD's service area were analyzed to assess the region's ability to satisfy demands during three scenarios: a normal water year, single-dry year, and multiple-dry years. The tables in this section present the supplies and demands for the various drought scenarios for the projected planning period of 2010 to 2035 in five-year increments. Tables 6-6 through 6-9 summarize, respectively, Normal Water Year, Single-Dry Water Year, and Multiple-Dry Year supplies.

6.4.1 Normal Water Year

Table 6-6 provides a summary of supplies versus demands assuming a normal year and the moderate estimate of water demand. Table 6-6 shows that even in a normal year, without additional conservation GWD could have a minor supply shortfall starting in year 2030. Table 6-7 provides a summary of supplies versus demands assuming the high estimate of water demand. Table 6-7 illustrates that in order to support more aggressive growth it would be necessary for GWD to further increase conservation or develop new water supplies. Between years 2010 and 2020 the water surplus "grows" as demand management measures go into effect, but after year 2020 increases in demand outpace conservation savings.

6.4.2 Single-Dry Year

Based on evaluations in the Water Supply Master Plan, GWD has developed estimates of water supplies during a single-year drought. Table 6-8 compares supplies in a single-year drought against the moderate demand scenario. Table 6-8 demonstrates that in a drought GWD will face increasing shortage, even under a moderate growth scenario. Table 6-9 compares supplies in a single-year drought against the high demand scenario. Table 6-9 demonstrates that GWD could face significant drought related shortages if service area demands were to grow aggressively. Between years 2010 and 2020 the difference between supplies and demands decreases. This is the affect of enhanced demand management measures, after year 2020 increases in demand outpace conservation savings.

6.4.3 Multiple-Dry Year

Table 6-10 provides a comparison of supplies in a multiple-year drought against the moderate demand scenario. Table 6-11 provides a comparison of supplies in a multiple-year drought against the high demand scenario. Tables 6-10 and 6-11 demonstrate that GWD will face shortage during a multiple year drought. Between years 2010 and 2020 the difference between supplies and demands decreases. This is the effect of enhanced demand management measures, after year 2020 increases in demand outpace conservation savings.

TABLE 6-6
SUPPLY AND DEMANDS NORMAL WATER YEARS (AFY) – MODERATE ESTIMATE OF DEMANDS

	Current	2015	2020	2025	2030	2035
Existing Supplies						
Cachuma Project Water	9,322	9,322	9,322	9,322	9,322	9,322
SWP Water	3,800	3,800	3,800	3,800	3,800	3,800
Groundwater	2,350	2,350	2,350	2,350	2,350	2,350
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Groundwater Banking	0	0	0	0	0	0
Total Existing Supplies	*16,622*	*16,622*	*16,622*	*16,622*	*16,622*	*16,622*
Planned Supplies	0	0	0	0	0	0
Total Existing and Planned Supplies	***16,622***	***16,622***	***16,622***	***16,622***	***16,622***	***16,622***
Moderate Estimate of Demands, with additional conservation	15,001	15,229	15,240	15,690	16,141	16,617
Surplus/Deficit in Normal Year	**1,621**	**1,393**	**1,382**	**932**	**481**	**5**
Difference as % of Supply	**10%**	**8%**	**8%**	**6%**	**3%**	**0%**
Difference as % of Demand	**11%**	**9%**	**9%**	**6%**	**3%**	**0%**

TABLE 6-7
SUPPLY AND DEMANDS NORMAL WATER YEARS (AFY) – HIGH ESTIMATE OF DEMANDS

	Current	2015	2020	2025	2030	2035
Existing Supplies						
Cachuma Project Water	9,322	9,322	9,322	9,322	9,322	9,322
SWP Water	3,800	3,800	3,800	3,800	3,800	3,800
Groundwater	2,350	2,350	2,350	2,350	2,350	2,350
Local Surface Water	0	0	0	0	0	0
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Groundwater Banking	0	0	0	0	0	0
Total Existing Supplies	*16,622*	*16,622*	*16,622*	*16,622*	*16,622*	*16,622*
Planned Supplies	0	0	0	0	0	0
Total Existing and Planned Supplies	***16,622***	***16,622***	***16,622***	***16,622***	***16,622***	***16,622***
High Estimate of Demands, with additional conservation	15,001	15,999	16,647	17,469	17,679	18,143
Surplus/Deficit in Normal Year	**1,621**	**623**	**-25**	**-847**	**-1,057**	**-1,521**
Difference as % of Supply	**10%**	**4%**	**0%**	**-5%**	**-6%**	**-9%**
Difference as % of Demand	**11%**	**4%**	**0%**	**-5%**	**-6%**	**-8%**

TABLE 6-8
SUPPLY AND DEMANDS SINGLE DRY YEARS (AFY) – MODERATE ESTIMATE OF DEMANDS

	Current	2015	2020	2025	2030	2035
Existing Supplies						
Cachuma Project	6,894	6,894	6,894	6,894	6,894	6,894
State Water Project	3,052	3,052	3,052	3,052	2,488	2,488
Groundwater	2,710	2,710	2,710	2,710	2,852	2,852
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Groundwater Banking	0	0	0	0	0	0
Total Existing Supplies	*13,806*	*13,806*	*13,806*	*13,806*	*13,384*	*13,384*
Planned Supplies	0	0	0	0	0	0
Total Existing and Planned Supplies	***13,806***	***13,806***	***13,806***	***13,806***	***13,384***	***13,384***
Moderate Estimate of Demands, with additional conservation	15,001	15,229	15,240	15,690	16,141	16,617
Surplus/Deficit in Normal Year	**-1,195**	**-1,423**	**-1,434**	**-1,884**	**-2,757**	**-3,233**
Difference as % of Supply	**-9%**	**-10%**	**-10%**	**-14%**	**-21%**	**-24%**
Difference as % of Demand	**-8%**	**-9%**	**-9%**	**-12%**	**-17%**	**-19%**

TABLE 6-9
SUPPLY AND DEMANDS SINGLE DRY YEARS (AFY) – HIGH ESTIMATE OF DEMANDS

	Current	2015	2020	2025	2030	2035
Existing Supplies						
Cachuma Project	6,894	6,894	6,894	6,894	6,894	6,894
State Water Project	3,052	3,052	3,052	3,052	2,488	2,488
Groundwater	2,710	2,710	2,710	2,710	2,852	2,852
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Groundwater Banking	0	0	0	0	0	0
Total Existing Supplies	*13,806*	*13,806*	*13,806*	*13,806*	*13,384*	*13,384*
Planned Supplies	0	0	0	0	0	0
Total Existing and Planned Supplies	***13,806***	***13,806***	***13,806***	***13,806***	***13,384***	***13,384***
High Estimate of Demands, with additional conservation	15,001	15,999	16,647	17,469	17,679	18,143
Surplus/Deficit in Normal Year	**-1,195**	**-2,193**	**-2,841**	**-3,663**	**-4,295**	**-4,759**
Difference as % of Supply	**-9%**	**-16%**	**-21%**	**-27%**	**-32%**	**-36%**
Difference as % of Demand	**-8%**	**-14%**	**-17%**	**-21%**	**-24%**	**-26%**

TABLE 6-10
SUPPLY AND DEMANDS MULTIPLE DROUGHT YEARS (AFY) – MODERATE ESTIMATE OF DEMANDS

	Current	2015	2020	2025	2030	2035
Existing Supplies						
Cachuma Project	7,672	7,672	7,672	7,672	7,783	7,783
State Water Project	3,052	3,052	3,052	3,052	2,488	2,488
Groundwater	2,710	2,710	2,710	2,710	2,852	2,852
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Groundwater Banking	0	0	0	0	0	0
Total Existing Supplies	*14,584*	*14,584*	*14,584*	*14,584*	*14,273*	*14,273*
Planned Supplies	0	0	0	0	0	0
Total Existing and Planned Supplies	***14,584***	***14,584***	***14,584***	***14,584***	***14,273***	***14,273***
Moderate Estimate of Demands, with additional conservation	15,001	15,229	15,240	15,690	16,141	16,617
Surplus/Deficit in Normal Year	**-417**	**-645**	**-656**	**-1,106**	**-1,868**	**-2,344**
Difference as % of Supply	**-3%**	**-4%**	**-4%**	**-8%**	**-13%**	**-16%**
Difference as % of Demand	**-3%**	**-4%**	**-4%**	**-7%**	**-12%**	**-14%**

TABLE 6-11
SUPPLY AND DEMANDS MULTIPLE DROUGHT YEARS (AFY) – HIGH ESTIMATE OF DEMANDS

	Current	2015	2020	2025	2030	2035
Existing Supplies						
Cachuma Project	7,672	7,672	7,672	7,672	7,783	7,783
State Water Project	3,052	3,052	3,052	3,052	2,488	2,488
Groundwater	2,710	2,710	2,710	2,710	2,852	2,852
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Groundwater Banking	0	0	0	0	0	0
Total Existing Supplies	*14,584*	*14,584*	*14,584*	*14,584*	*14,273*	*14,273*
Planned Supplies	0	0	0	0	0	0
Total Existing and Planned Supplies	***14,584***	***14,584***	***14,584***	***14,584***	***14,273***	***14,273***
High Estimate of Demands, with additional conservation	15,001	15,999	16,647	17,469	17,679	18,143
Surplus/Deficit in Normal Year	**-417**	**-1,415**	**-2,063**	**-2,885**	**-3,406**	**-3,870**
Difference as % of Supply	**-3%**	**-10%**	**-14%**	**-20%**	**-24%**	**-27%**
Difference as % of Demand	**-3%**	**-9%**	**-12%**	**-17%**	**-19%**	**-21%**

6.5 Potential Effects of Climate Change

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

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

In July 2006, DWR issued "*Progress on Incorporating Climate Change into Management of California's Water Resources*," as required by Executive Order S-3-05. That report demonstrated how various analytical tools could be used to address issues related to climate change. The report presents analysis results showing potential impacts on SWP operations, including reservoir inflows, delivery reliability, and average annual carryover storage, as well as

many other operational parameters. Some of the main impacts include changes to south-of-Delta SWP deliveries (from an increase of about one percent in a wetter climate change scenario to about a ten percent reduction for a drier scenario), increased winter runoff and lower SWP allocations in the three driest scenarios, lower carryover storage in drier scenarios and higher carryover storage in the wetter scenario.

The matrix provided in Figure 6-1, adapted from the California Climate Adaptation Strategy (Adaptation Matrix), illustrates potential climate change vulnerabilities to be considered across a range of sectors. Sectors specifically identified by the State as potentially at risk due to climate change include Water Management, Agriculture, Forests, Ecosystems, Public Health and Safety, Infrastructure, and Coastal Resources.

As a result, water purveyors may need to engage in adaptive planning to respond to climate change-driven alterations in the local environment. As provided in the Adaptation Matrix, environmental changes impacting water purveyors like GWD could include:

- Higher temperatures, which would increase demand and evapotraspiration rates, meaning more water would be needed for longer periods of time to meet the needs of urban and agricultural customers.
- More extreme weather events, during periods of high rainfall resulting in less natural groundwater recharge, more frequent reservoir spills, and higher turbidity and related treatment costs. During periods of drought, this means prolonged reduction of water supplies, less groundwater recharge, and higher water demands.
- Sea level rise, and associated saltwater intrusion into the groundwater basin and damage to low-lying utility infrastructure.
- More frequent and intense wildfires, which would diminish the quality of water running into surface reservoirs.

Potential Climate Change Vulnerabilities - Adapted from the CA Climate Adaptation Strategy (CCAS)

	Drivers								
	Higher Temperatures	**Earlier snowmelt**	**More rain, less snow**	**More extreme flood events**	**Longer, more frequent droughts**	**Decrease in Freeze events**	**Sea Level Rise**	**More Erosion**	**More frequent & intense wildfires**
Water Management	Change in runoff timing; reduced cold water pool for meeting instream temp requirements; higher demands	Less water supply due to storage loss; water mgmt more difficult at multipurpose reservoirs	Less water supply; poor water quality; more stress on levees; less groundwater recharge	Levee stress/ failure; impacts to resevoir operations (flood control and storage); damage to conveyance	Less water supply; higher demands; reduced recreational opportunities; poor water quality; less groundwater recharge	Higher ag demands from longer growing season	Levee stress/ failure; higher demand to meet WQ[1] standards; saltwater intrusion; damage to conveyance	Levee stress/ failure; poor water quality; damage to conveyance	Higher demands for fire fighting; poor WQ from flash floods; accelerated runoff
Agriculture	More ET[2]; increased moisture deficits; longer growing season; higher demands; shifts in crop type; increase in pests/ disease[3]	Less summer water supply; reduced water supply reliability	More floodplain inundation; levee stress; reduced water supply reliability; shifts in crop types	Levee stress/ failure; reduced productivity; crop loss from flood events	Less supply; higher demands; reduced productivity; invasive species; increase in pests/ disease; shifts in crop types	Longer growing season; higher demands; invasive species; increase in pests/ disease; shifts in crop types; decreased yield (crop specific)	Levee stress/ failure; saltwater intrusion; inundation; poor WQ; loss of ag land	Levee stress/ failure; poor water quality; loss of ag land	Poor WQ; loss of range lands; crop loss
Forests	More ET; increased moisture deficits; longer growing season; biodiversity shifts; increase in pests/ disease	Increased moisture deficits; biodiversity shifts	Reduced biomass; biodiversity shifts	Increased erosion; changes to riparian vegetation	Reduced biomass; increase in pests/ disease; biodiversity shifts; invasive species; increase in fire frequency/intensity	Longer growing season; invasive species; increase in pests/ disease	Coastal access-road damage from storm surges: economical and recreational losses	Reduced water quality; reduced productivity for aquatic species	Reduced biomass; more disease; biodiversity shifts; altered fire regime; economic and recreational losses; increased erosion
Ecosystems	Increased water temp and moisture deficits;biodiversity shifts; increase in disease/ invasives; phenological[4] changes	Barriers to species migration/ movement; phenological changes	Biodiversity shifts; increased water temp; reduced stream flow; invasive species	Poor WQ; reduced productivity; biodiversity shifts; economic and recreational losses; stream channel changes	Stream flows altered; biodiversity shifts; invasive species; increase in diseases; loss of ecosystem goods and services	Longer growing season; biodiversity shift; increase in disease/ invasive species; phenological changes	Loss of ecosystem goods and services; biodiversity shifts; loss of tidal wetland habitat; saltwater intrusion	Poor WQ; reduced productivity; displacement; stream channel changes	Fire regimes altered; habitat loss; poor WQ; biodiversity shifts; economic and recreational losses
Public Health & Safety	Mortality rates increase; poor air quality; allergens increase; less water supply; Illnesses[5] exacerbated	Less water supply	Change in prevalence & spread of disease; reduced water supply reliability; poor water quality	Change in prevalence & spread of diseases; mortality; displacement[6]	Change in prevalence & spread of diseases; mortality; reduced water supply reliability; increased malnutrition	Higher pesticide use; allergens increase; Illnesses exacerbated	Displacement; illness due to poor water quality;	Displacement; poor water quality; mudslides	Poor water quality; poor air quality; displacement; Illnesses, esp. respiratory, exacerbated; mortality; mudslides
Infrastructure	Higher summer energy demand; increased outages	Less summer/ fall hydropower production	Less summer/ fall hydropower production; more reservoir spills	Damage to transportation, wastewater, and energy infrastructure	Higher energy demand; reduced water supply; increased outages	Higher agricultural energy demand	Structural damage and inundation in coastal areas	Damage to transportation, wastewater, and energy infrastructure	Damage to transportation, wastewater, and energy infrastructure
Coastal Resources	Productivity reduced; biodiversity shifts; changes in commercial & recreational fisheries	N/A	Freshwater outflow reduced during summer/fall	Poor WQ; sediment transport altered	Poor WQ; less coastal fog; reduced freshwater outflow	N/A	Flooding & inundation; reduced ag; displacement; reduced tourism; loss of tidal wetlands	Poor WQ; displacement	Poor water quality; biodiversity shifts; habitat loss; economical and recreational losses

[1]WQ = Water quality

[2]ET = Evapotranspiration

[3] Pests/disease - for agriculture the increase in pests and diseases could in turn result in higher use of pesticides, fungicides, and/or herbicides

[4]Phenological - predator/prey and plant/pollinator timing altered due to climatic changes

[5]Illnesses - includes chronic, infectious, and vector borne diseases

[6]Displacement - encompasses associated health consequences, including mortality, due to economic disruption, loss of personal income, and disruption of social networks.

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6.6 GWD Vulnerability to Climate Change

As described in further detail below, climate factors discussed in the Adaptation Matrix could affect the reliability of each of GWD's water supply sources, the need for infrastructure changes, and customer demand:

- **State Water Project.** A portion of GWD's supply includes SWP water. With climate change, it is anticipated that more winter precipitation in the Sierra Nevada will fall as rain instead of snow. Because Sierran dams are partially operated as flood control facilities, some of the winter rain runoff will have to be released from the dams to preserve storage space for later storm events, effectively reducing winter storm capture and water available for the SWP. Higher sea levels could threaten the existing levee system in the Delta. Salinity intrusion into the Delta could also require increased releases of freshwater from upstream reservoirs to maintain compliance with water quality standards (Goleta Water District Water Supply Management Plan, April 2011 [GWD 2011]).

- **Cachuma Reservoir.** Ongoing studies by DWR (DWR 2006) indicate that rainfall in southern California will not change significantly, with climate modeling indicating that precipitation will increase in wet years in the Sierra, but decrease in dry years. This modeling suggests that these effects will likely be less than a 10 percent swing in precipitation in either direction. However, periodic drought periods may be longer in duration affecting runoff into Cachuma Reservoir (GWD 2011).

- **Groundwater.** Drought periods may be longer in duration, affecting recharge to the groundwater basin. The projected sea level rise discussed above would potentially allow the sea to encroach father up the Goleta Slough and extend the estuary over portions of the West and Central subbasins. This encroachment would likely occur over the portions of the basin that are under confined conditions – that is, there are low-permeability sediments that separate the estuary at the surface from the drinking water aquifers at depth. Thus, it is unlikely that this encroachment would allow saline water into the aquifers. However, such encroachment would require additional monitoring wells to be installed to ensure that downward percolation of saline water does not occur (GWD 2011). Preventing the encroachment of the ocean onto coastal plains around the world will be a major and potentially expensive and disruptive effort. It is not known at this time if the Goleta Slough area would be protected from encroachment (GWD 2011).

- **Infrastructure.** If seawater were to encroach on the Goleta Slough, distribution pipes such as the recycled water line at the slough would potentially have to be relocated (GWD 2011).

- **Demand.** Higher temperatures could increase evapotranspiration causing an increase in outside water use and crop irrigation (GWD 2011). Increased wildfire frequency and severity may increase water demand for fire fighting.

6.7 Potential Adaptation Responses

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

- **Groundwater Pumping Capacity**. The current groundwater pumping capacity of 300 AF per month could cause supply shortages in some years even with current demands. As demand increases in the future, this pumping capacity limitation becomes a larger factor in shortfalls of supply. Modeling performed as part of the Water Supply Management Plan indicate that additional pumping capacity is not required until there is an additional 2,000 AFY of demand (GWD 2011).
- **Treatment Capacity**. The capacity of GWD treatment facility can be a limiting factor in how much Cachuma water can be injected during a spill event (high turbidity in the storm water can reduce treatment capacity). Raw Cachuma water must be treated prior to injection to meet health requirements and to ensure that the wells used for injection do not get plugged with sediment and organic material. This additional treatment capacity could be relatively expensive because it's anticipated that it will be needed during less than 9 percent of the months that Cachuma spills in the Santa Ynez River (GWD 2011).
- **Banking**. GWD is a member agency of both COMB and CCWA. A potential means to increase supply reliability is, in coordination with COMB, to bank water somewhere south of the Sacramento Delta.

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

6.8 Future Refinements to GWD Climate Response Strategy

To further hone its climate change response, GWD could refine its assessment of vulnerability, quantify potential impacts, and evaluate and prioritize strategies.

In the future GWD may choose to quantify the climate change impacts. Currently general circulation models (GCM) are the primary climate change predictor models. The resolution of GCM models is too coarse to be useful for most regional planning studies and decision support purposes. However, there are several ways to scale GCM model results down to a finer resolution, including the use of statistical models and dynamic regional models. Another approach, called the relative change approach, is to add or subtract a defined quantity or percentage to a parameter of interest to estimate the potential change due to climate shift. This approach gives an initial indication of the expected magnitude and direction of potential change.

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

6.9 Climate Change Considerations in this UWMP

This UWMP incorporates climate change considerations within its analysis. This UWMP utilizes projections from the State Water Project Delivery Reliability Report (Reliability Report) (2009). Projections within the Reliability Report include the potential effects of climate change under future conditions. For that report, DWR used a single climate change scenario, selecting a scenario with median effects out of a number of climate change scenarios. Further, while specific local source projections related to climate change are not available, given that drought severity is anticipated to increase, this UWMP bases estimates of Cachuma water supply during a drought conditions based on a 5-year rather than 3-year drought. Given prevailing conditions, it may prudent to use even longer drought periods for planning analysis in future planning efforts.

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Chapter 7: Water Demand Management Measures

This section describes the water Demand Management Measures (DMMs) implemented by GWD to reduce water use.

7.1 Conservation Program Background

GWD recognizes the critical importance of water conservation as an approach to balancing long-term water supply and demand. GWD became a signatory to the CUWCC's MOU in 1994, establishing a firm commitment to implementation of BMPs or Demand Management Measures (DMMs) for efficient water use. GWD has been implementing conservation programs locally and in conjunction with the Santa Barbara County Water Agency for a number of years.

In preparation for the 2010 UWMP, GWD prepared a Water Conservation Plan ("Plan", GWD, 2010) that establishes water conservation goals and program needs. It is intended as an interim plan, designed to provide guidelines for implementing the BMPs in Fiscal Year (FY) 2010-2011. GWD expects to produce revisions at least biennially in order to meet the evolving BMP and State requirements. The 2010 Conservation Plan provides the foundation and context for Section 7 of the UWMP. Items discussed below are synthesized from the Plan, as well as the District's annual BMP reports to the CUWCC.

In addition to meeting the requirements of BMP implementation, the program goals focus on the following elements:

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

The Plan identifies programs to be implemented and resources that will be dedicated to work toward these goals to enable GWD to address BMP requirements.

7.2 Implementation of DMMs/BMPs

GWD is subject to requirements of the Urban Water Management Planning Act, AB1420 and SBX7-7 requirements, in addition to their commitment to comply with the BMPs as a signatory to the MOU. The MOU and BMPs were revised by the CUWCC in 2008. The revised BMPs now contain a category of "Foundational BMPs" 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 new category of Foundational BMPs is a significant shift in the revised MOU. These revisions are reflected in the reporting database, starting with reporting year 2009.

A key intent of the recent MOU revision was to provide retail water agencies with more flexibility in meeting requirements and allow them to choose program options most suitable to their specific needs. Therefore, as alternatives to the traditional Programmatic BMP requirements, agencies may also implement the MOU Flex Track or Gallons Per Capita per Day (GPCD) options. Notably, the GPCD option related to CUWCC MOU compliance is similar to, but separate from the SBX7-7 targets discussed in Chapter 2 of the UWMP. Specifically, the methods for setting baselines and compliance requirements differ.

Under the Flex Track option, an agency is responsible for achieving water savings greater than or equal to those it would have achieved using only the BMP list items. The CUWCC has developed three Flex Track Menus – Residential, CII, and Landscape – and each provides a list of program options that may be implemented in part or any combination to meet the water savings goal of that BMP. Custom measures can also be developed and require documentation on how savings were realized and the method and calculations for estimating savings.

The GPCD option sets a water use reduction goal of 18 percent reduction by 2018. The MOU defines the variables involved in setting the baseline and determining final and interim targets.

GWD has chosen to comply with the MOU by implementing the BMP approach. Signatories to the urban MOU are allowed by Water Code Section 10631(j) to include their biennial CUWCC BMP reports in an UWMP to meet the requirements of the DMMs sections of the UWMP Act. GWD has provided reports for 2006 through 2010 in Appendix E. The following sections highlight GWD's achievements and focus on conservation programs that are currently underway or planned to meet conservation objectives.

7.3 Foundational BMPs

7.3.1 Utility Operations

7.3.1.1 Conservation Coordinator

GWD has a Conservation Coordinator overseeing the conservation program and implementation activities.

7.3.1.2 Water Waste Prohibition

GWD Code Section 6.20.070, Waste of Water, prohibits customers from wasting water. As described in the District's 2010 Conservation Plan, staff will draft an update of this section of the code, with a focus on making it enforceable. Staff will also research the feasibility of implementing other waste prevention methods, as well as the possibility of supporting local ordinances that establish permit requirements for water efficient design in reconstruction.

7.3.1.3 Water Loss Control

GWD repaired and reported leaks to the extent cost effective in 2009 and 2010. GWD completed pre-screening audits from 2005 to 2009. Pre-screening audits include summarized analysis and help an agency prepare for the American Water Works Association (AWWA) Standard Water Audit Approach per the M36 manual in 2011.

GWD plans to implement the AWWA Standard Water Audit Approach per the M36 manual in 2011 and has completed the training to implement the audit. The process consists of a component analysis of leaks into "revenue" and "non-revenue" categories, among others, and an economic analysis of recoverable loss.

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

All of GWD's service connections have been metered and billed volumetrically since 1973. Conservation staff plans to prepare a feasibility study examining incentive programs to move landscape water uses on mixed-use meters to dedicated landscape meters. Conservation staff also plans to work with Operations staff to develop a written plan, policy or program that includes a census of all meters, a schedule of meter testing and repair, and a schedule of meter replacement.

7.3.1.5 Retail Conservation Pricing

GWD has a uniform pricing structure comprised of variable and fixed charges. As reported in the District's audited Comprehensive Annual Financial Report (CAFR), the percentage of revenues associated with volumetric billing is summarized for 2009 and 2010 in Table 7-1.

TABLE 7-1
GWD OPERATING REVENUES

	2009	2010
Volumetric Charges	$17,891,753	$16,554,650
Total Operating Revenue	$25,245,709	$23,833,852
% Volumetric	71%	70%

This BMP is intended to reinforce the need for Water Agencies to establish a strong nexus between volume-related system costs and volumetric commodity rates and provide an economic incentive to customers to use water efficiently. GWD will continue working to ensure the required portion of revenue from volumetric rates meets the 70 percent threshold. In fact, GWD intends to work with an expert consultant to study the feasibility of implementing a tiered

volumetric rate structure during FY 2011-12 in order to meet the requirement. Notably, GWD already provides a tiered rate structure for fixed meter charges.

7.3.2 Education

7.3.2.1 Public Information Programs

GWD runs public information programs with support from the Santa Barbara County Water Agency (SBCWA). GWD shares the regional conservation website, www.sbwater.org, as part of the "Family of Santa Barbara County Water Providers". GWD also partners with the Green Business Program of Santa Barbara County and with the SBCWA on the Regional Water Efficiency Program. With a strong history of successful public outreach endeavors, GWD exceeds these BMP requirements, as shown in the following tables. Due to changes in the reporting format, activities for 2006 to 2008 are summarized in Table 7-2, followed by 2009 to 2010 activities in Table 7-3.

TABLE 7-2
SUMMARY OF OUTREACH ACTIVITIES, 2006-2008

Item	2006	2007	2008
Paid Advertising	3	3	3
Public Service Announcement	1	1	1
Bill Inserts / Newsletters / Brochures	8	4	4
Bill showing current water usage in comparison with prior year usage	Yes	Yes	Yes
Demonstration Gardens	Yes	Yes	Yes
Special Events	3	3	3
Speaker's Bureau	1	1	1
Program to coordinate with other government agencies, industry, public interest groups and media	Yes	Yes	Yes

TABLE 7-3
SUMMARY OF OUTREACH ACTIVITIES, 2009-2010

Item	2009	2010
Flyers and/or brochures, bill stuffers, messages printed on bill, info packets	2	2
Flyers and/or brochures, bill stuffers, messages printed on bill, info packets	12	15
Landscape water conservation media campaigns	2	2
General water conservation information[(a)]	400	600
Website	12	12

Note:
(a) This includes outreach activities made through events such as the annual Earth Day and Lemon Festival

7.3.2.2 School Education Programs

GWD staff has run a school education program with support from SBCWA since 1998. Staff distributes materials that meet state education framework requirements and are grade-level appropriate. Presentations are summarized in Table 7-4.

TABLE 7-4
SUMMARY OF SCHOOL EDUCATION PROGRAMS

Grade	2006	2007	2008	2009	2010
K-6					
Presentations	11	18	14		
Attendees	220	420	760		
All ages					
Presentations				23	11
Attendees				1,030	720

Each year since 2005 GWD has partnered with the County Regional Water Efficiency Program to offer high-school students the chance to win $1,000 by creating an entertaining video that conveys the importance of water conservation in Santa Barbara County.

7.4 Programmatic BMPs

GWD has opted to comply with the MOU through a BMP approach. BMP status is described in the following section as well as the attached BMP files.

7.4.1 Residential Programs

Residential users in the GWD service area accounted for approximately 90 percent of customer accounts and 47 percent of total water use in 2010. GWD began implementing conservation programs for residential customers in 2000, at which time residential water use accounted for 59 percent of total water use.

7.4.1.1 Residential Assistance Program

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

- Checks for leaks in bathrooms, kitchen and the laundry area
- Checks of showerhead flow rates
- Checks of toilet flow rates
- Checks on irrigation systems
- Suggestions on irrigation scheduling

The number of surveys and devices distributed to residential customers are summarized Table 7-5.

TABLE 7-5
RESIDENTIAL WATER SURVEYS AND DEVICE DISTRIBUTION

	2006	2007	2008	2009	2010
Single-Family					
Surveys	112	35	79	72	23
Low-Flow Showerheads	111	35	59	72	23
Toilet Flappers	18	5	8	NA	NA
Multi-Family					
Surveys	712	10	4	21	4
Low-Flow Showerheads	119	10	4	21	4
Toilet Flappers	27	5	0	NA	NA

NA – Not available

To meet the BMP requirements, GWD is required to perform Water Checkups for about 1.5 percent of residential customers, or about 2,000 single-family (SF) and 240 multi-family (MF) accounts in 10 years, for a savings of approximately 476 AF by 2020. After that, surveys are required for 0.75 percent or 99 SF and 12 MF accounts per year thereafter.

The MF accounts have multiple units and require more effort to complete. Staff is researching options for providing water audits on weekends, so that customers who work on weekdays can take advantage of this service.

Conservation staff will also continue to implement GWD Code Section 6.20.070, and work with Administration staff to ensure that customers are quickly notified when it appears that they may have a leak. Staff also plans to review the automatic triggers to determine if they can be modified to be more stringent, and will also work with Operations staff to develop/modify the door tag procedure for notifying customers of excess use while in the field or reading meters.

7.4.1.2 High-Efficiency Clothes Washing Machine Financial Incentive Programs

GWD began offering incentives for high-efficiency clothes washing machines (HECWs) in 2007 in partnership with SBCWA. Rebates issued to date are summarized in Table 7-6.

TABLE 7-6
HEW INCENTIVES

	2007	2008	2009	2010
Rebates Issued	13	131	47	93

Rebates issued in 2009 and 2010 were for HECWs with water factor less than 5. Rebates of up to $150 were offered to GWD customers in collaboration with CUWCC through the statewide Smart Rebates Program. In compliance with this BMP, GWD plans to provide financial incentives to purchase HECWs with an average water factor of 5.0, to 1 percent of SF customers each year, for a period of ten years. Compliance requires that GWD provide about 130 HECW rebates per year, or 1,300 over 10 years, for a savings of 180 AF by 2020.

7.4.1.3 WaterSense Specification Toilets

GWD has issued rebates for installation of high-efficiency toilet (HETs) since 2007. From 2007 to 2010 customers were eligible for CUWCC's Smart Rebate program, which offers up to $100 for qualifying toilets (Table 7-7).

TABLE 7-7
TOILET REBATES

Rebates Issued	2007	2008	2009	2010
Single-Family	26	62	8	20
Multi-Family		4		3

Staff is currently researching market saturation levels to determine whether the required threshold of 75 percent market saturation has been achieved. In addition, staff is reviewing the feasibility of requiring a retrofit of toilets on resale, reconstruction, and/or billing change. Achievement of a 75 percent market level or implementation of a retrofit on resale ordinance will allow GWD to meet the requirement of the BMP. Otherwise, compliance requires that GWD provide about 117 HET rebates per year, or 1,170 over 10 years, for a savings of 139 AF by 2020.

7.4.1.4 WaterSense Specification (WSS) for New Residential Development

In Fiscal Year 2011-12, as part of an update to a Board committee on the Conservation Plan, GWD staff plan to present a proposal to implement a recognition program for residential construction that meets the WSS for SF and MF housing.

GWD is supporting adoption of the 2010 California Green Building Standards Code, which went into effect January 2011. The Code sets mandatory green building measures, including a twenty percent reduction in indoor water use, as well as dedicated meter requirements and regulations addressing landscape irrigation and design. Local jurisdictions, at a minimum, must adopt the mandatory measures; the Code also identifies voluntary measures that set a higher standard of efficiency, which can also be adopted. GWD has been invited and intends to participate on the City of Goleta's Green Ribbon Committee, which will establish a green building framework for development in the City of Goleta. The Green Ribbon Committee is scheduled to begin meeting in October 2011.

7.4.1.5 Additional Residential Programs – Landscape

GWD issued over 80 rebates totaling almost $70,000 to residential and commercial customers to convert to water-wise landscapes. The Smart Landscape Rebate program covers up to 50 percent of the cost for of irrigation equipment, Water-Wise Plants and Mulch, and/or Smart Irrigation Controllers. The program is funded by a grant from the United States Bureau of Reclamation, in partnership with the Family of Santa Barbara County Water Providers. GWD also supports Green Gardener and Ocean-Friendly Gardens Workshops that provide education on water-efficient residential and commercial gardening.

7.4.2 Commercial, Industrial and Institutional (CII)

To achieve the target water savings of 10 percent of their baseline (2008) CII water use over a 10-year period, GWD is assisting large customers in their implementation of fixtures/equipment on the CII demonstrated savings list, including the following:

- High Efficiency Toilets
- High Efficiency Urinals
- Ultra Low Volume Urinals
- Zero Consumption Urinals
- Commercial High Efficiency Single Load Clothes Washers
- Cooling Tower Conductivity Controllers
- Cooling Tower pH Controllers
- Connectionless Food Steamers
- Medical Equipment Steam Sterilizers
- Water Efficient Ice Machines
- Pressurized Water Brooms
- Dry Vacuum Pumps

For example, GWD is currently serving on the University of California, Santa Barbara Chancellor's Sustainability Subcommittee on Water. In addition, GWD sponsors and assists with the Santa Barbara Green Business Program, where the District provides free water check-ups and services required as part of program certification. Through these efforts, GWD identifies where and how the measures listed above may be implemented for CII customers, and confirms installations. GWD's commercial customers receive:

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

To meet the BMP requirements, GWD is required to reduce water use by a total of 220 AF over 10 years, or 22 AFY. GWD anticipates that compliance will require approximately 150 hours of staff time per year.

7.4.3 Large Landscape

GWD offers water surveys for large landscape areas with dedicated irrigation meters, and offered rebates to all customers for installation of efficient irrigation equipment and plantings. To date, through a USBR grant received in partnership with Santa Barbara County, GWD has offered approximately $70,000 in rebates to customers.

GWD plans to assign water budgets based on evapotranspiration data, provide monthly notices to large landscape accounts, and offer technical assistance to customers with water use that is 20 percent or more over the established budget. GWD will also develop and implement a strategy to market large landscape water-use surveys to CII accounts with mixed-use meters. Financial incentives will be established to improve customer participation in these programs. To meet the BMP requirements of developing ETo-based water budgets for an average of 9 percent of dedicated irrigation accounts per year, GWD is required to develop about 14 landscape water budgets per year.

7.5 DMM and SBX7-7 Implementation Plan

The SBX7-7 baseline and target calculations are addressed in Chapter 2. The results are summarized in Table 7-8:

TABLE 7-8
GWD COMPLIANCE TARGETS (in GPCD)

		Target		
Compliance	**Baseline**	**2015**	**2018**	**2020**
SBX7-7	119	115		111
Current Use	117			

Over the last 5 years GWD has averaged 117 GPCD, meaning that in order to meet the water use targets prescribed by SBX7-7, GWD must reduce current water use by approximately 2 percent by 2015 and by approximately 5 percent by 2020. GWD recognizes the need to expand conservation programs and efforts in order to continue to meet both its SBX7-7 and BMP requirements in the future. GWD will meet these targets through implementation of new program areas described in the preceding sections and ongoing implementation and monitoring of existing programs and outreach activities.

In addition to the local program elements, GWD expects to see significant water savings from legislated efficiencies including SB407, AB1881, CAL Green, as well as the new standards for HETs and HECWs. GWD will support implementation of these codes as required and will work interim ordinances in some areas to accelerate progress.

At this time, it is expected that the conservation programs currently being implemented or scheduled for implementation will not have a significant negative effect on customers within GWD's service area from economic or public health and safety perspectives. In other words, additional conservation achievements are feasible into the future and over the planning horizon of the UWMP.

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Chapter 8: Water Shortage Contingency Planning

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

GWD Ordinance 91-3, which was implemented during the drought in the early 1990's, provides a framework and guides GWD actions in the event of a water shortage emergency (Appendix D). As required by State law, an updated draft ordinance, modeled after Ordinance 91-3, has been included as part of this UWMP update in Appendix D. During Fiscal Year 2011-12, GWD will initiate a comprehensive update for a Drought Preparedness and Water Shortage Contingency Plan, as described in the Budget.

8.1 Planning

In 2001, GWD evaluated five different disaster scenarios and three different drought scenarios to evaluate how such events could impact the water supply and distribution system. GWD intends to update its Emergency Response Plan during Fiscal Year 2011-12. In order to meet short-term water demand deficiencies, and short- or long-term droughts in the communities it serves, GWD has implemented several precautionary methods. GWD maintains several water reservoirs for daily operations, fire fighting, and other emergencies. The majority of the system has been designed to operate by gravity, lessening the need for electricity. Water from Lake Cachuma, GWD's primary source, flows by gravity through the Santa Ynez Mountains via the Tecolote Tunnel to reach GWD's distribution system without the need for electrical power. GWD uses backup generators at its three main booster pump stations, the Corona del Mar Water Treatment Plant, and headquarters to continue service in the event of power blackouts or other emergencies. GWD has two mobile emergency generators that can be used to provide electrical power to groundwater wells. Fuel storage tanks allow GWD to operate its system for extended periods on emergency power.

As described in Chapter 3, GWD maintains a diverse water supply portfolio. Should one supply be affected by an emergency, GWD can utilize one of its other sources. In addition, consistent with the SAFE Ordinance, GWD maintains a Drought Buffer. The Drought Buffer can only be used for delivery to existing customers when a drought on the South Coast causes a reduction in GWD's annual deliveries from Lake Cachuma and cannot be used as a supplemental supply for new or additional water demands. Further, when new service is connected, the Annual Storage Commitment for the Drought Buffer must permanently increase by 2/3 of the new demand, insuring the Drought Buffer expands as demands increase. In times of drought, SAFE prohibits new service connections, providing another measure to protect against water shortages.

In the event of an emergency, GWD will report continuously and in certain situations may collaborate with the City of Goleta and the Santa Barbara County Office of Emergency Services. If local resources are overwhelmed by the disaster, regional protocol enables the County of

Santa Barbara Operations of Emergency Services to contact the State of California Governor's Office of Emergency Services for assistance.

8.2 Stages of Action to Respond to Water Shortages

As described in its 2005 UWMP, GWD continues to maintain a four-stage water rationing plan to implement during a declared water shortage emergency. The plan includes voluntary and mandatory rationing depending on the causes, severity, and anticipated duration of the supply shortage. Table 8-1 presents GWD's water rationing stages and reduction goals.

TABLE 8-1
WATER SHORTAGE CONTINGENCY PLAN IMPLEMENTATION PLAN

Stage	Supply Shortage Condition	Customer Reduction Demand Goal	Type of Rationing Program
I	If any of the following occur: • Current supply 85 to 90% of normal and a below normal year is declared. • Future supply insufficient to provide 80% of normal deliveries for the next two years. • No groundwater pumping allowed. • Contamination of 10% of water supply (pollutant exceeds primary drinking water standards)	15%	Voluntary
II	If any of the following occur: • Total Supply is 75 to 85% of normal and a below normal year is declared. • Future supply is insufficient to provide 75% of normal deliveries for the next two years. • First year of banked groundwater taken which must be replaced consistent with GWD groundwater policies and SAFE. • Contamination of 20% of water supply (pollutant exceeds primary drinking water standards)	25%	Mandatory
III	If any of the following occur: • Total Supply is 65 to 75% of normal. • Fifth consecutive below normal year declared. • Future supply is insufficient to provide 65% of normal deliveries for the next two years. • Second year of banked groundwater taken which must be replaced consistent with GWD groundwater policies and SAFE. • Contamination of 30% of water supply (pollutant exceeds primary drinking water standards)	35%	Mandatory
IV	If any of the following occur: • Total Supply is less than 65% of normal. • Sixth consecutive below normal year declared. • Future supply is insufficient to provide 50% of normal deliveries for the next two years. • No banked groundwater available or reduced groundwater pumping due to the need to replenish previously pumped groundwater. • Contamination of 30% or more of water supply (pollutant exceeds primary drinking water standards) • Disaster loss of water distribution or supply facilities	50% or greater	Mandatory

Table 8-2 provides examples of consumption reduction methods and the stage when the method becomes effective. These methods were prescribed in District Ordinance 91-3, and have been included in the Draft Ordinance developed for the 2010 UWMP.

TABLE 8-2
CONSUMPTION REDUCTION METHODS

Examples of Consumption Reduction Methods	Stage When Method Takes Effect
Demand reduction program	All Stages
Water allotment	Stages II- IV
Restrict use to priority uses	Stages II- IV
Use prohibitions	Stages II- IV
Water shortage pricing	Stages II- IV

8.2.1 Demand Reduction Program

GWD demand reduction programs are described in Chapter 7 of this UWMP. GWD maintains an active conservation program, and is an ongoing partner in Santa Barbara County's Regional Water Efficiency Program. Through a strong focus on the use of incentives for customers, such as waterwise landscape rebates, courtesy customer water surveys, and a focus on public outreach, these activities help enable achievement of water conservation goals during periods of normal supply, and provide a foundation for reducing customer demand during water shortages.

8.2.2 Water Allotment

Ordinance 91-3 established methods to determine customer water allocations during the 1987 to 1992 drought. Ordinance 91-3 remains consistent with State law; accordingly, this framework has been used to create a Draft Water Shortage Ordinance for the 2010 UWMP.[3] In the future, if necessary, similar allocation methods may be adopted and implemented as summarized below:

- Single-Family – allotment to be a hybrid of per-capita and percent reduction
- Multi-Family – allotment to be a hybrid of per-capita and percent reduction
- Commercial – allotment to be a percent reduction
- Industrial – allotment to be a percent reduction
- Government/Institutional – allotment to be percent reduction
- Permanent Agriculture – allotment to be percent reduction, and varies based on customer efficiency
- Annual Agriculture – allotment to be percent reduction, and varies based on customer efficiency
- Recreational – allotment to be percent reduction, and varies based on customer efficiency

[3] California Water Code Sections 350 et seq.

- New Customers – If allowed by SAFE, allotment to be per-capita with no allocation for new landscaping during a declared water shortage

Individual customer allotments are based on the past five years of water use record. This gives GWD a more accurate view of the usual water needs of each customer and provides additional flexibility in determining allotments and reviewing appeals. However, no allotment may be greater than the amount used in the most recent year of the five-year base period. Each customer will be notified of his or her classification and allotment by mail before the effective date of the Water Shortage Emergency. In a disaster, prior notice of allotment may not be possible; notice will be provided by other means. Any customer may appeal their classification on the basis of use or for incorrect calculations.

8.2.3 Priority by Use

Priority for use of available potable water during shortages is based on GWD's experience during the 1987 through 1992 drought and legal requirements set forth in the California Water Code, Sections 350-358. The SAFE Ordinance prohibits the District from making new service connections during times of drought. For existing customers, water allocations are established according to the following ranking system (listed from highest to lowest priority):

1. Minimum health and safety allocations for interior residential needs (includes single-family residential, multi-family residential, hospitals and convalescent facilities, retirement and mobile home communities, students housing, fire fighting, and public safety). Based on DWR guidance, GWD assumes an allocation of 37.5 up to 68 gallons per person per day for health and safety.
2. Commercial, industrial, institutional/governmental operations (where water is used for manufacturing and for minimum health and safety allocations for employees and visitors), to maintain jobs and economic base of the community (not for landscape use).
3. Permanent agriculture (orchards, vineyards, and other commercial agriculture which would require at least five years to return to production).
4. Annual agriculture (floriculture, strawberries, other truck crops).
5. New customers, proposed projects without permits when a shortage is declared.

8.2.4 Prohibitions

Prohibitions on wasteful water uses outlined in Ordinance 91-3 and the draft ordinance accompanying the 2010 UWMP include:

- Use of potable water to irrigate grass, lawns, ground-cover, shrubbery, crops, vegetation, and trees between the hours of 10 A.M. and 4 P.M. or in such a manner as to result in runoff for more than 5 minutes. The General Manager may allow potable water to be used for irrigation for commercial nurseries or farms between the hours of 10 A.M. and 4 P.M.
- Use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground or other hard surfaced areas by direct application.

- Allowing potable water to escape from breaks within the customers plumbing system for more than 8 hours after the customer is notified or discovers the break.

To supplement the measures provided above, examples of other best-practice water use prohibitions during water shortages are described below. These measures were not included in Ordinance 91-3, but are used by agencies throughout the State and are provided here for additional information.

- Require cars to be washed with bucket and hole with a self-closing nozzle, and only during specified irrigation hours.
- Work with restaurants to only provide water to customers upon request
- Require new home or remodeled homes to install low-flow showerheads and ultra low-flow toilets before granting entitlements.
- Work with commercial lodging establishments to provide customers with the option of not having towels and linens laundered daily.

8.2.5 Water Shortage Pricing/Penalties for Excessive Use

Water use in excess of the monthly amounts established by Ordinance 91-3 is subject to a charge at an increased rate.

8.3 Penalties for Excessive Use

As provided for in District Code Chapter 6.20.110, "in the event that any person uses District water in violation of any of the rules and regulations in this Code or in violation of any ordinances of the District now existing or hereafter enacted, or otherwise uses water without the consent of the District" charges and penalties can apply. Any customer violating the regulations and restrictions on water use that are in effect receives a written warning for the first violation. Upon a second violation, the customer receives another written warning and GWD may install a flow-restrictor on the services. If a flow-restriction is installed, the violator pays the cost of the installation and removal. Any willful violation occurring subsequent to the issuance of the second written warning constitutes a misdemeanor and may be referred to the Santa Barbara County District Attorney's office for prosecution. In addition, Code Section 6.20.110 provides for a fine in the amount of $500 and disconnection of water service. If water service is disconnected, it will be restored only upon payment of the turn-on charge set by the Board of Directors in addition to resolving any other outstanding requirements of the District rules and regulations, as provided for by District Code Section 6.28.100.

8.4 Financial Impacts of Actions During Shortages

When consumption reduction methods are implemented during Stages I, II, II, and IV, GWD will consider implementing an accompanying rate change as shown in Table 8-3 to maintain fiscal health, in full compliance with State law. The rate adjustment could be implemented in such a manner that users who achieve necessary reductions would not experience increased water bills. This rate adjustment, combined with possible use of GWD reserves, would mitigate the

financial impact of reduced water sales and revenues. Moreover, the rate adjustment would provide a conservation incentive to customers through price signals during shortage conditions.

TABLE 8-3
CONSUMPTION REDUCTION METHODS

Shortage Stage	Reduction in Sales	% Rate Increase	% Normal Revenue
I	15%	None	98%
II	25%	15%	95%
III	35%	20%	92%
IV	50%	43%	90%

Table 8-4 provides an estimate of how operating expenses could change by water shortage stage. Table 8-4 is just an estimate, each drought situation, the causes and the resulting supply mix and resulting changes in operation will be unique. The overarching intent of this analysis and forecast is to illustrate that expenses are expected to stay relatively flat, whereas revenues are expected to decrease significantly during various states of water shortages, as shown in Table 8-3.

TABLE 8-4
ESTIMATING CHANGE IN OPERATING EXPENSE BY RATIONING STAGE

Expenses	Normal[(a)]	Stage I	Stage II	Stage III	Stage IV
Water Supply Agreements[(b)]	$13,444,196	$13,444,196	$13,444,196	$13,444,196	$13,444,196
Change in Water Supply Mix[(c)]	$0	$180,123	$0	$0	$0
Water Treatment	$684,200	$684,200	$684,200	$684,200	$684,200
Maintenance and Equipment	$1,154,178	$1,154,178	$1,154,178	$1,154,178	$1,154,178
Overhead[(d)]	$2,054,616	$2,054,616	$2,054,616	$2,054,616	$2,054,616
Personnel	$8,618,192	$8,618,192	$8,618,192	$8,618,192	$8,618,192
Debt Service	$3,626,303	$3,626,303	$3,626,303	$3,626,303	$3,626,303
Capital Improvement Projects	$1,101,000	$825,750	$0	$0	$0
Additional Conservation	$0	$325,000	$725,000	$725,000	$725,000
Total Expenses	$30,682,685	$30,912,558	$30,306,685	$30,306,685	$30,306,685
Change from Normal	NA	100.75%	98.77%	98.77%	98.77%

Notes:
(a) Normal costs based on Adopted FY2011-2012 budget costs (see Table 3.1 on page 22 of FY 2011-12 Final Budget)
(b) These are fixed costs. Based on fixed costs as described in 2011 Water Supply Master Plan Table 11-1.
(c) Assumes that with any shortage, it would be necessary to draw on any available SWP, a more expensive source. Difference in cost based on Table 11-1 of Water Supply Management Plan. Additional SWP available during Shortage Stage I.
(d) Includes Insurance, Legal, Services, and Utilities

8.5 Mechanisms to Determine Reduction in Water Use

Under normal water supply conditions, potable water production figures are recorded daily. GWD includes monthly water production totals as part of their monthly report to the State Department of Health Services. During a drought or water shortage emergency, production figures are more closely monitored to ensure that reduction goals are being met.

8.6 Minimum Water Supply Next Three Years

GWD has four sources of water: Lake Cachuma, SWP, groundwater, and recycled water. GWD was faced with an extended drought during the period 1986 to 1991. GWD recently completed a water supply master plan which looked at water supply reliability given a repeat of the 1986 to 1991 drought. Table 8-5 reflects the anticipated minimum supply available for the next three years, which is consistent with the Single Dry year supplies discussed in Chapter 6.

TABLE 8-5
ANTICIPATED MINIMUM SUPPLY NEXT THREE YEARS (AFY)

Supply Source	Normal Year	2011	2012	2013
Cachuma Project	9,322	6,894	6,894	6,894
State Water Project	3,800	3,052	3,052	3,052
Groundwater	2,350	2,710	2,710	2,710
Recycled Water	1,150	1,150	1,150	1,150
Total	**16,622**	**13,806**	**13,806**	**13,806**

Source: GWD 2011.

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Chapter 9: References

Central Coast Water Authority. 2011. 2010 Urban Water Management Plan. June.

City of Goleta. 2010. Goleta General Plan/Coastal Land Use Plan Housing Element 2007 to 2014 Technical Appendix. November

County of Santa Barbara. 2010. Housing Element 2009-2014. November

Department of Water Resources. 2009. SWP Supply Reliability Report.

Goleta Sanitary District. 2011. Goleta Sanitary District Water Reclamation Annual Report. January.

Goleta Sanitary District. 2009. Goleta Sanitary District Mitigated Negative Declaration for the Wastewater Treatment Plant Upgrade Project (SCH No. 2008061141). January.

Goleta Water District. 2011. Water Supply Management Plan. April

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Metropolitan Water District. 2010. *The Regional Urban Water Management Plan.* November.

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Appendix A

DWR Checklist

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Urban Water Management Plan checklist, organized by legislation number

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)	System Demands		Sections 2.3.1, 2.3.2, Tables 2-8, 2-9 and 2-10.
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	System Demands	Retailer and wholesalers have slightly different requirements	Sections 1.2.2, Table 1-2.
3	Report progress in meeting urban water use targets using the standardized form.	10608.40	Not applicable	Standardized form not yet available	NA
4	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.	10620(d)(2)	Plan Preparation		Section 1.2.1, 1.2.2, Table 1-1.
5	An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.	10620(f)	Water Supply Reliability . . .		Section 1.2.3
6	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.	10621(b)	Plan Preparation		Section 1.2.2, Table 1-2.
7	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).	10621(c)	Plan Preparation		Section 1.2.1, Table 1-1, Appendix G.

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
8	Describe the service area of the supplier	10631(a)	System Description		Section 1.3., Figure 1.1.
9	(Describe the service area) climate	10631(a)	System Description		Section 1.4, Table 1-3.
10	(Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . .	10631(a)	System Description	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Sections 2.1, Tables 2-1 and 2-2.
11	. . . (population projections) shall be in five-year increments to 20 years or as far as data is available.	10631(a)	System Description	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Table 2-2.
12	Describe . . . other demographic factors affecting the supplier's water management planning	10631(a)	System Description		Sections 2.4.4 and 2.4.5.
13	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).	10631(b)	System Supplies	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Chapter 3, Table 3-1.
14	(Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . .?	10631(b)	System Supplies	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 3.3, Tables 3-3, 3-4 and 3-5.

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
15	(Provide 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. Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)	System Supplies		Appendix D.
16	(Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater.	10631(b)(2)	System Supplies		Section 3.3, Figure 3-1.
17	For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board	10631(b)(2)	System Supplies		Appendix D.
18	(Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.	10631(b)(2)	System Supplies		Section 3.1.
19	For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.	10631(b)(2)	System Supplies		Section 3.3.
20	(Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(3)	System Supplies		Section 3.3, Table 3-3, Figure 3-1.
21	(Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(4)	System Supplies	Provide projections for 2015, 2020, 2025, and 2030.	Section 3.3, Table 3-4, Figure 3-1.
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) An average water year, (B) A single dry water year, (C) Multiple dry water years.	10631(c)(1)	Water Supply Reliability . . .		Chapter 6, Tables 6-1 through 6-11, Figure 6-1.

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
23	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.	10631(c)(2)	Water Supply Reliability . . .		NA, no inconsistent supplies
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)	System Supplies		Section 3.5.
25	Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), 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.	10631(e)(1)	System Demands	Consider “past” to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Sections 2.2, 2.3, 2.4, Tables 2-3 through 2-7, 2-11 through 2-15, 2-17, 2-18.
26	(Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) Water survey programs for single-family residential and multifamily residential customers; (B) Residential plumbing retrofit; (C) System water audits, leak detection, and repair; (D) Metering with commodity rates for all new connections and retrofit of existing connections; (E) Large landscape conservation programs and incentives; (F) High-efficiency washing machine rebate programs; (G) Public information programs; (H) School education programs; (I) Conservation programs for commercial, industrial, and institutional accounts; (J) Wholesale agency programs; (K) Conservation pricing; (L) Water conservation coordinator; (M) Water waste prohibition;(N) Residential ultra-low-flush toilet replacement programs.	10631(f)(1)	DMMs	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Chapter 7, Tables 7-3 through 7-8.
27	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.	10631(f)(3)	DMMs		Appendix E

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
28	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.	10631(f)(4)	DMMs		Appendix E
29	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.	10631(g)	DMMs	See 10631(g) for additional wording.	Sections 7.2, 7.3, and 7.4.
30	(Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 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.	10631(h)	System Supplies		Section 3.7.
31	Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.	10631(i)	System Supplies		Section 3.8, Table 3-6.

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
32	Include the annual reports submitted to meet the Section 6.2 requirement (of the MOU), if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	DMMs	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Appendix E
33	Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).	10631(k)	System Demands	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Section 3.2, Table 3-1.
34	The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)	System Demands		Section 2.4.4, Tables 2—17 and 2-18.
35	Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.	10632(a)	Water Supply Reliability . . .		Section 8.2, Tables 8-1 and 8-2.
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)	Water Supply Reliability . . .		Section 8.6, Table 8-5.
37	(Identify) actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)	Water Supply Reliability . . .		Section 8.2, Tables 8-1 and 8-2.

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
38	(Identify) additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)	Water Supply Reliability . . .		Section 8.2.4.
39	(Specify) consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)	Water Supply Reliability . . .		Sections 8.2, Tables 8-2 and 8-3.
40	(Indicated) penalties or charges for excessive use, where applicable.	10632(f)	Water Supply Reliability . . .		Section 8.3.
41	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.	10632(g)	Water Supply Reliability . . .		Section 8.4, Table 8-4.
42	(Provide) a draft water shortage contingency resolution or ordinance.	10632(h)	Water Supply Reliability . . .		Appendix F
43	(Indicate) a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)	Water Supply Reliability . . .		Section 8.5.
44	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	10633	System Supplies		Chapter 4, Table 4-2.
45	(Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)	System Supplies		Section 4.1, Table 4-1.
46	(Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)	System Supplies		Sections 4.1, 4.2, Tables 4-1, 4-2.

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
47	(Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)	System Supplies		Section 4.2, Table 4-2.
48	(Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)	System Supplies		Section 4.2.1.
49	(Describe) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.	10633(e)	System Supplies		Section 4.2, Table 4-2.
50	(Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)	System Supplies		Sections 4.2.1 and 4.3
51	(Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)	System Supplies		Section 4.3.
52	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.	10634	Water Supply Reliability . . .	For years 2010, 2015, 2020, 2025, and 2030	Chapter 5, Table 5-1.

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
53	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.	10635(a)	Water Supply Reliability . . .		Chapter 5, Section 6.4, Tables 6-6 through 6-11.
54	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.	10635(b)	Plan Preparation		Section 1.2.1, Table 1-1, Appendix G.
55	Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642	Plan Preparation		Section 1.2.2, Tables 1-1, 1-2, Appendix G.
56	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.	10642	Plan Preparation		Section 1.2.2, Table 1-2, Appendix B.
57	After the hearing, the plan shall be adopted as prepared or as modified after the hearing.	10642	Plan Preparation		Appendix G
58	An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.	10643	Plan Preparation		Appendix G

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
59	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.	10644(a)	Plan Preparation		Appendix G
60	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.	10645	Plan Preparation		Section 1.2.2, Table 1-2, Appendix G.

Notes:

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

Appendix B

Public Outreach Materials

- Notification of Urban Water Management Plan Update to Water Use Agencies and Land Use Agencies
- Hearing Notices
- Adoption Meeting Materials

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Notification Letters

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GOLETA WATER DISTRICT

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

April 13, 2011

Deborah Constantino, City Clerk
City of Goleta
130 Cremona Drive, Suite B
Goleta, CA 93117

SENT VIA U.S. MAIL and email
Certified Return Receipt
dconstantino@cityofgoleta.org

Dear Ms. Constantino,

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

Since the City of Goleta is within the District's service area, this letter is to provide notification that the Urban Water Management Plan is under development. Pursuant to California Water Code Section 10621(b), this notification is being provided at least 60 days prior to the public District Board of Directors meeting at which the updated UWMP will be considered and adopted.

Over the coming weeks and months, the District will provide additional information and seek to coordinate with your agency regarding the update of the UWMP. If you have any questions, please contact Chris Rich, Water Supply & Conservation Manager at crich@goletawater.com or 805-879-4604.

Sincerely,

John McInnes, General Manager
Goleta Water District

cc. Daniel Singer, City Manager, City of Goleta

[1] California Water Code Section 10610 et seq.

GOLETA WATER DISTRICT

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

April 13, 2011

Michael Allen, Chief Deputy Clerk of the Board
Santa Barbara County
105 E. Anapamu Street, Room 407
Santa Barbara, CA 93101

SENT VIA U.S. MAIL and email
Certified Return Receipt
allen@co.santa-barbara.ca.us

Dear Mr. Allen,

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

Since a portion of Santa Barbara County is within the District's service area, this letter is to provide notification that the Urban Water Management Plan is under development. Pursuant to California Water Code Section 10621(b), this notification is being provided at least 60 days prior to the public District Board of Directors meeting at which the updated UWMP will be considered and adopted.

Over the coming weeks and months, the District will provide additional information and seek to coordinate with your agency regarding the update of the UWMP. If you have any questions, please contact Chris Rich, Water Supply & Conservation Manager at crich@goletawater.com or 805-879-4604.

Sincerely,

John McInnes, General Manager
Goleta Water District

cc. Chandra L. Wallar, County Executive Officer, Santa Barbara County

[1] California Water Code Section 10610 et seq.

Hearing Notices

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GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Deborah Constantino, City Clerk
City of Goleta
130 Cremona Drive, Suite B
Goleta, CA 93117

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Ms. Constantino:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

The District Board of Directors will hold a public hearing on November 8, 2011 at 5:30 pm to consider adoption of the Urban Water Management Plan. The hearing will be held at the Board of Directors meeting room, located at 4699 Hollister Avenue, Goleta CA, 93110. If you have any questions or would like to make comments regarding the Urban Water Management Plan, please contact me or Chris Rich, Water Supply & Conservation Manager at crich@goletawater.com or 805-879-4604.

Sincerely,

John McInnes
General Manager

cc: Daniel Singer, City Manager, City of Goleta

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Michael Allen
Chief Deputy Clerk of the Board
Santa Barbara County
105 East Anapamu Street, Room 407
Santa Barbara, CA 93101

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Allen:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

The District Board of Directors will hold a public hearing on November 8, 2011 at 5:30 pm to consider adoption of the Urban Water Management Plan. The hearing will be held at the Board of Directors meeting room, located at 4699 Hollister Avenue, Goleta CA, 93110. If you have any questions or would like to make comments regarding the Urban Water Management Plan, please contact me or Chris Rich, Water Supply & Conservation Manager at crich@goletawater.com or 805-879-4604.

Sincerely,

John McInnes
General Manager

cc: Chandra L. Wallar, County Executive Office, Santa Barbara County

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

City Clerk's Office
City of Santa Barbara
Post Office Box 1990
Santa Barbara, California 93102-1990

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear City Clerk:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Bruce Mowry, General Manager
Cachuma Operations and Maintenance Board
3301 Laurel Canyon Road
Santa Barbara, CA 93105-2017

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Mowry:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Charles Hamilton, General Manager
Carpinteria Valley Water District
1301 Santa Ynez Avenue
Carpinteria, CA 93013

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Hamilton:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Bill Brennan
General Manager
255 Industrial Way
Buellton, CA 93427-9565

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Brennan:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Randy Akens, General Manager
El Capitan Mutual Water Company
11500 US Highway 101
Goleta, CA 93117-9790

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Akens:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Kamil Azoury, General Manager
Goleta Sanitary District
One William Moffett Place
Goleta, CA 93117

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Azoury:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Mike Alvarado, General Manager
La Cumbre Mutual Water Company
695 Via Tranquila
Santa Barbara, CA 93110-2296

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Alvarado:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Tom Mosby, General Manager
Montecito Water District
583 San Ysidro Road
Montecito, CA 93108

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Mosby:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Matt Naftaly, Manager
Santa Barbara County Water Agency
123 East Anapamu Street
Santa Barbara, CA 93101

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Naftaly :

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Chris Dahlstrom, General Manager
San Ynez River Water Conservation District
Improvement District No. 1
P.O. Box 157
Santa Ynez, CA 93460

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Dahlstrom:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT

4699 HOLLISTER AVENUE

GOLETA, CALIFORNIA 93110-1999

PHONE 805-964-6761

October 25, 2011

Marc Fisher
Senior Associate Vice Chancellor of Facilities & Design
University of California, Santa Barbara
Facilities Management, Building 439
Santa Barbara, CA 93106-1030

Subject: Public Hearing – Goleta Water District Urban Water Management Plan

Dear Mr. Fisher:

The Goleta Water District (District) has prepared an update to the Urban Water Management Plan, consistent with Division 6 Part 2.6 of the California Water Code (§§ 10610-10656). Specifically, the Urban Water Management Plan assesses and forecasts demands and water supplies, analyzes water quality and reliability, and identifies strategies to encourage efficient water use. In order to ensure sufficient opportunity for public feedback and input, the Draft Urban Water Management Plan is available for review and is being provided via the homepage of the District's website at www.goletawater.com.

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Sincerely,

John McInnes
General Manager

GOLETA WATER DISTRICT
NOTICE OF PUBLIC HEARING
2010 URBAN WATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that at 5:30 pm on November 8, 2011 at 4699 Hollister Ave., Goleta, CA 93110, the Board of Directors of the Goleta Water District, will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider community comments and input on the Goleta Water District 2010 Urban Water Management Plan (UWMP).

The Draft UWMP is available for public review at the Goleta Water District's Administrative Office and online at www.goletawater.com. The draft UWMP has been developed in accordance with the California Urban Water Management Planning Act, Water Code sections 10610 through 10657, as well as the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and an important part of the 2010 UWMP update process.

Written comments can be submitted by 5 pm Friday, November 4, 2011 to the attention of Chris Rich, Water Supply & Conservation Manager at the address above or to crich@goletawater.com. Comments can also be made at the hearing noted above. Upon conclusion of the hearing, the Board of Directors may revise, change, modify, and/or adopt the 2010 Urban Water Management Plan.

If you are disabled and need accommodation to participate in the hearing, please contact Beth Horn, at 805-879-4621 for assistance at least 3 working days before the hearing.

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

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

Envelope No. 43391

In the Matter of: **Goleta Water District**

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

OCTOBER 24 / 2011

all in the year 2011 I hereby certify (or declare) under penalty of perjury that that foregoing is true and correct.

Executed on this 22nd of OCTOBER 2011 at Santa Barbara, CA.

Signature

GOLETA WATER DISTRICT
NOTICE OF PUBLIC HEARING
2010 URBAN WATER MANAGEMENT PLAN

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OCT 24 / 11 -- 43391

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

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

Envelope No. 43248

In the Matter of: Goleta Water District

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

NOVEMBER 1 / 2011

all in the year 2011 I hereby certify (or declare) under penalty of perjury that that foregoing is true and correct.

Executed on this 1st of NOVEMBER 2011 at Santa Barbara, CA.

Signature

GOLETA WATER DISTRICT
NOTICE OF PUBLIC HEARING
2010 URBAN WATER MANAGEMENT PLAN

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NOV 1 / 11 -- 43248

Adoption Meeting Materials

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Goleta Water District


2010 Urban Water Management Plan

Kennedy/Jenks Consultants
Engineers & Scientists

REQUIREMENTS OF AN UWMP

Major Contents

- UWMP Act applies to all CA water suppliers with 3,000 or more service connections or selling at least 3,000 AFY (retail or wholesale)
- Main focus: to identify gaps between supply and demand through time (20 year analysis required)
- UWMP must describe how demand will be met through time, in all hydrologic year types (normal, single-dry, and multiple-dry years)

Kennedy/Jenks Consultants
Engineers & Scientists

REQUIREMENTS OF AN UWMP

Major Contents (cont'd)

- Requires detailed description of all supply sources (surface, recycled, groundwater)
- Water quality issues
- Demand Management Measures (water use efficiency programs)
- Water shortage contingency planning
- Must update every five years, in years ending in 5 and 0 (extension granted for year 2010)

Kennedy/Jenks Consultants
Engineers & Scientists

NEW UWMP REQUIREMENTS

New Law: SBx7-7 ("20% by 2020"), reporting starts with 2010 UWMPs

- Base gross water use in GPCD: must be calculated using one of three methodologies
- Target reduction from base by 2020: must be calculated using one of four methodologies
- Agencies must hold public hearings to explain how targets will be met (can be held as part of the UWMP hearing)

Kennedy/Jenks Consultants
Engineers & Scientists

EXISTING AND PLANNED WATER SUPPLIES

	2010	2015	2020	2025	2030	2035
Cachuma Project Water	9,322	9,322	9,322	9,322	9,322	9,322
SWP Water	3,800	3,800	3,800	3,800	3,800	3,800
Groundwater	2,350	2,350	2,350	2,350	2,350	2,350
Local Surface Water						
Recycled Water	1,150	1,150	1,150	1,150	1,150	1,150
Transfers/Exchanges	0	0	0	0	0	0
Groundwater Banking	0	0	0	0	0	0
Total Existing Supplies	*16,622*	*16,622*	*16,622*	*16,622*	*16,622*	*16,622*
Planned Supplies	0	0	0	0	0	0
Total Existing and Planned Supplies	***16,622***	***16,622***	***16,622***	***16,622***	***16,622***	***16,622***

**** All values in acre-feet***

Kennedy/Jenks Consultants
Engineers & Scientists

METHODOLOGY FOR CALCULATING WATER USE

Water Demand Estimates

- **SBCAG Trends**
- **Past Water Use Trends**
- **Anticipated Land Use Developments**

- **Moderate Demand Estimate**
- **High Demand Estimate**

Kennedy/Jenks Consultants
Engineers & Scientists

WATER DEMAND ESTIMATES

	2015	2020	2025	2030	2035
Moderate Estimate of Demands (AFY)	15,229	15,240	15,690	16,141	16,617
High Estimate of Demands (AFY)	15,999	16,647	17,469	17,697	18,143

Kennedy/Jenks Consultants
Engineers & Scientists

SBX7-7 WATER USE TARGET METHODS

1. Eighty percent of the urban water supplier's baseline per capita daily water use
2. Per capita daily water use estimated using the sum of the following: Residential + Landscape + CII GPCD standards
3. **Ninety-five percent of the applicable state hydrologic region target (South Coast region target is 117 GPCD)**
4. Reduce the 10-year Base Daily Per Capita Water Use a specific amount for different water sectors:
   - Indoor residential water use to be reduced by 15 GPCD or an amount determined by use of DWR's "Best Management Practices Calculator"
   - A 20 percent savings on all unmetered uses
   - A 10 percent savings on baseline CII use
   - A 21.6 percent savings on current landscape and water loss uses

Kennedy/Jenks Consultants
Engineers & Scientists

SBX7-7 WATER USE AND TARGETS

Baseline Water Use – 119 GPCD
(1995 – 2004)

Interim Water Use Target (2015) – 115 GPCD

Compliance Water Use Target (2020) – 111 GPCD

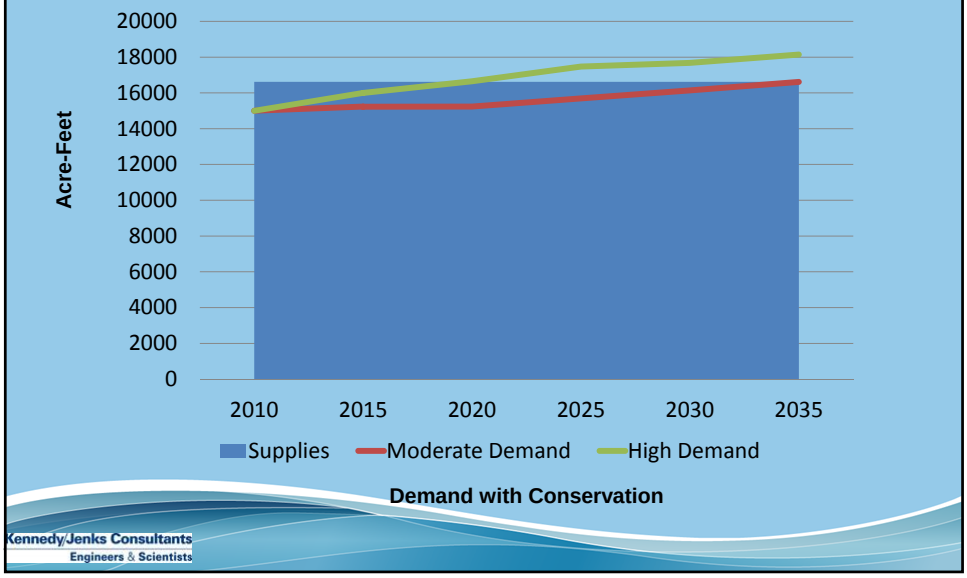
Kennedy/Jenks Consultants
Engineers & Scientists

SBX7-7 IMPLEMENTATION

- Meet targets through enhanced conservation programs
- Financial Impacts of SBx7-7 Implementation
  - Minor decrease in revenues related to reduced water sales
  - Minor increase in costs related to implementing enhanced conservation

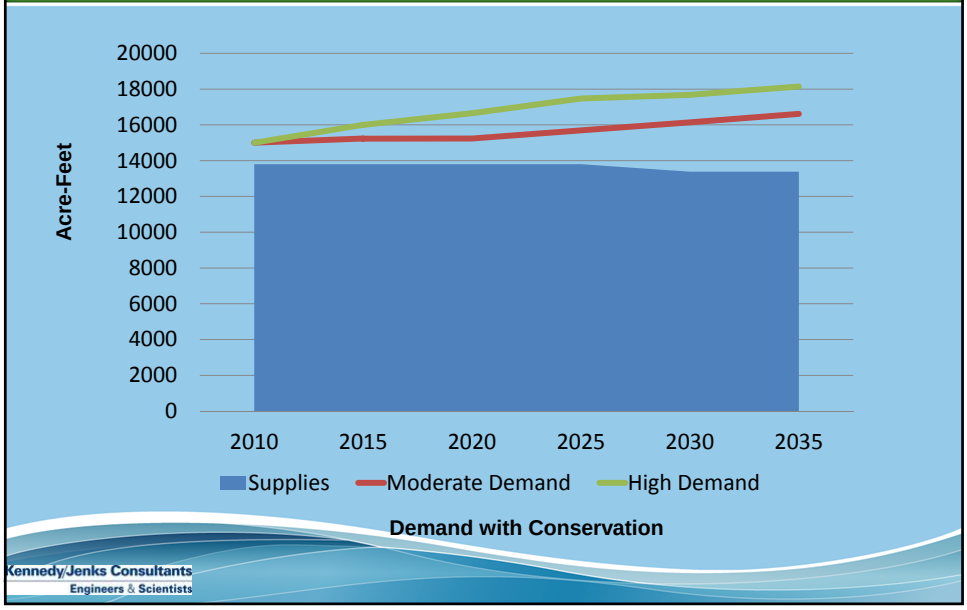
Kennedy/Jenks Consultants
Engineers & Scientists

PROJECTED NORMAL YEAR SUPPLIES AND DEMANDS



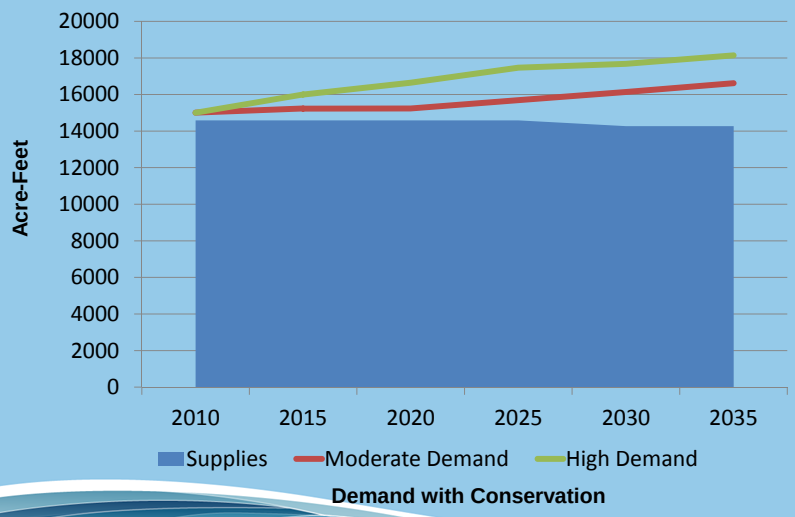
Kennedy/Jenks Consultants
Engineers & Scientists

PROJECTED SINGLE-DRY YEAR SUPPLIES AND DEMANDS



Kennedy/Jenks Consultants
Engineers & Scientists

PROJECTED MULTIPLE-DRY YEAR SUPPLIES AND DEMANDS



Kennedy/Jenks Consultants
Engineers & Scientists

SCHEDULE

- October 17 – Draft plan on Goleta Water District website
- October 24 – 1st Notice of Public Hearing in Santa Barbara New Press
- November 1 – 2nd Notice of Public Hearing in Santa Barbara News Press
- November 8 – Board Hearing and Adoption
- December 8 – To DWR by this date

Kennedy/Jenks Consultants
Engineers & Scientists

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Appendix C

Water Demand Projection Methodologies

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Water Demand Projection Methodology

Predicting future water use is difficult, particularly over a 25-year period, because there are many factors that influence water demand, including economic conditions, population growth, land use policies, changes in technology, and water costs. For this UWMP, three different projection methods were considered:

1. Estimating water demand growth consistent with population projections of the Santa Barbara County Association of Governments

2. Estimating water demands using past water growth demand trends

3. Estimating growth in water demands using anticipated land use development

Demand Projections Using Regional Population Projections

The most recent Regional Growth Forecast by the Santa Barbara County Association of Governments (SBCAG) was completed in 2002. SBCAG estimated the average annual population growth in the unincorporated portions of Santa Barbara County South Coast and in the City of Goleta would be 0.8 percent during the period 2000 to 2030. The 0.8 percent regional growth rate was applied to current residential, and commercial/institutional sectors. It was assumed that there will be little, if any, material increase in recreational (park and landscape irrigation) and agricultural uses. However, for forecasting purposes, recreation, and agricultural water uses have been set at the highest historic use from 1995 to 2010 to ensure that current demands and obligations are conservatively estimated. Unaccounted for losses of 8 percent, which was the observed loss rate for years 2005 to 2010, are not included in the following tables. The impact of losses on demand and water use is described in previous sections of the UWMP. For information on recycled water demands, see Chapters 2 and 4 of the UWMP.

Table C-1 shows current and projected water uses by sector through year 2035 (calendar year) using the regional population growth method and the assumptions described above.

TABLE C-1
PROJECTED WATER DEMAND BY SECTOR BASED ON REGIONAL POPULATION GROWTH (AFY)

Water Use Type	Current (2010)[a]	2015	2020	2025	2030	2035
Single Family Residential	4,349	4,526	4,710	4,901	5,100	5,308
Multi Family Residential	1,766	1,837	1,912	1,990	2,071	2,155
Commercial/Institutional	3,336	3,471	3,612	3,759	3,912	4,071
Park and Landscape Irrigation[b]	588	588	588	588	588	588
Agriculture[b]	3,374	3,374	3,374	3,374	3,374	3,374
Total Estimated Demand without Conservation	*13,412*	*13,796*	*14,196*	*14,611*	*15,044*	*15,495*
Conservation (2% by 2015, 5% by 2020)		*276*	*710*	*731*	*752*	*775*
Total Estimated Demand with Conservation		*13,520*	*13,486*	*13,881*	*14,292*	*14,720*

Notes:
(a) GWD sales data
(b) For forecasting purposes, Park and Landscape Irrigation water use and Agricultural water use set at highest historic use 1995-2010.

Demand Projections Using Recent Water Demand Trends

Future water demand was also estimated using historic water use growth rates in the GWD service area for the last 10 years of record (2000 to 2010). The results of this method are highly dependent on the period of record used to calculate the water use growth rate and are highly influenced by year-to-year fluctuations in precipitation as well as the recent downturn in the economy. Fluctuations from year to year make establishing a long-term growth trend difficult. Table C-2 shows average annual growth rates for individual water use sectors. GWD does not anticipate continued and ongoing decrease in water use, and as Table C-2 demonstrates, past water use trends may not accurately predict future water use. Accordingly, it is not recommended that water use trends over the past 10 years be used to predict future demand behavior.

TABLE C-2
WATER USE TRENDS 2000 TO 2010

Water Use Type	Growth Rate 2000 to 2010
Single Family Residential	-0.75%
Multi Family Residential	-3.00%
Commercial/Institutional	1.94%
Park and Landscape Irrigation	1.91%
Recycled Water Uses	-2.59%
Agriculture	-0.39%
Average	-0.49%

Demand Projections Using Anticipated Land Use Developments

The final method of estimating future water use involves gathering future water demand data related to land uses in the GWD service area. This method requires analysis of a variety of plans overseen by the City of Goleta, the University of California, the Santa Barbara Airport, and Santa Barbara County (Isla Vista and other unincorporated areas). Data sources and assumptions related to water demand forecasts based on future land uses are described in the following subsections.

City of Goleta

The City of Goleta adopted its General Plan/Coastal Land Use Plan in October 2006. An Environmental Impact Report, considering impacts to water supply was prepared as part of the environmental process. In May 2008 GWD prepared a Water Supply Assessment pursuant to Water Code Section 10910 for the amended Goleta General Plan. As part of that Water Supply Assessment the City provided GWD with the buildout data they wished to have considered. Since preparation of the Water Supply Assessment the City of Goleta has approved further amendments (Track 3 Amendments in September 2009) to the General Plan and prepared a Supplemental Environmental Impact Report to evaluate potential impacts, including the impact to water supply. Review of the 2009 amendments and the associated Supplemental Environmental Impact Report indicate no anticipated change to water demands. For this reason, the projections of demand for the City of Goleta rely on the 2008 Water Supply Assessment, modified to reflect the fact that full buildout of the City could occur during the period of the plan (2010 to 2035). Table C-3 shows the projected increase in water use in the City of Goleta.

TABLE C-3
ANTICIPATED INCREASE IN WATER USE IN CITY OF GOLETA (AFY)[(a)]

	2015	2020	2025	2030	2035
Single Family Residential	41	72	102	132	163
Multi Family Residential	136	238	340	442	544
Commercial/Institutional	94	164	235	305	375
Park and Landscape Irrigation	0	0	0	0	0
Recycled Water Uses	0	0	0	0	0
Agriculture	0	0	0	0	0
Total	**271**	**474**	**676**	**878**	**1,082**

Note:
(a) Increase from current (2010) water use

In 2010, Bishop Ranch 2000, LLC submitted an application to the City requesting a general plan amendment for a land use conversion and a development agreement. On September 20, 2011 the Goleta City Council decided not to initiate a General Plan Amendment for the project. As a result, the above demand forecast does not include water demands associated with this project. Any future application for new water service associated with Bishop Ranch must follow the process set forth in the District Code and comply with the SAFE Water Supplies Ordinance.

Santa Barbara Airport

GWD delivers water to the Santa Barbara Airport pursuant to the 1970 Joint Powers Overlap Agreement (as amended), which has provided for coordination between the City of Santa Barbara and GWD where their jurisdictional boundaries overlap. The 1982 amendment to the Agreement defines the maximum amount of water to be delivered to the Airport as 240 AFY. The Airport property is served by GWD through a master meter and six irrigation meters. In addition, individual commercial tenants at the Airport are served directly by GWD.

The Santa Barbara Airport has two major projects to be completed during the period of this Plan. In 1997 the City of Santa Barbara approved the Airport Industrial Specific Plan, which provides for development of research, office, and light industrial land uses north of Hollister Avenue on City-owned lands. The additional water use associated with the Industrial Specific Plan at full buildout was project to be 38 AFY. It is anticipated that these uses will be realized by 2020, with 19 AFY occurring by year 2015.

In addition the Airport has recently opened an enlarged terminal building which will provide greater square footage to serve passengers and allow an increase in passengers over time. The Airport estimates that the increased water use associated with a larger terminal, due to more landscaping, bathrooms, and food service will be about 6 AFY. It is assumed that the full increase in water demand from the new terminal building will occur by 2015.

The projected increase in water use at the Airport is shown in Table C-4.

TABLE C-4
ANTICIPATED INCREASE IN WATER USE SANTA BARBARA AIRPORT (AFY)[(a)]

	2015	2020	2025	2030	2035
Single Family Residential	0	0	0	0	0
Multi-Family Residential	0	0	0	0	0
Commercial/Institutional	25	44	44	44	44
Park and Landscape Irrigation	0	0	0	0	0
Recycled Water Uses	0	0	0	0	0
Agriculture	0	0	0	0	0
Total	**25**	**44**	**44**	**44**	**44**

Note:
(a) Increase from current (2010) water use

University of California

GWD provides potable and recycled water to the University of California. Water service for the University is subject to the 1991 Agreement between GWD and the University. The Agreement provides the University with a quantified amount of both potable and recycled water for both current uses and to support new development proposed by the University's Long Range Development Plan (LRDP).

The current LRDP was approved by the University of California Regents in September 2010, but because much of the campus is in the coastal zone it must also be approved by the California Coastal Commission. A revised LRPD was submitted to the California Coastal Commission in May 2011. The revised LRDP covers the period 2010 to 2025. Table C-5 summarizes development projects proposed under the 2010 LRDP.

TABLE C-5
DEVELOPMENT PROJECTS PROPOSED UNDER THE UNIVERSITY OF CALIFORNIA LRDP

Campus Project[(a)]		Description
Instruction, Research and Support Space	1,800,000	assignable square feet (asf)
Dorms[(b)]	4,766	beds
Student Family Units	239	units
Faculty and Staff Units	1,874	units
Athletic/Recreation Fields	8	acres

Notes:
(a) From UC Santa Barbara 2010 Long Range Development Plan, Table A.2 and 2010 LRDP Coastal Commission Report. page 2, accessed at http://lrdp.id.ucsb.edu/ .
(b) Excludes the recently completed San Clemente project

In addition to the new development described in Table C-5, GWD and UCSB have estimated that there remains some approved, but not yet built, projects related to the 1990 LRDP. GWD and UCSB estimate that these projects would result in 256 AFY of additional potable water demand (GWD Comment Letter to University of California at Santa Barbara 2008 Long Range Development Plan Recirculated Draft Environmental Impact Report Sections 20 March 2009, and UCSB LRDP EIR Response to Comments dated July 2010). The total estimated new water use at the University of California associated with continued development of facilities and housing under the 2010 LRDP, combined with the 1990 LRDP is about 1,393 AF, as presented in Table C-6. All water uses would be considered Commercial/Institutional, except water used at the Athletic/Recreation fields, which are anticipated to be served recycled water.

TABLE C-6
ESTIMATE OF NEW WATER USE AT UNIVERSITY OF CALIFORNIA (AFY)

Campus Project	Units		Water Demand Duty Factor	Estimated Water Use (AFY)
Remaining Development 1990 LRDP				256
Instruction, Research and Support Space	1,800,000	asf	0.233 AFY/1000 sq. ft[(a)]	419
Dorms	4,766	beds	0.055 AFY/bed[(a)]	262
Student Family Units	239	units	0.21 AFY/unit[(a)]	50
Faculty and Staff Units	1,874	units	0.21 AFY/unit[(a)]	394
Athletic/Recreation Fields	8	acres	1.5 AFY/acre[(b)]	12
			Total	**1,393**

Notes:
(a) Water Duty Factor from 2005 UWMP.
(b) Estimated Water Duty Factor

Based on the above projections of water use for currently identified projects, the estimate of new water use at the University of California for the period 2010 to 2035 is presented in Table C-7. Within Table C-7 it is assumed new development at the campus is phased from 2010 to 2025.

TABLE C-7
ESTIMATED NEW WATER USE AT UNIVERSITY OF CALIFORNIA 2015 TO 2035 (AFY)[(a)]

	2015	2020	2025	2030	2035
Single Family Residential	0	0	0	0	0
Multi-Family Residential	0	0	0	0	0
Commercial/Institutional[(b)]	460	921	1,125	1,125	1,381
Park and Landscape Irrigation	0	0	0	0	0
Recycled Water Uses	4	8	12	12	12
Agriculture	0	0	0	0	0
Total	**464**	**929**	**1,137**	**1,137**	**1,393**

Notes:
(a) Increase from current (2010) water use
(b) Includes 256 AF of demand related to development remaining under 1990 LRPD

Santa Barbara County – Unincorporated Area/Isla Vista Area Plan

In March 2005, GWD completed a Water Supply Assessment for the County of Santa Barbara's Isla Vista Master Plan; this analysis was updated in November 2005 to reflect changes in the Master Plan densities. The Water Supply Assessment anticipated:

- 2,221 new multi-family residential units requiring 446 AFY
- 51,485 square feet of new commercial space requiring 12 AFY

There have been four amendments to the Isla Vista Master Plan, but these have related to financing of redevelopment projects and are not anticipated to change the basic character of the

proposed land uses or their potential water use. Since 2005 the only significant development in Isla Vista has been completion of the Parkview Apartments (20 multi-family residential units) and the 6680 Sueno Project (4 multi-family residential units) (Santa Barbara County Redevelopment Agency Five-Year Implementation Plan Update for the Period 2012 – 2016 Isla Vista Redevelopment Project Area, April 2011). Several new projects are underway, but are not yet currently receiving water from the District. Therefore it is anticipated that the Isla Vista Master Plan could still result in:

- 2,197 new multifamily residential units requiring 441 AFY
- 51,485 square feet of new commercial space requiring 12 AFY

For the purposes of this Plan, consistent with the 2005 UWMP, it is assumed that these new demands would be realized by year 2025. The estimate of new water use within the Isla Vista Area for the period 2010 to 2035 is presented in Table C-8.

TABLE C-8
ESTIMATED NEW WATER USE WITHIN ISLA VISTA AREA 2015 TO 2035 (AFY)[(a)]

	2015	2020	2025	2030	2035
Single Family Residential	0	0	0	0	0
Multi Family Residential	150	300	441	441	441
Commercial/Institutional	4	8	12	12	12
Park and Landscape Irrigation	0	0	0	0	0
Recycled Water Uses	0	0	0	0	0
Agriculture	0	0	0	0	0
Total	**154**	**308**	**453**	**453**	**453**

Note:
(a) Increase from current (2010) water use

Santa Barbara County – Unincorporated Area/Goleta Area Plan

GWD serves not only Isla Vista, but also a portion of what is referred to as the Goleta Area within unincorporated Santa Barbara County. A portion of the Goleta Area is also served by the La Cumbre Mutual Water Company. Currently the County of Santa Barbara is updating the Goleta Area Plan for the Eastern portion of the Goleta Valley (that portion east of the City of Goleta). The 1993 Goleta Community Plan remains in effect for the Western portion of the Goleta Valley. The Draft Goleta Valley Community Plan (called the "Initiation Draft" dated June 2011) anticipates:

- 1,923 new residential units
- 1,284,905 square feet of new commercial uses

  (Goleta Valley Community Plan Initiation Draft Part I June 1, 2011 pages 53 and 54)

Based on the zoning, residential units would primarily be single-family units. The timeframe for the Goleta Valley Community Plan is 15 to 30 years. For the purposes of this Plan it is assumed buildout of the Goleta Area will occur by 2025. GWD recognizes that the Goleta Area

Plan is still in a draft stage. Further, it is recognized that a portion of the new residential uses proposed could occur in the La Cumbre Mutual Water Company service area. Table C-9 shows the potential new water demands anticipated by GWD for the Goleta Area.

TABLE C-9
ESTIMATED NEW WATER USE WITHIN GOLETA AREA 2015 TO 2035 (AFY)[(a)]

	2015	2020	2025	2030	2035
Single Family Residential[(b)]	175	350	523	523	523
Multi Family Residential	0	0	0	0	0
Commercial/Institutional[(c)]	100	200	298	298	298
Park and Landscape Irrigation	0	0	0	0	0
Recycled Water Uses	0	0	0	0	0
Agriculture	0	0	0	0	0
Total	**275**	**550**	**821**	**821**	**821**

Notes:
(a) Increase from current (2010) water use
(b) Single Family Residential Water Demand estimated at 0.272 AFY per unit consistent with 2005 UWMP Table A-10.
(c) Commercial water demand estimated as 0.232 AFY per 1000 sq ft. consistent with the 2005 UWMP Table A-11

Summary of Projections of Future Water Use Using Anticipated Land Use Development

The projections of future water use by the local jurisdictions described above were combined with the current water use values to predict the total water use in GWD for years 2015 to 2035. These projections are presented in Table C-10. Changes in recycled water demand are minor and not shown in Table C-10; for information on recycled water demands, see Chapters 2 and 4 of the UWMP.

TABLE C-10
PROJECTED WATER DEMAND BY SECTOR BASED ON ANTICIPATED LAND USE DEVELOPMENTS (AFY)

Water Use Type	Current (2010)[(a)]	2015	2020	2025	2030	2035
Single Family Residential	4,349	4,565	4,770	4,973	5,003	5,035
Multi Family Residential	1,766	2,052	2,304	2,547	2,649	2,751
Commercial/Institutional	3,336	4,019	4,673	5,049	5,119	5,446
Park and Landscape Irrigation[(b)]	588	588	588	588	588	588
Agriculture[(b)]	3,374	3,374	3,374	3,374	3,374	3,374
Total Estimated Demand without Conservation	*13,412*	*14,597*	*15,708*	*16,531*	*16,733*	*17,193*
Conservation (2% by 2015, 5% by 2020)		292	785	827	837	860
Total Estimated Demand with Conservation		*14,305*	*14,923*	*15,704*	*15,896*	*16,333*

Notes:
(a) GWD sales data
(b) For forecasting purposes, Park and Landscape Irrigation water use and Agricultural water use set at highest historic use 1995-2010.

Comparison of Water Demand Projection Methodologies

The three projection methodologies evaluated were:

1. Estimating water demand growth consistent with population projections of the Santa Barbara County Association of Governments

2. Estimating water demands using past water growth demand trends

3. Estimating growth in water demands using anticipated land use development

4. Using past water demands to predict future water demands proved to be unreasonable for this Plan, given that a reduction in demand would be anticipated. Using growth rates described by the SBCAG resulted in slightly lower demands than that seen when estimating demands using anticipated land use developments; projections differ by 5 to 12 percent in any year. To be conservative GWD has chosen to consider both the "moderate" water demand consistent with population projections of the Santa Barbara Association of Governments and the "high" demand projections derived from anticipated land use developments. This is appropriate, as the "high" demand addresses authorized water use entitlements that are not subject to the SAFE Ordinance, including Reclaimable Meters, Water Service Agreements, District permits, and Measure T Allotments.[1] In these cases, land use and general plan zoning designations work to affect community development and potential use of authorized water entitlements.

Notably, during the spring of 2012, GWD will initiate an update to the water duty factors used to forecast water demands associated with land use and development. This effort, which is described in the District's FY 2011-12 Budget, will culminate in the early fall of 2012, providing GWD with fresh data to use for analysis of water allocations and future demand requirements.

[1] Described in more detail by the 2011 Water Supply Management Plan, Appendix 14.2.2

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Appendix D

Groundwater Management

These items are being provided on compact disc.

- Groundwater Management Plan for Goleta Groundwater Basin
- Wright Judgment (Martha Wright et al v. Goleta Water District et al, Case No. SM57969)
- Goleta Water District Water Supply Management Plan
- SAFE Ordinance

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Groundwater Management Plan for Goleta Groundwater Basin

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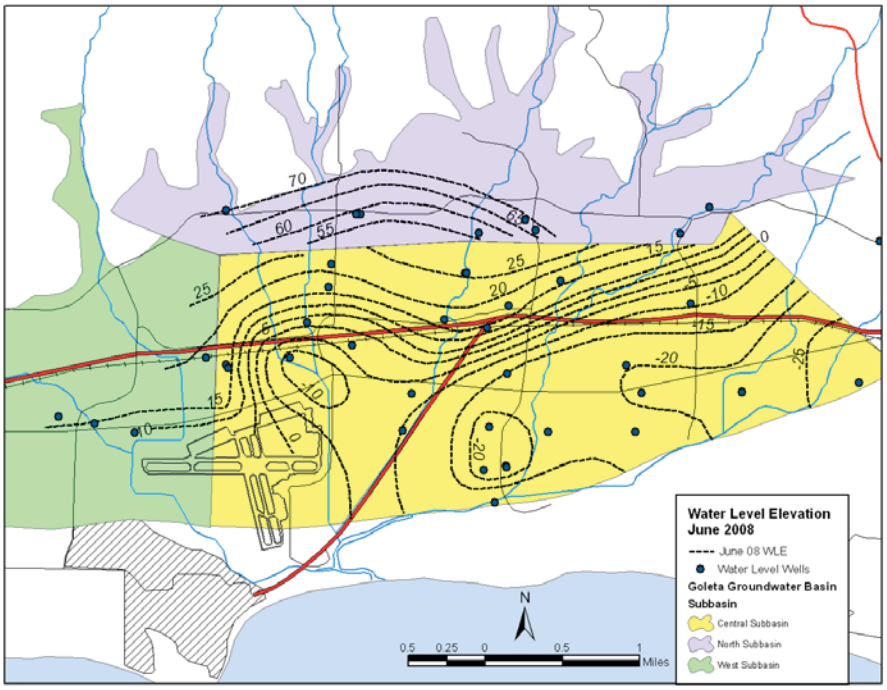
Groundwater Management Plan

Goleta Groundwater Basin

Final



Prepared for

Goleta Water District

La Cumbre Mutual Water Company

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May 11, 2010

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1 Introduction

Goleta Water District ("GWD") and La Cumbre Mutual Water Company ("La Cumbre"), the purveyors of groundwater in the Goleta Groundwater Basin (Figure 1-1), joined in developing a Groundwater Management Plan ("Plan") for the basin. This Plan reiterates current adjudication and voter-passed components of groundwater management, addresses groundwater issues, adopts Basin Management Objectives, outlines management strategies for the basin, and recommends future tasks and timelines associated with these tasks.

The process of preparing and adopting the Plan included public meetings with input from stakeholders, public drafts circulated for comments, and adoption by both water purveyors.

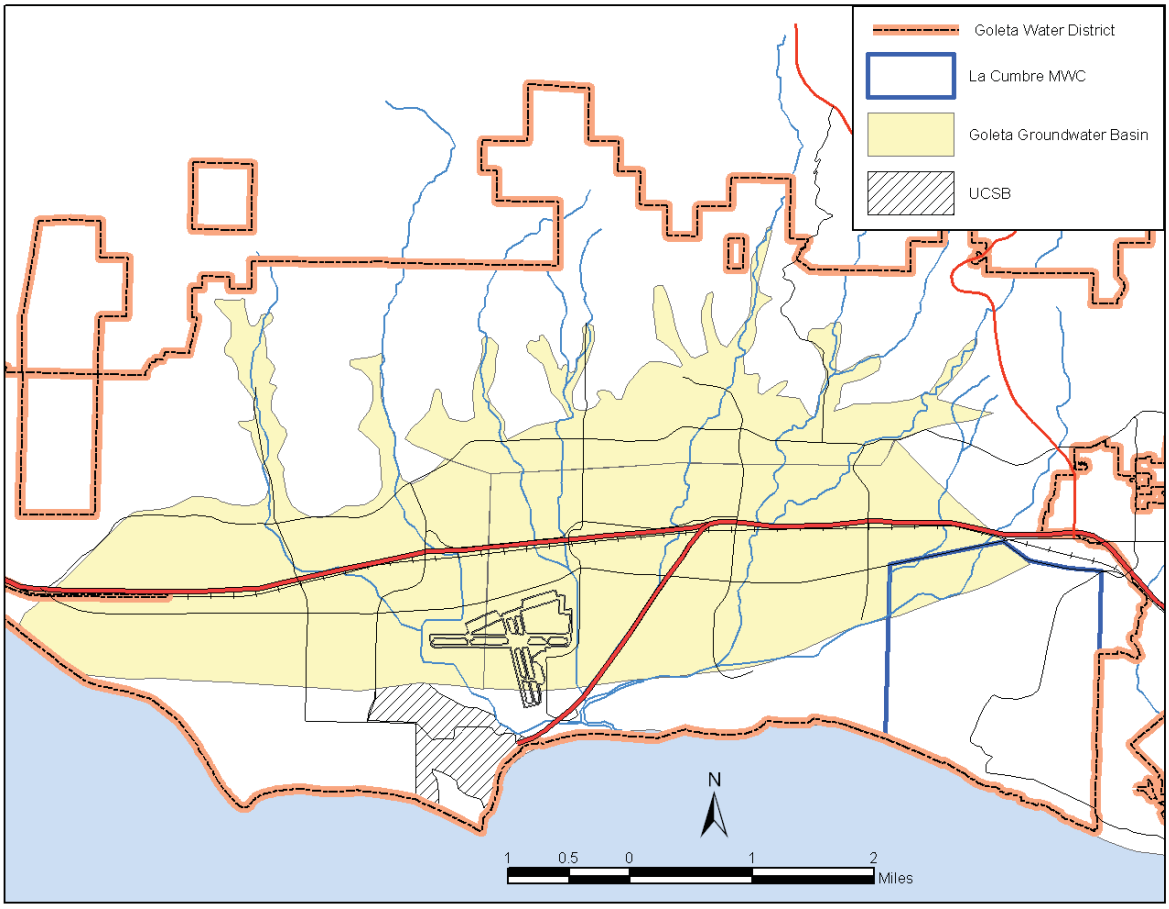

Figure 1-1. Goleta Groundwater Basin with service areas of Goleta Water District and La Cumbre Mutual Water Company.

1.1 Pre-Wright Judgment

As the result of a long period of drier than average years from the 1940s to the 1970s, coupled with growth in the area, water supplies in the Goleta Groundwater Basin

were considered to be short of demand by the 1970s. As a result, GWD adopted various rules and regulations to restrict the use of water. First, GWD adopted Ordinance 72-2, which began a moratorium on new water service connections. The Ordinance was modified over the years to make exceptions for fire hydrant flow and service connections that would result in water savings to GWD. This moratorium remained in effect until December 1996, when Ordinance 96-4 rescinded it following the importation of State Water. Ordinance 72-2 was for the most part superseded by the Responsible Water Policy Ordinance which was adopted in May 1973 by voter initiative. This Ordinance banned the importation of water from outside the County without voter approval, which was largely aimed at preventing GWD from connecting to the State Water Project. As a result of these actions, considerable emphasis was placed on pumping groundwater, so significant pumping in the basin continued.

1.2 Wright Judgment

In 1973 a group of landowners filed suit for the adjudication of water rights in the Goleta North-Central Groundwater Basin (Wright v. Goleta Water District[1]). As is common in groundwater adjudications, after cross complaints and an appeal, the case took two decades to be decided; the decision was finalized in 1989 ("Wright Judgment"). The major elements of the Wright Judgment dealing with groundwater management include:

- Overlying landowners assured of superior rights to groundwater pumping; overlying pumping determined to be 351 acre-feet per year, which can increase without Court approval as long as there is no change in how the pumped groundwater would be used (e.g., change of use would be conversion of agricultural to urban use);
- La Cumbre given senior appropriative right to extract 1,000 acre-feet per year from basin (calculated on a ten-year running average), plus any Temporary Surplus[2];
- GWD given appropriative right to extract 2,000 acre-feet per year from basin, plus any Temporary Surplus;
- Safe yield of the basin was determined to be 3,410 acre-feet per year;
- Perennial yield, which included 350 acre-feet per year for GWD injection well system and 100 acre-feet per year of return flow (applied water that percolates back to the aquifer), was determined to be 3,700 acre-feet per year;
- GWD required to submit to Court a Water Plan, including development of supplemental supplies, whose objective was to bring the basin into hydrologic balance by 1998;
- Status report on the basin to be filed with the Court on an annual basis;

[1] Martha H. Wright et al. v. Goleta Water District et al., 1989, Amended Judgment, Superior Court of Santa Barbara County Case No. SM57969.

[2] Temporary Surplus is defined in the Judgment as "The amount of water that can be extracted from the Basin in any Water Year in excess of the Basin's Safe Yield".

- Overlying pumpers may transfer their water right and well(s) to GWD in return for service from GWD. Such exchanges have added 350 acre-feet per year of water rights to GWD as of 2008 (Table 1-1);
- GWD may inject water into the basin using La Cumbre wells until 1998; after 1998, La Cumbre and GWD may each store water in the basin;
- Court assumes continuing jurisdiction in the basin.
- In 1992, the Court reaffirmed the continuing right of GWD to store up to 2,000 acre-feet per year in the basin[3].
- In 1998, the Court found that the basin was in Hydrologic Balance[4] and that summary annual reports to litigation parties could replace annual reports to the Court[5]. It also confirmed GWD's storage of 18,084 acre-feet as of 1998.

Year	*Base Water Right (AFY)*	*Exchanges To-Date (AFY)*	*Total Water Right (AFY)*
1992	2,000	23	2,023
1993	2,000	37	2,037
1994	2,000	51	2,051
1995	2,000	51	2,051
1996	2,000	175	2,175
1997	2,000	224	2,224
1998	2,000	226	2,226
1999	2,000	226	2,226
2000	2,000	226	2,226
2001	2,000	226	2,226
2002	2,000	226	2,226
2003	2,000	350	2,350
2004	2,000	350	2,350
2005	2,000	350	2,350
2006	2,000	350	2,350
2007	2,000	350	2,350
2008	2,000	350	2,350
2009	2,000	350	2,350

Table 1-1. GWD water rights under the Wright Judgment, as filed in GWD's Annual Reports.

As a result of the Wright Judgment, GWD was required to annually file a report to the Court. In 1998, the Court determined that the GWD had achieved Hydrologic Balance as that term is defined in the Judgment, had successfully complied with the Judgment, and allowed GWD to simplify the report and to no longer file it with the Court

[3] Martha H. Wright et al. v. Goleta Water District et al., 1992, Order Regarding Goleta's Right to Store Water in the North Central Basin, Superior Court of Santa Barbara County Case No. SM57969.

[4] As it pertains to the basin as a whole, Hydrologic Balance exists when the perennial recharge exceeds the perennial extractions from the basin.

[5] Martha H. Wright et al. v. Goleta Water District et al., 1998, Order Regarding Goleta Water District's Tenth Annual Report, Superior Court of Santa Barbara County Case No. SM57969.

but send it to the various parties in the litigation. This report itemizes extractions from the basin, groundwater storage, and changes in groundwater elevations from key wells. GWD has stored water in the basin by direct injection, as well as by taking Cachuma water and its State Water allocation in lieu of pumping groundwater, resulting in 42,530 acre-feet of stored water by 2008 (see Section 4.4.1 – *Groundwater Storage Programs* for details).

1.3 SAFE Ordinance (GWD)

As part of authorization for importation of State Project Water, the Safe Water Supplies Ordinance ("SAFE") was approved by GWD voters in 1991 and amended in 1994[6]. SAFE amended and superseded the Responsible Water Policy Ordinance. The key elements of SAFE include:

- The GWD is authorized to acquire an additional entitlement to the State Water Project in an amount of up to 2,500 acre-feet per year to supplement its allocation of 4,500 acre-feet per year;
- The GWD shall plan for the delivery of 3,800 acre-feet per year of State Water as the amount of firm average long-term yield (this was based on the then-current availability calculations by the State Water Contractors), which includes the basic allocation of 4,500 acre-feet per year, the 2,500 acre-feet per year supplement, and GWD's share of the drought buffer held by the Central Coast Water Authority;
- Any excess water actually delivered over 3,800 acre-feet per year shall be stored in the Central subbasin until the basin is replenished to its 1972 level, for use during drought conditions ("Drought Buffer"). An "Annual Storage Commitment" of at least 2,000 acre-feet per year is required for replenishment to 1972 levels (first instituted in 1997). As of 2008, a total of 42,530 acre-feet of water have been added to basin storage through direct injection and using other water supplies in lieu of pumping groundwater (GWD, 2008);
- The Drought Buffer can only be used for delivery to existing customers when a drought on the South Coast causes a reduction in GWD's annual deliveries from Lake Cachuma, and cannot be used as a supplemental supply for new or additional water demands;
- Once the basin has recovered to 1972 levels, GWD can again utilize the yield of the basin to provide water service to existing customers. It has been estimated that in 2008, storage in the Central subbasin is 6,000 to 12,000 acre-feet above 1972 levels (GWD, 2008). Storage is discussed further in this Plan;
- For each year that all other obligations for water delivery have been met, GWD may provide new service connections up to 1% of the total potable water supply. When new service is connected, the Annual Storage Commitment for the Drought Buffer must permanently increase by ⅔ of the

[6] GWD Ordinances No. 91-01 and 94-03.

new demand. The requirements for new service connections have been met over the last decade, with new service connections adding 559 acre-feet per year of demand, resulting in an increase of the Annual Storage Commitment to 2,373 acre-feet per year.

2 Groundwater Basin and Hydrogeology

2.1 Basin Boundaries

The Goleta Groundwater Basin is generally divided into three subbasins: the Central subbasin where the majority of the extractions occur; the West subbasin which is generally shallower and has the least extractions; and the North subbasin. The boundaries for these subbasins and for the Goleta basin as a whole vary among investigators. Some of the boundaries coincide with faults that are mapped at the surface or are inferred from hydrogeologic evidence such as large differences in groundwater elevations on each side of the "fault". Other boundaries are defined by the thinning edges of water-bearing strata against bedrock highs and upstream valleys. Because of the differences in interpretations of this evidence, basin and subbasin boundaries have been drawn differently.

2.1.1 Boundary of Overall Basin

There are common boundaries among investigators in portions of the basin. The southern boundary of the Goleta Groundwater Basin is defined by the trace of the More Ranch Fault (Figure 2-1), where consolidated rocks of Tertiary age are uplifted along the south side of the fault and form a hydrologic barrier between the ocean and the water-bearing deposits of the ground-water basin (e.g., Upson, 1951). The location of the More Ranch Fault has varied slightly among investigators; for this Plan, the location of the fault (and, therefore, the southern boundary of the groundwater basin) is taken from the latest U.S. Geological Survey ("USGS") mapping (Minor and others, 2006).

The eastern boundary of the Goleta Groundwater Basin has historically been defined as the location of the Modoc Fault. The Modoc Fault has been considered to be a hydrologic barrier, although the USGS suggested that along the eastern boundary near its southern juncture with the More Ranch fault, groundwater discharges freely from the adjacent Foothill Groundwater Basin on the east into the Goleta Groundwater Basin (Freckleton, 1989).

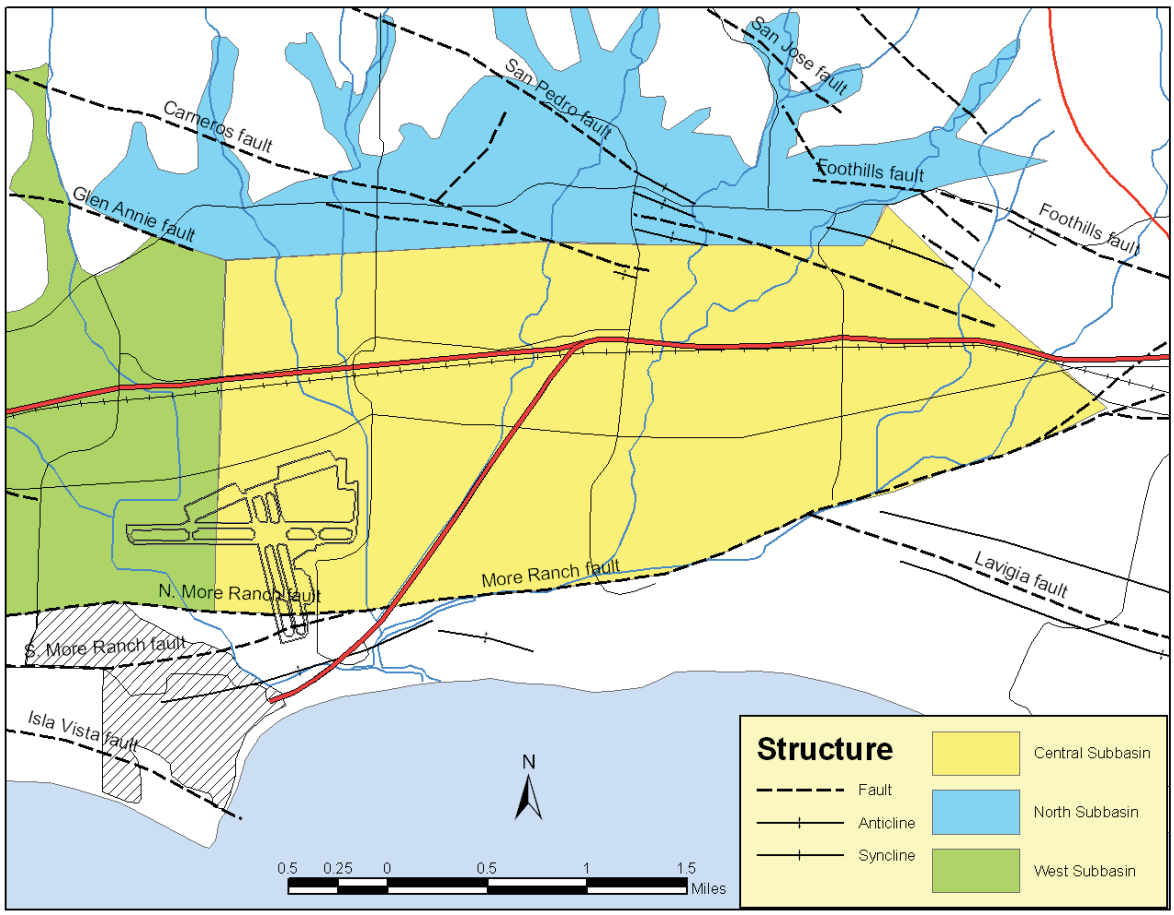

Figure 2-1. Basin and subbasin boundaries used in this Plan. Faults and folds are from Minor and others (2006).

Upson (1951) determined the location of the barrier on the basis of differences in water-level altitudes and the lack of transmission of pumping effects across the fault. Upson (1951), Evenson and others (1962), and Mann (1976) indicated that the quantity of ground water moving across the boundary historically has been small. The USGS also considered the eastern boundary of the basin as the Modoc Fault in a water resources paper (Kaehler and others, 1997), although a more-recent surface geology map by the USGS (Minor and others, 2006) did not identify the Modoc Fault – instead they identified faults and folds across a half mile-wide deformation zone that encompasses the various locations of the boundary by a number of investigators (Figure 2-1). There are no known groundwater wells within this zone of deformation. The eastern basin boundary in the Wright Judgment is within this zone of faulting and folding. For this Plan, the Wright Judgment boundary is considered as the eastern basin boundary.

The northern boundary of the Goleta Groundwater Basin has been defined by the northern edge of water-bearing sediments as they abut or thin out against older more-consolidated sediments. The exact location of the boundary varies with the investigator. For this Plan, the northern basin boundary from the Wright Judgment is used as far as it

extends to the west; west of the Wright Judgment, the basin boundary of CH2MHill (2006) is used.

2.1.2 Subbasin Boundaries

The boundaries between subbasins within the Goleta Groundwater Basin have been defined by either the location of suspected faulting or by changes in hydrologic properties across the boundary (Figure 2-1). None of the subbasin boundaries coincide with surface traces of faults mapped by the USGS (e.g., Minor and others, 2006).

Upson (1951) stated that the "Goleta Fault" and extensions of the Carneros and Glen Annie faults all inhibit the movement of ground water in the main aquifers in the basin. He located the east-west trending boundary on the basis of differences in water levels and lack of transmission of pumping effects across the inferred trace at several sites. Evenson and others (1962) proposed a slightly different location and stated that groundwater moves across this hydrologic barrier in the upper part of the groundwater system. The subbasin boundary in the Wright Judgment largely follows that of Evenson and others. The subbasin boundary was subsequently moved about a thousand feet farther south in reports to the Goleta Water District (e.g., CH2MHill, 2006). For this Plan, the subbasin boundary follows the most-recent interpretation by CH2MHill. However, for discussions of water rights issues, the Wright Judgment boundary must be used; this will be called out in the Plan when necessary.

The north-south-trending boundary between the Central and West subbasins is characterized by significant changes in water quality and hydraulic characteristics thought to be related to different sediment types and thicknesses (GWD, 2008). Evenson and others (1962) believed that there were differences in water levels in wells and in water level trends across the boundary. Mann (1976) documented water quality differences on opposite sides of the boundary. Evenson and others (1962) attributed the boundary to a lateral change in permeability caused by a facies change in the sediments or by faulting in the unconsolidated sediments. The location of the subbasin boundary varies among investigators by 2,500 ft in an east-west direction. The boundary used in this Plan is from the Wright Judgment because of water rights implications. However, hydrographs of wells to the east of the Wright boundary appear to be more similar to those in the West subbasin than in the Central subbasin. For this reason, the subbasin boundary in the new groundwater model is located to the east of the Wright boundary (CH2MHill, 2009b).

2.2 Basin Aquifers

The Goleta Groundwater Basin is bounded by consolidated rocks of Tertiary age. The principal water-bearing units are younger alluvium of Holocene age, terrace deposits and older alluvium of Pleistocene age, and the Santa Barbara Formation of Pleistocene age (e.g., Kaehler and others, 1997). The younger and older alluvium are generally less than 250 ft thick and the Santa Barbara Formation is as much as 2,000 ft thick.

The Santa Barbara Formation is the primary water-bearing unit in the basin and comprises primarily of marine sand, silt, and clay. The hydrostratigraphy of the basin has been divided into hydrostratigraphic zones based on geologic and geophysical logs

(CH2MHill, 2005). From youngest to oldest, the zones that produce meaningful amounts of groundwater include:

- An Upper Producing Zone consisting of alternating sequences of sands, silts, and sandy clays that attain a maximum thickness of up to 600 feet. In the Central subbasin, mostly private wells produce from this unit.
- A Lower Producing Zone of clean fine sands and silt about 200 ft thick in the Central subbasin. This Lower Zone is separated from the Upper Zone by a clay-rich aquitard. GWD and La Cumbre wells produce from this zone.

The hydraulic connection between the Upper and Lower Producing zones is not well understood. Groundwater elevations measured from wells in each zone have generally been combined when water level contours have been constructed.

2.3 Sources of Recharge

The major sources of recharge (other than artificial recharge by the water agencies) to the Goleta Groundwater Basin are likely infiltration from rainfall, percolation from streambeds, deep percolation of irrigation waters, and leakage from the adjacent (largely upslope) consolidated rocks. Recharge from surface sources can only occur if the sediments between the ground surface and the aquifer can transmit water downward. If, instead, there is a clay layer or other less-transmissive layer above the basin aquifers (a "confining layer"), then downward percolation is largely eliminated. Instead, these areas of the aquifer that are below confining layers must receive their recharge by horizontal flow within the aquifer from other areas where confining layers are absent.

In the Goleta Groundwater Basin, confining layers occur in the seaward portion of the basin. One of the areas where there is little or no communication of surface waters and aquifer waters is around the tidal channels that make up much of the seaward portion of the basin – if there was vertical communication between the tidal waters and the aquifers, groundwater would be as salty as the tidal waters. There has been disagreement among researchers as to how far the coastal confining layers extend inland. Upson (1951) considered much of the area south of Cathedral Oaks Blvd to the ocean as having confined conditions. This effectively eliminates much of the area of the basin from recharge by percolation from overlying sources. Upson estimated that an average of about 3,100 acre-feet per year of rainfall and stream infiltration reach the aquifer. In contrast, Evenson and others (1962) considered the confined area to be much smaller, increasing the area for direct recharge from surface sources.

Much of the Central subbasin is likely under confined conditions. For the subbasin to receive recharge from the adjacent North subbasin (which is largely unconfined), the proposed fault(s) that separates the subbasins must be "leaky" – that is, it is only a partial barrier to groundwater flow, allowing some groundwater to flow thorough the fault plane into the Central subbasin.

2.4 Groundwater Elevations

Groundwater elevations have been collected from wells in the Goleta Groundwater Basin since at least the 1940s. These records have now been collected and entered into

digital databases for analysis. GWD also contracted a land survey of all wells used for monitoring groundwater elevations so that both the location and the elevation of the wells are known with some accuracy. Contours of water level elevations from the June 2008 measurements are shown in Figure 2-2. Note that groundwater elevations are lowest in the southeastern portion of the Central subbasin (deeper than 25 feet below sea level) and that the regional groundwater gradient is generally from north to south. This gradient reflects the movement of recharge water from the streams and outcrops on the northern side of the Goleta Groundwater Basin towards the areas where pumping is highest. The groundwater elevations vary by as much as 40 feet across the boundary between the North and Central subbasins (Figure 2-2), suggesting that the boundary is at least a partial barrier to groundwater flow.

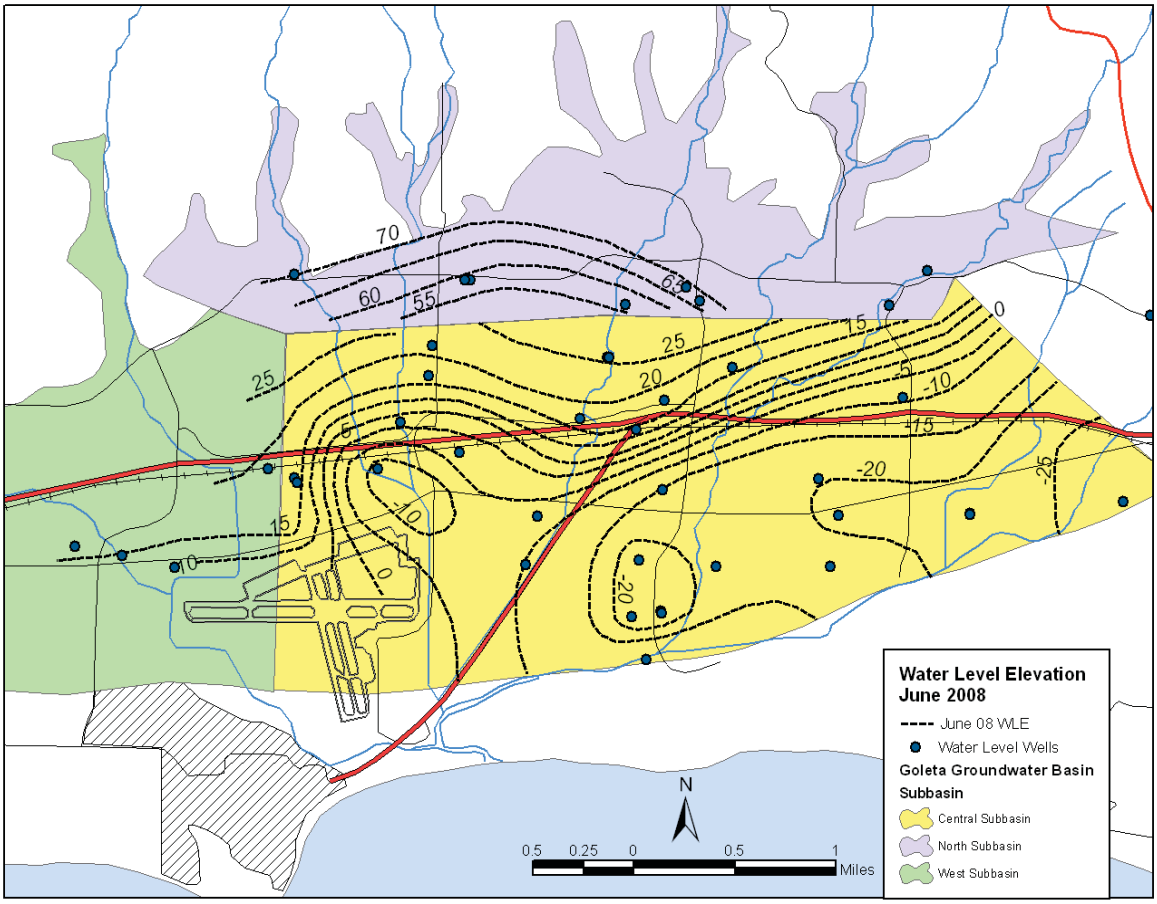

Figure 2-2. Contours of groundwater elevations for June 2008 measurements. Contour interval is 5 feet, datum is mean sea level. Wells which were measured are indicated by a dot on the map.

The analysis of groundwater elevations is subdivided into the three subbasins because each subbasin shows a different historical trend. The locations of the wells used in the hydrograph displays are indicated on Figure 2-3.

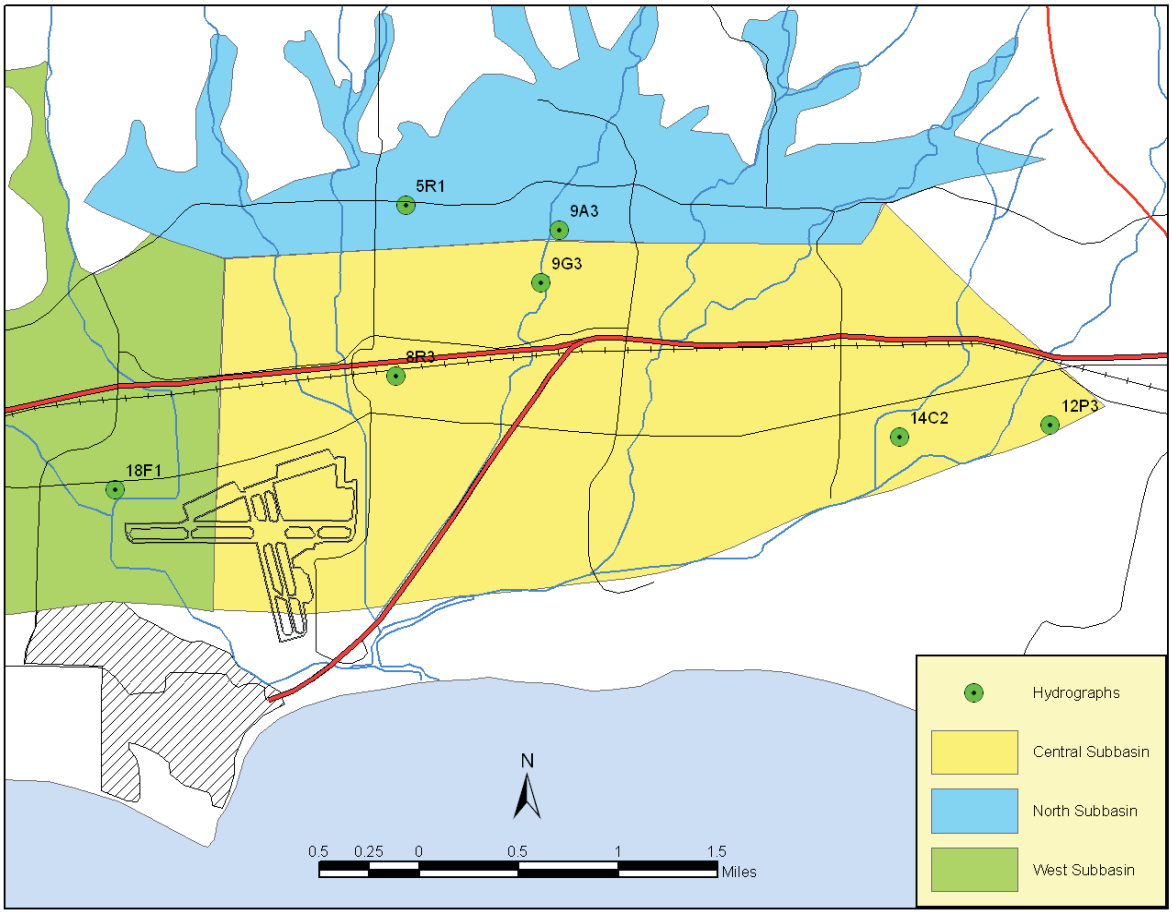

Figure 2-3. Locations of wells for which hydrographs are included in this Plan.

2.4.1 Central Subbasin

Groundwater elevations in the Central subbasin have fluctuated by almost 150 feet over the last 70 years (e.g., Figure 2-5 to Figure 2-9). The wet climatic cycle ending in the 1940s is commonly the high historical groundwater elevation in many coastal basins of California; however, in the Central subbasin, high groundwater elevations in the 1940s were matched in many wells during the early 1970s and at present. Thus, the basin is currently near or above historical high groundwater conditions.

When groundwater basins are being pumped within the yield of the basin and the primary sources of recharge to the basin are rainfall and subsequent runoff (as is the case in the Goleta Groundwater Basin), hydrographs in a basin commonly reflect the local climatic patterns. These climatic patterns can be represented by a cumulative departure curve such as shown in Figure 2-4, where the dropping slope of the line indicates periods of less rainfall and the rising slope indicates periods of abundant rainfall. For Goleta, the lowest cumulative departure occurred in the late 1960s and early 1970s.

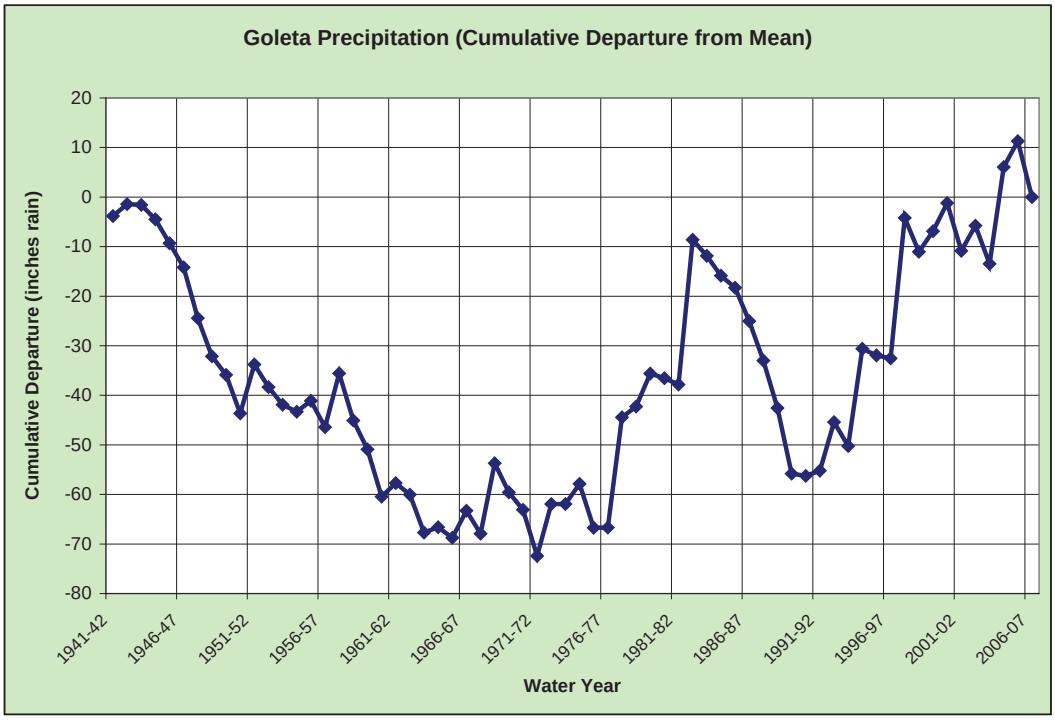

Figure 2-4. Rainfall at Goleta Fire Station #14 (Los Carneros Rd between Calle Real and Cathedral Oaks), cumulative departure from mean. Portions of the curve that are going down with time indicate periods of below-normal rainfall, whereas portions of the curve that are going up indicate periods of above-normal rainfall.

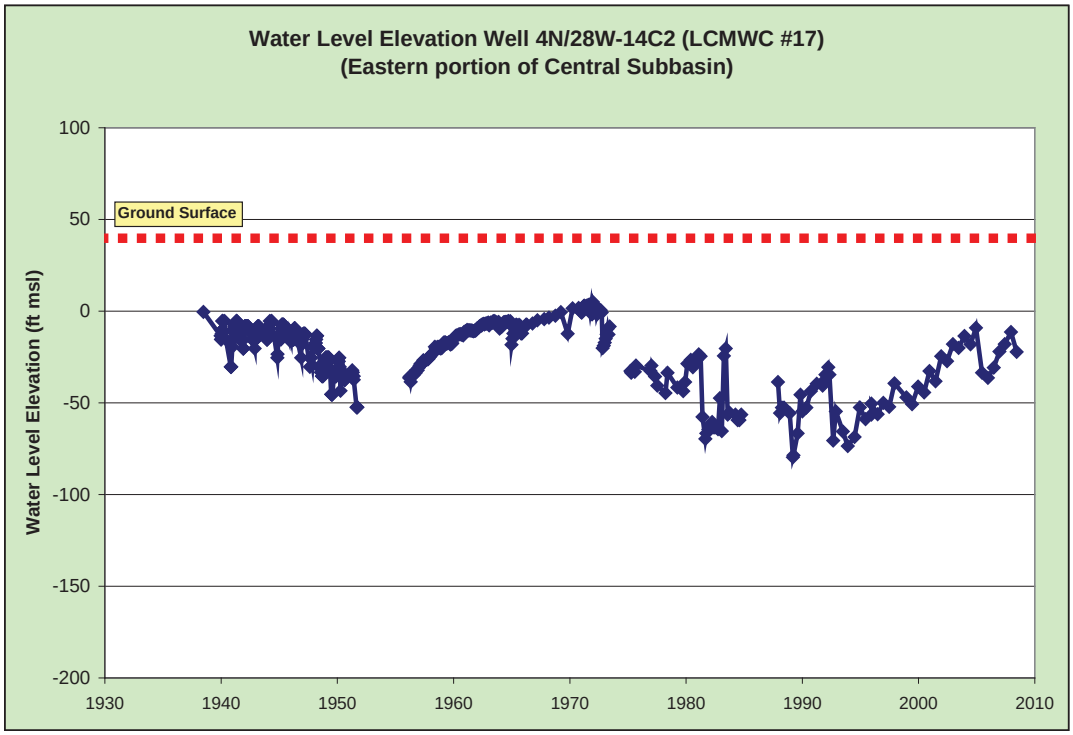

Figure 2-5. Hydrograph of well 14C2 in the eastern portion of the Central subbasin.

However, hydrographs for the Central subbasin do not track this pattern. In Figure 2-6, the cumulative departure curve is superimposed on the hydrograph for well 14C2. As indicated, the water level elevations tracked the cumulative departure into the late 1950s, but then diverged. During the late 1950s to the early 1970s, groundwater elevations were rising during drier than normal conditions. However, as rainfall increased during the 1970s to 1983, groundwater elevations dropped during that time. The climatic trend and the groundwater trend are then synchronous again for the remaining 25 years. This pattern generally suggests that the Central subbasin was pumped less than its yield before 1972, above its yield in the 1970s and early 1980s, and within its yield since that time.

Although groundwater elevations are near historical high in the Central subbasin, they are well below land surface elevation and below sea level. Groundwater elevations below sea level in coastal basins that abut the ocean are always a concern because of the potential for seawater intrusion into the aquifer. Unfortunately, there are examples of seawater intrusion caused by low groundwater elevations in Orange, Los Angeles, Ventura, San Luis Obispo, and Monterey counties. As discussed in section 2.1 - *Basin Boundaries*, the More Ranch Fault apparently provides protection from seawater intrusion by uplifting a block of older material across what could be a pathway for seawater to move inland in the aquifer. This is not unprecedented in coastal basins – the Newport-Inglewood Fault provides similar protection along the Orange and Los Angeles counties' coastline, except in areas where buried canyons cut through the older sediments in the uplifted fault block.

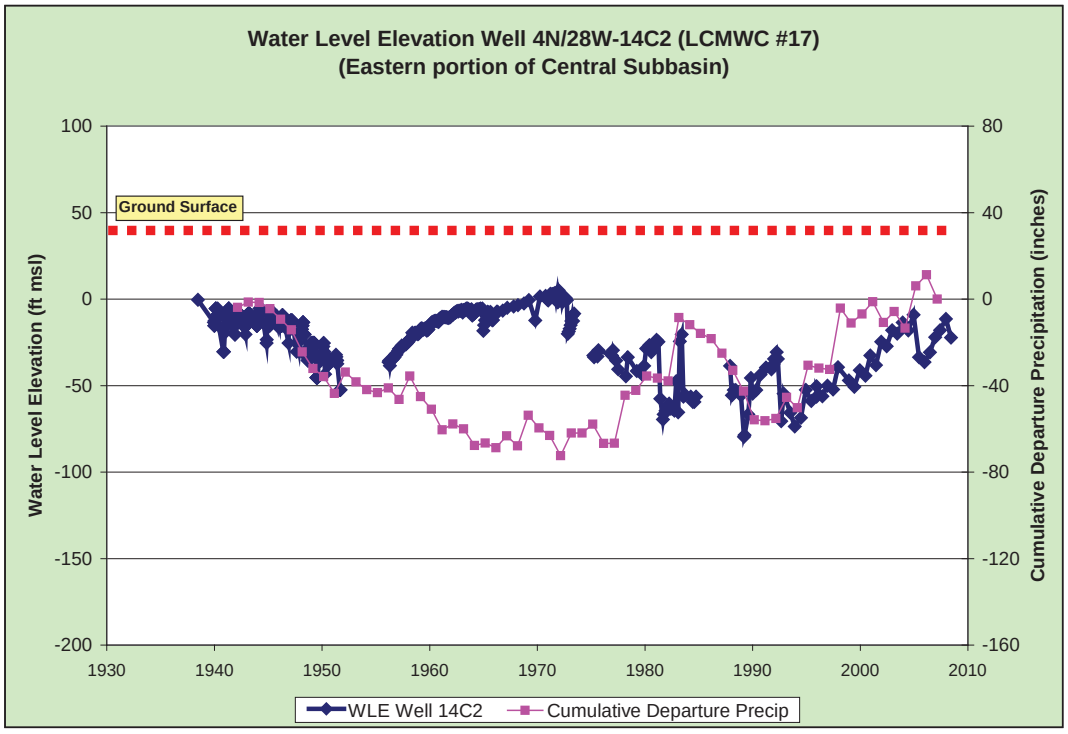

Figure 2-6. Same as Figure 2-5, except cumulative departure for rainfall from Figure 2-4 is superimposed on hydrograph.

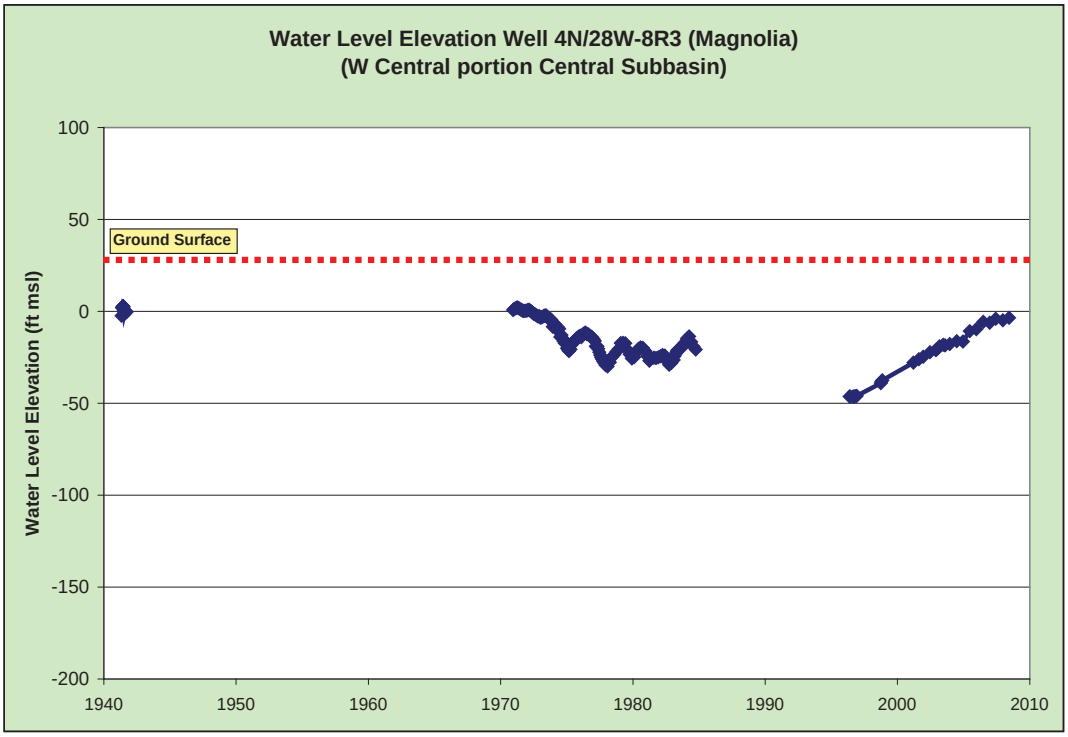

Figure 2-7. Hydrograph of well 8R3 in the western portion of the Central subbasin.

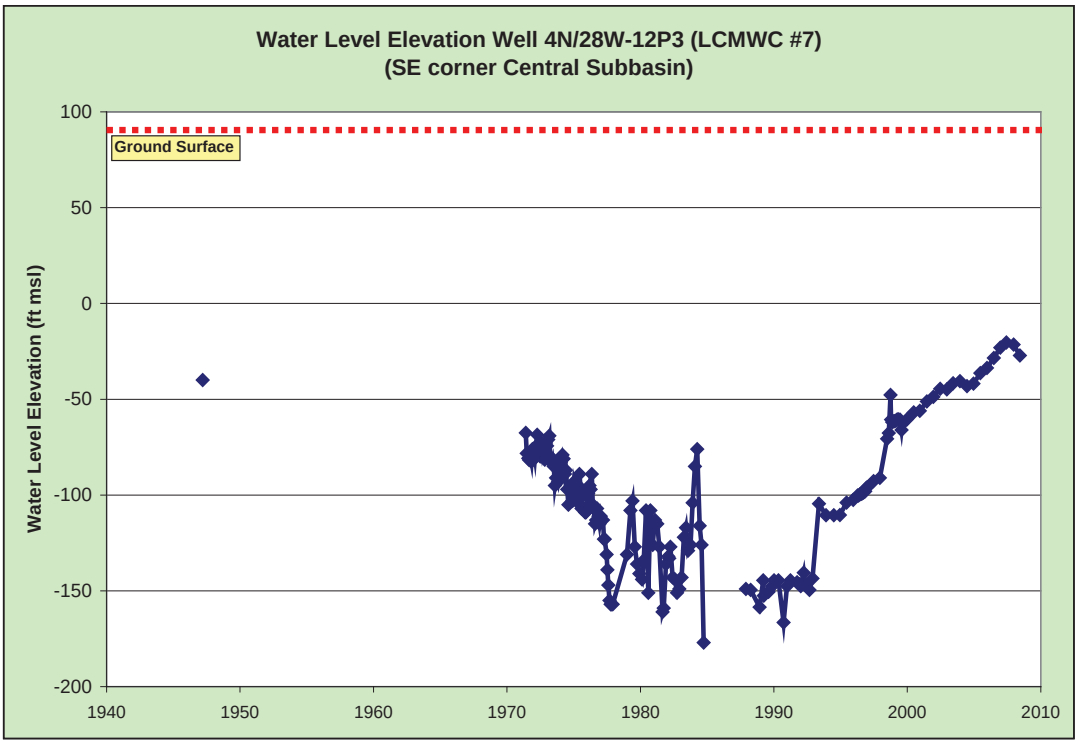

Figure 2-8. Hydrograph of well 12P3 in far southeastern corner of Central subbasin.

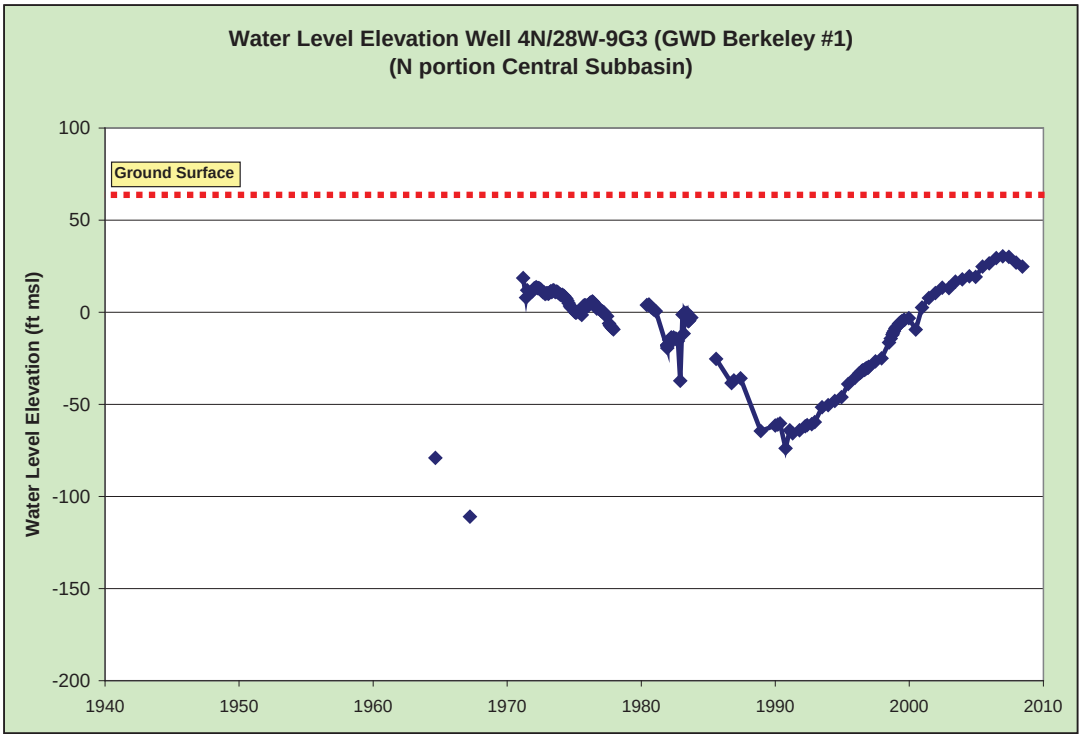

Figure 2-9. Hydrograph of well 9G3 in northern portion of Central subbasin.

2.4.2 North Subbasin

Groundwater elevations have generally fluctuated within a narrower range in the North subbasin than in the Central subbasin (Figure 2-10 and Figure 2-11). The overall trend in groundwater elevations is similar to the Central subbasin, with groundwater highs in the 1970s and today and a groundwater low in the early 1990s. Groundwater elevations are generally above sea level and have approached land surface in some wells.

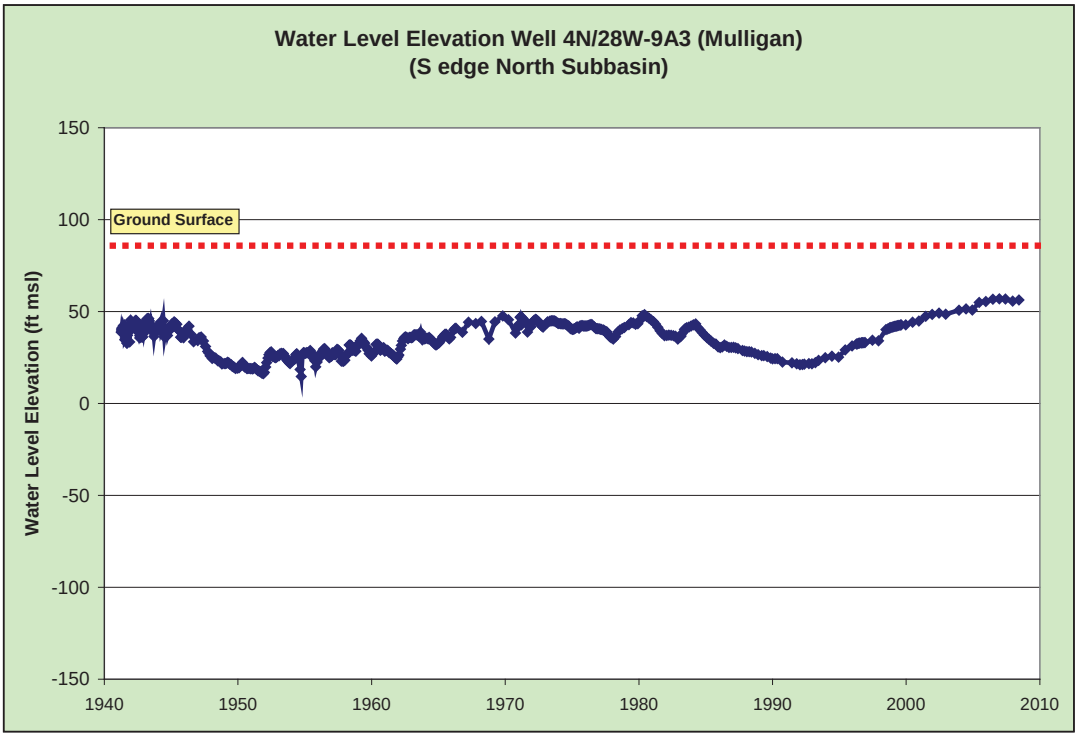

Figure 2-10. Hydrograph of well 9A3 along the southern edge of the North subbasin.

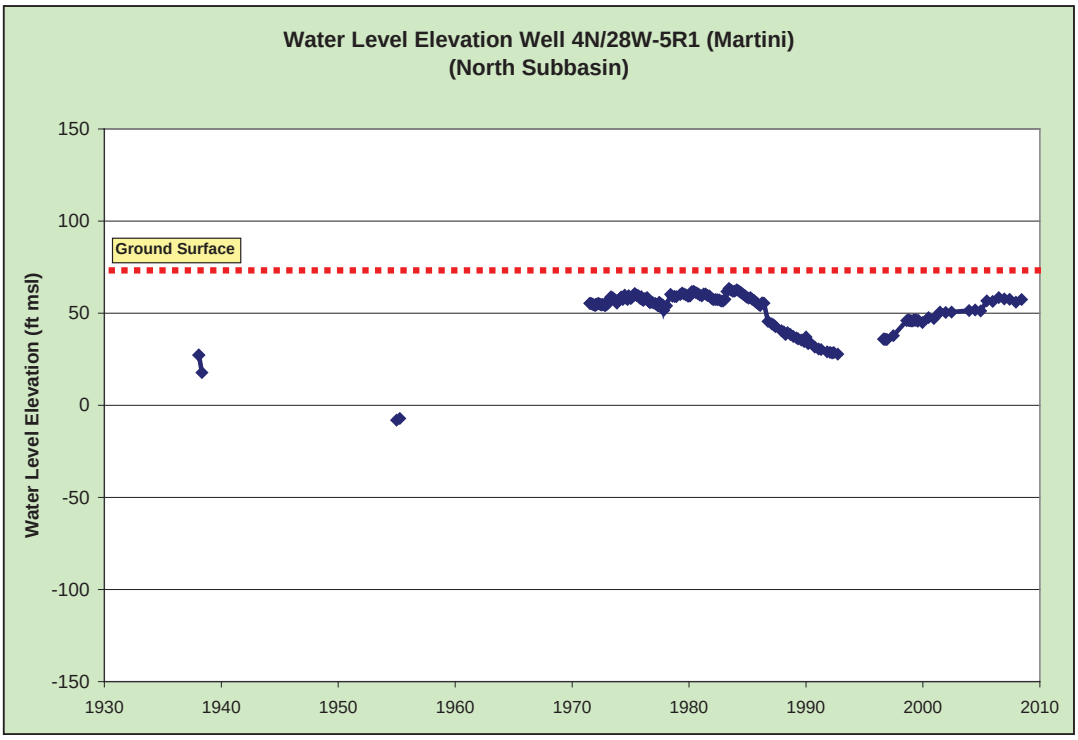

Figure 2-11. Hydrograph of well 5R1 in the North subbasin.

2.4.3 West Subbasin

Although groundwater elevations in historical records have dropped below ground surface, groundwater elevations today are very near the surface (e.g., Figure 2-12). When groundwater elevations are this high, they can create springs and boggy areas, as well as causing problems to the foundations of buildings. CH2MHill (2009a) reported local problems caused by the high groundwater elevations. It is likely that the current high groundwater elevations were the natural condition in the West subbasin, but may not be appropriate in a managed basin.

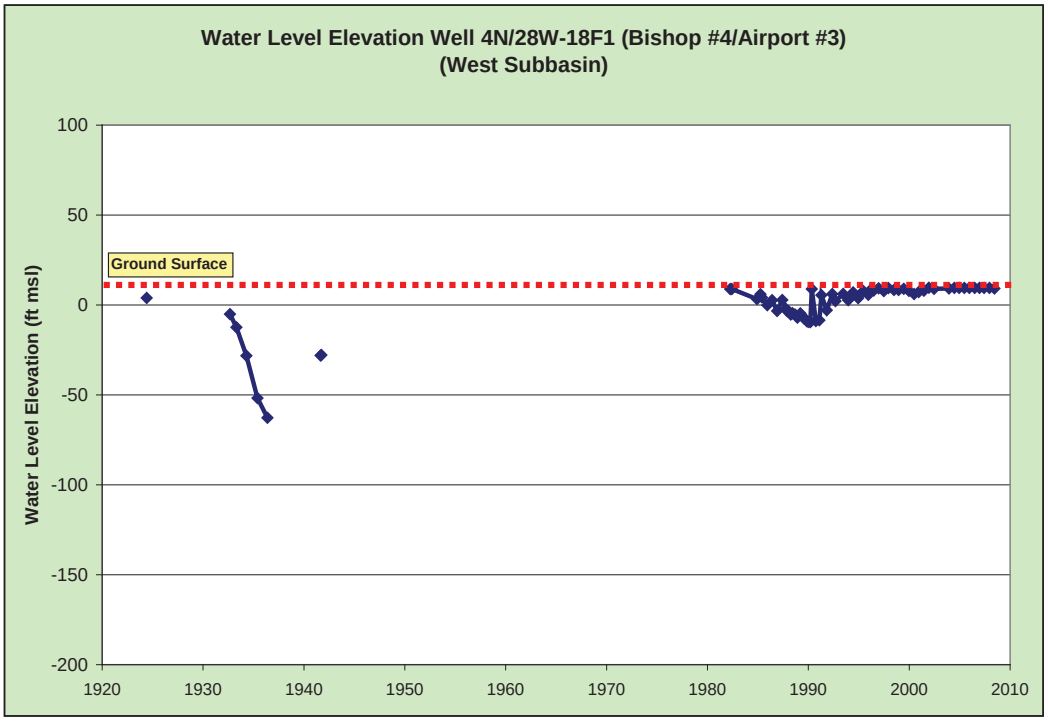

Figure 2-12. Hydrograph of well 18F1 in West subbasin.

3 Groundwater Quality and Pumping

3.1 Groundwater Quality

Groundwater quality considerations in basin management generally involve several aspects of water quality: 1) existing poor-quality water in parts of the basin that must be prevented from spreading across the basin (e.g., areas of saline water or high nitrates), 2) potential degradation of basin water by poor-quality water being pulled in from areas outside the aquifers (e.g., intrusion of seawater or high salts being pulled from surrounding sediments), and 3) overlying sources of contamination that could leak into the aquifers (e.g., leaking underground tanks). The Goleta Groundwater Basin has aspects of all three of these considerations.

Groundwater in the Goleta Groundwater Basin is of a calcium bicarbonate nature (DWR, 2009). Water quality is similar in nature to other coastal groundwater basins, where groundwater commonly flows through geologically-young marine sediments and becomes relatively mineralized. Chloride is an issue in some of the coastal basins, especially when there is a connection with the ocean and seawater intrusion can occur.

3.1.1 Historical Groundwater Quality

In early reports, water quality was considered fair in the Central subbasin, although chloride concentrations were somewhat elevated in portions of the West and North subbasins (up to about 200 mg/L) (Upson, 1951). Although below the drinking water standard, irrigation water with chloride at that concentration can harm salt-sensitive crops.

During the historical period 1980 to 2000 for which there are significant data on groundwater quality, chloride concentrations in the Central subbasin were generally less than the approximate 150 mg/L level that could affect salt-sensitive crops and well below the drinking water standard of 500 mg/L (Figure 3-1). However, portions of the North and West subbasins had chloride concentrations above the drinking water standard. Historical nitrate levels were significantly below the drinking water standard except in three wells (Figure 3-2); this is surprising, given the rural agricultural heritage of the basin (agricultural fertilizers, concentrations of ranch animals, and septic systems are the largest sources of nitrate in many basins). Both sulfate and total dissolved solids (TDS) were above the secondary drinking water standards in many wells in the North and West subbasins (Figure 3-3, Figure 3-4).

Iron and manganese have historically been a problem in the basin, with most wells in all subbasins having a maximum recorded concentration above the secondary drinking water standards (Figure 3-5, Figure 3-6).

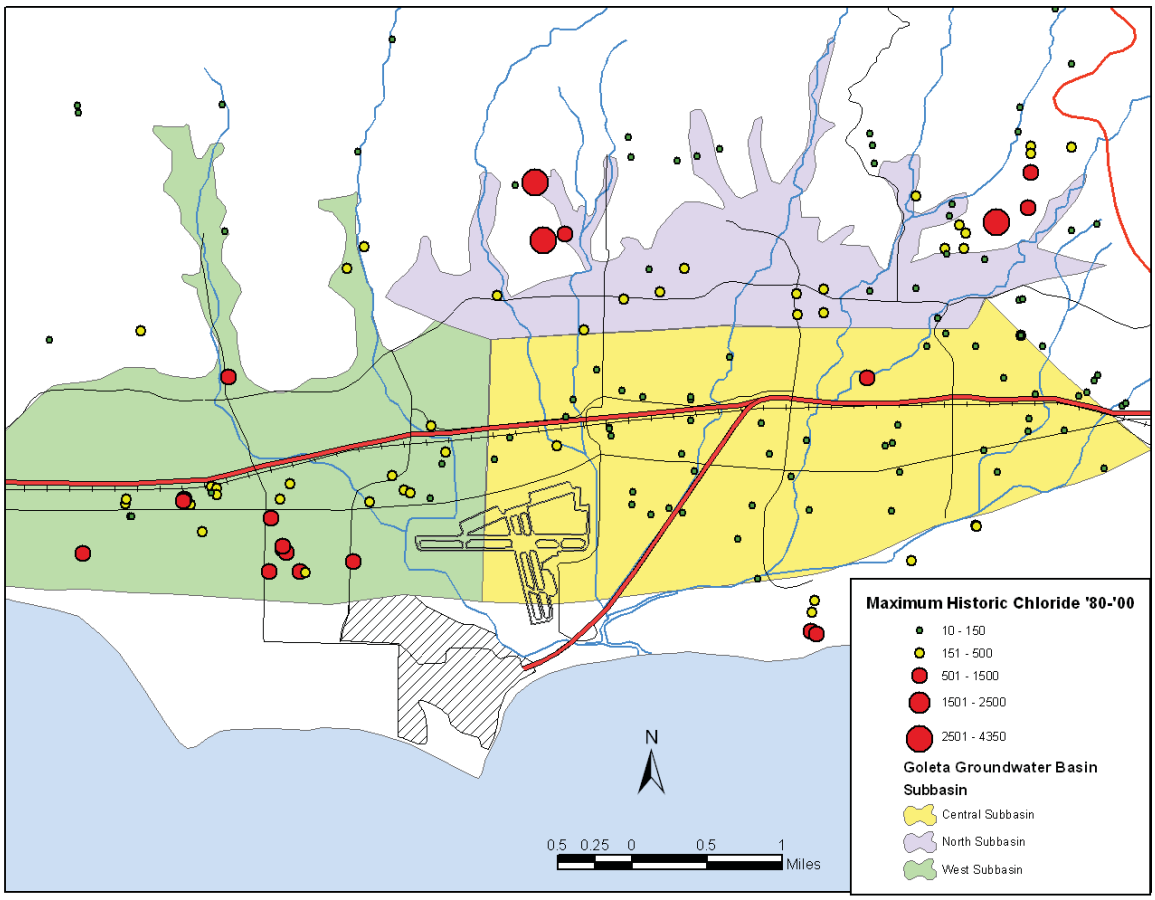

Figure 3-1. Maximum historic chloride concentrations in wells from 1980 to 2000. Concentrations are in mg/L. 500 mg/L is the secondary drinking water standard for chloride; crop damage may occur in salt-sensitive crops when irrigation water is above about 150 mg/L.

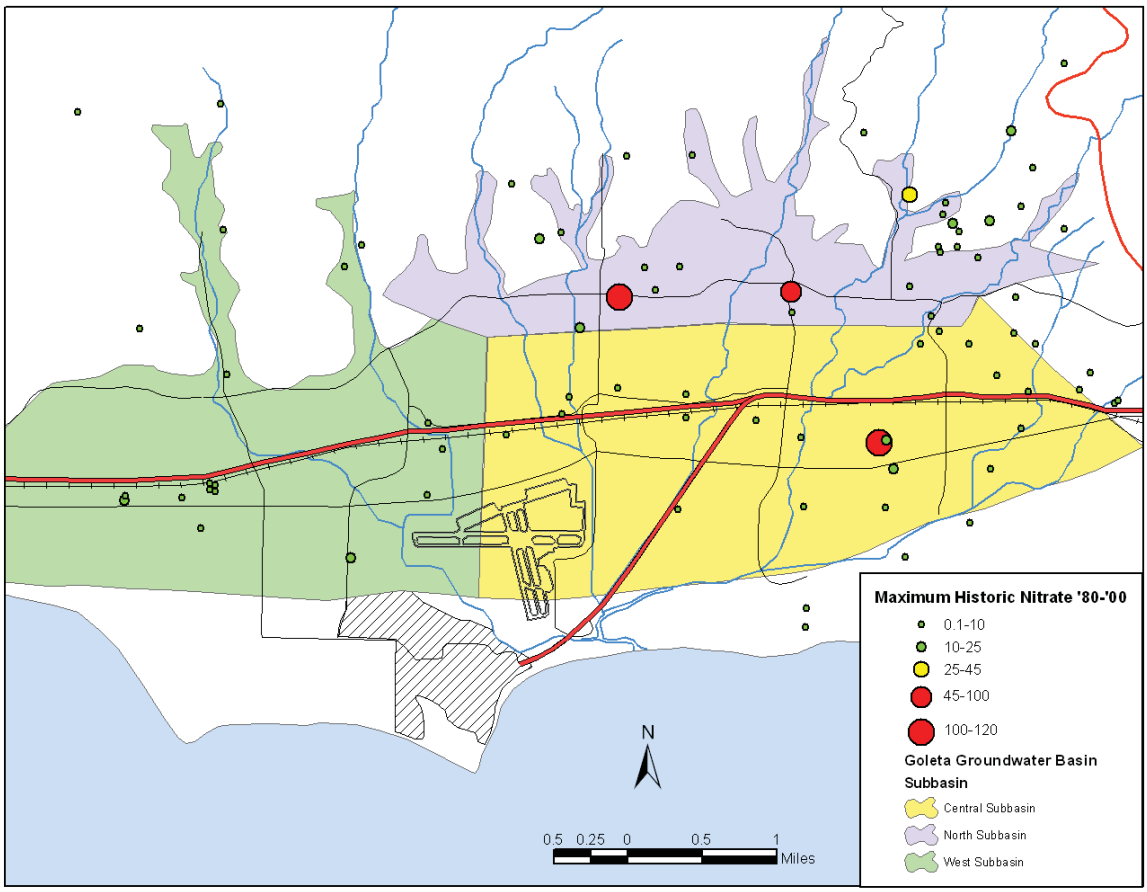

Figure 3-2. Maximum historic nitrate concentrations in wells from 1980 to 2000. Concentrations are in mg/L of NO_3. 45 mg/L of nitrate as NO_3 is a primary drinking water standard.

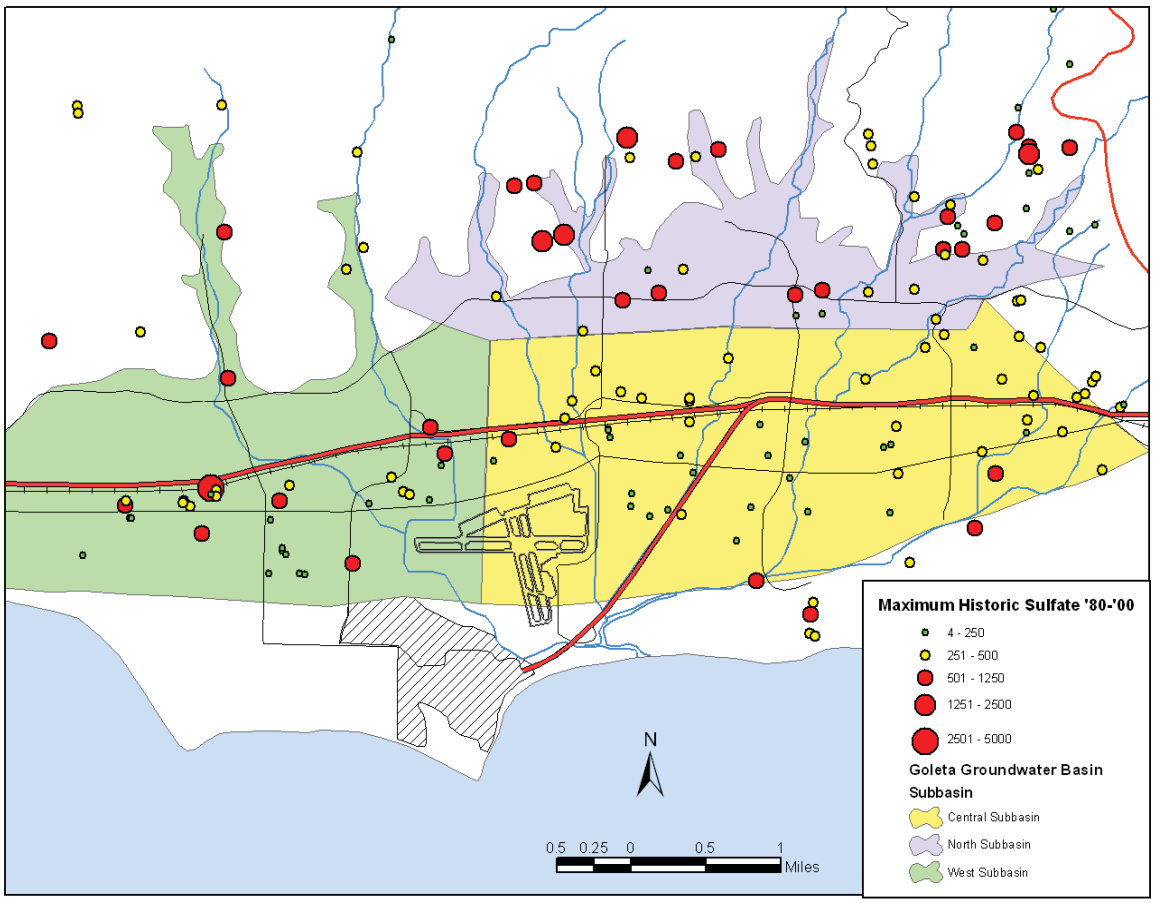

Figure 3-3. Maximum historic sulfate concentrations in wells from 1980 to 2000. Concentrations are in mg/L. 500 mg/L is the secondary drinking water standard for sulfate.

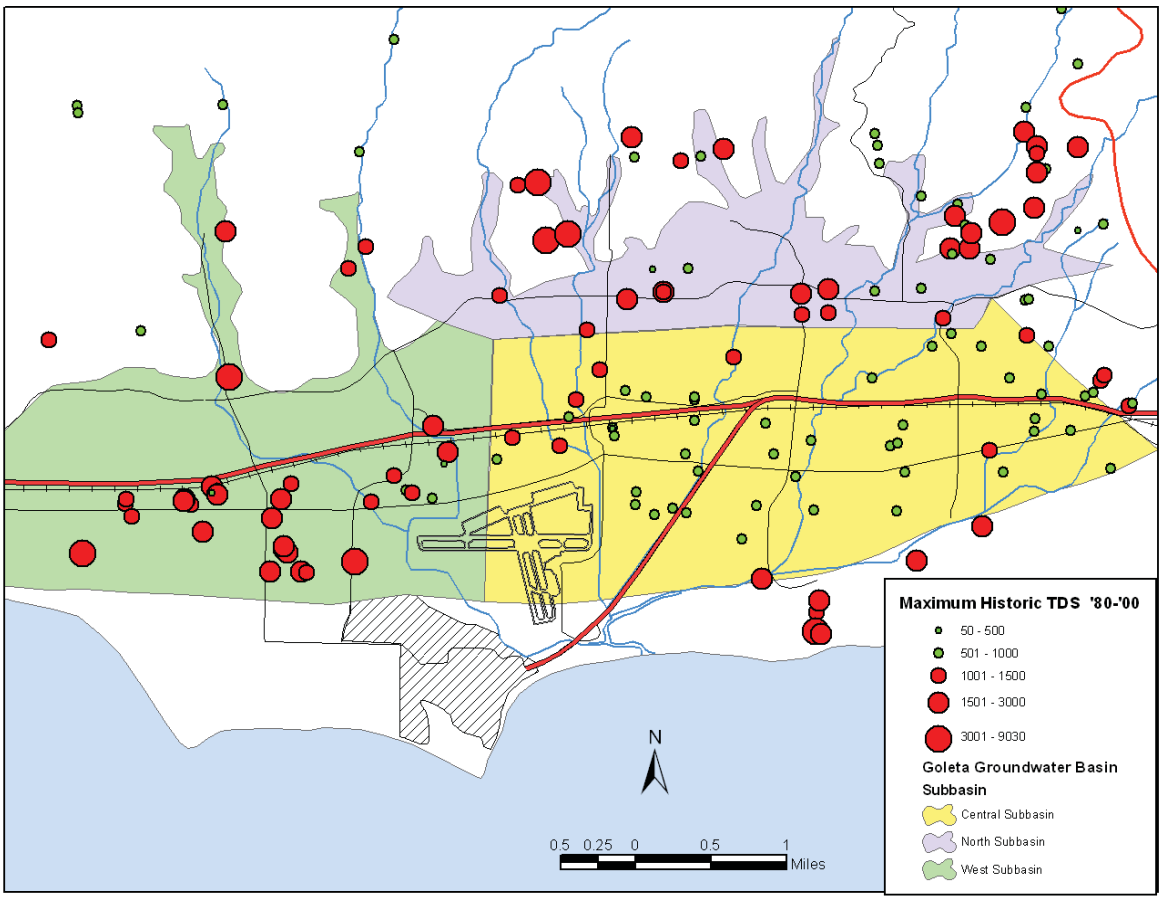

Figure 3-4. Maximum historic total dissolved solids (TDS) concentrations in wells from 1980 to 2000. Concentrations are in mg/L. 1000 mg/L is the secondary drinking water standard for TDS.

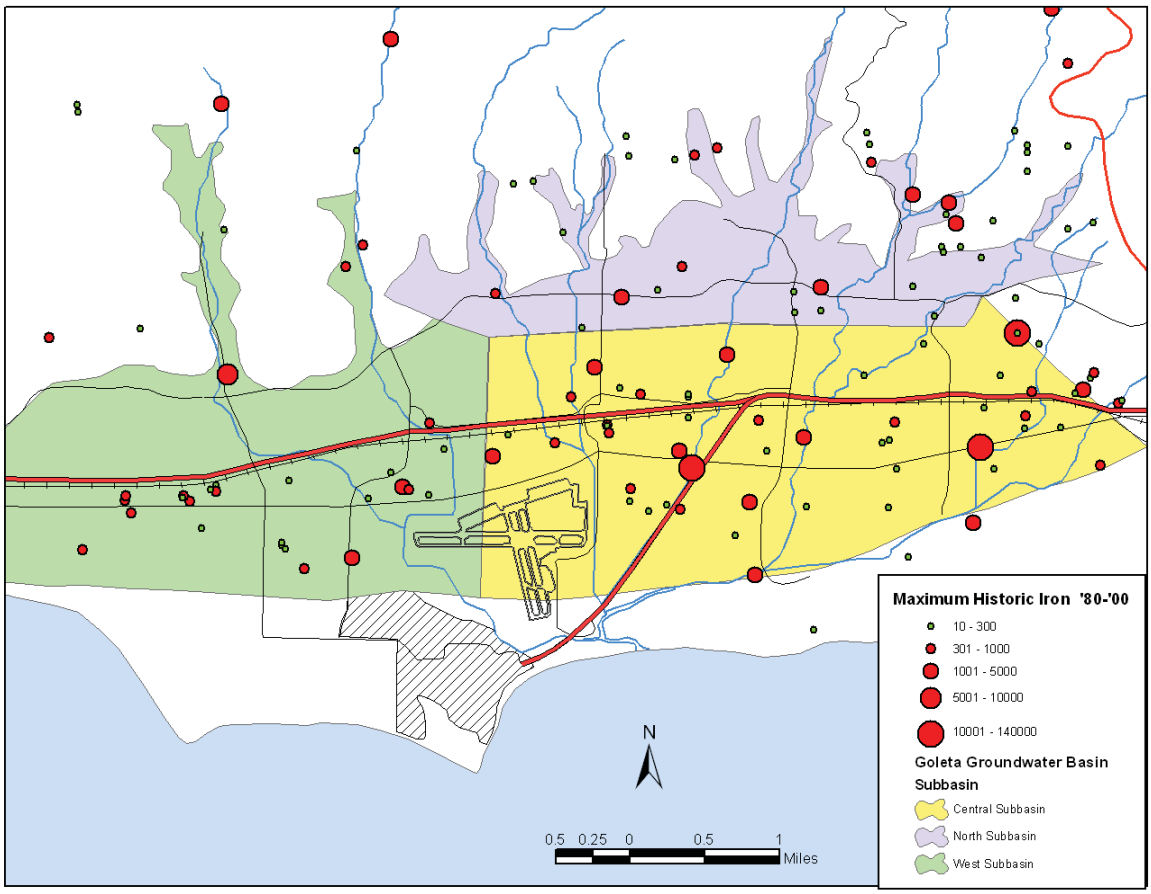

Figure 3-5. Maximum historic iron concentrations in wells from 1980 to 2000. Concentrations are in µg/L. 300 µg/L is the secondary drinking water standard for iron.

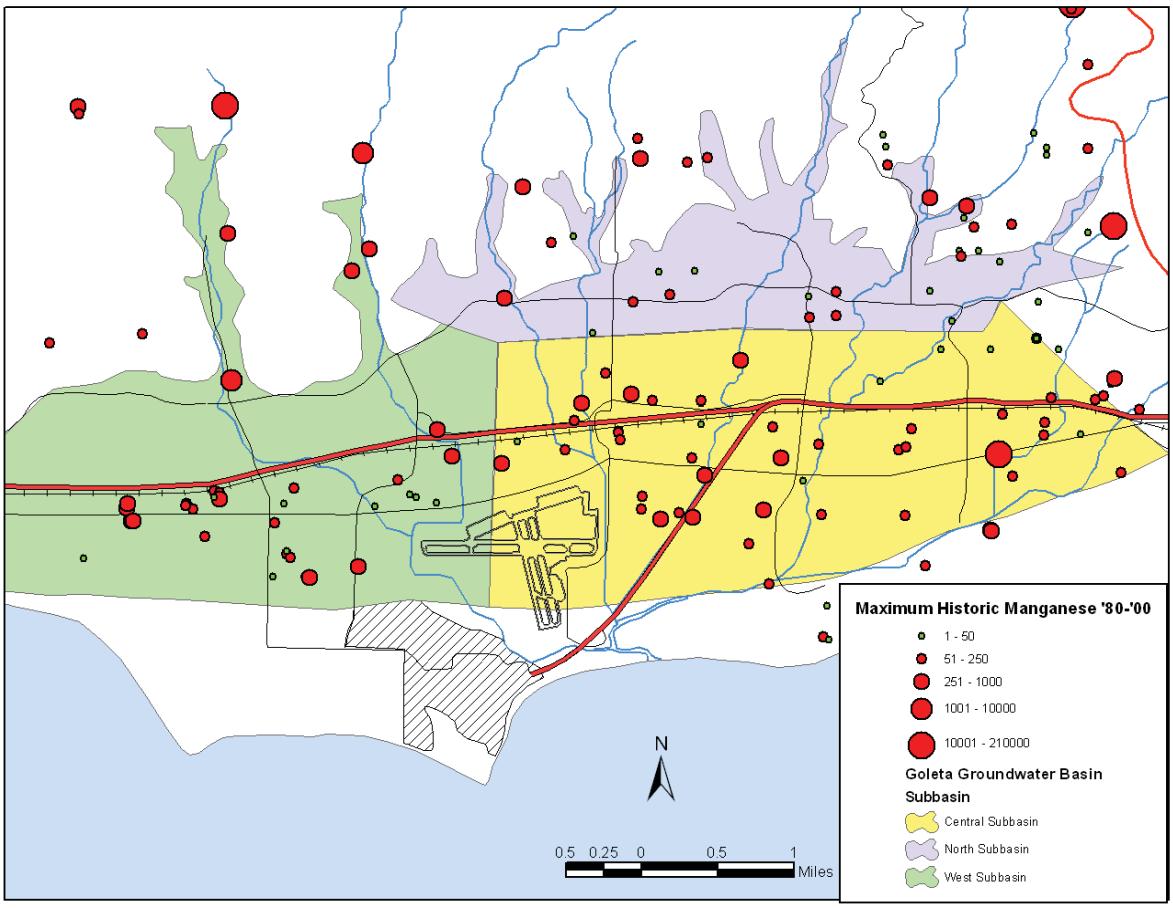

Figure 3-6. Maximum historic manganese concentrations in wells from 1980 to 2000. Concentrations are in µg/L. 50 µg/L is the secondary drinking water standard for manganese.

3.1.2 Current Groundwater Quality

A series of maps of concentrations of key chemicals are included as Figure 3-7 to Figure 3-12. None of the reporting wells had chloride concentrations above the drinking water standard during the last decade (Figure 3-7). However, the chloride concentration in an industrial well in the southern portion of the Central subbasin was 370 mg/L in 2007. The well was above the secondary (taste and odor) drinking water standard (Maximum Contaminant Level or "MCL") for Total Dissolved Solids (TDS). Iron and manganese continue to be a problem that can require treatment of drinking water before it is served to customers – most of the groundwater in the Central subbasin has concentrations of these two constituents that are above the secondary drinking water standard (Figure 3-11 and Figure 3-12).

Trends in water quality over the last two decades are illustrated in Figure 3-13 to Figure 3-19. Chloride concentrations in the Central subbasin generally reached their maximum in the late 1980s and early 1990s, decreasing after that time (Figure 3-14). This period of poorer groundwater quality coincides with the period of heaviest pumping from the basin (Figure 3-21), a correlation that needs to be considered in basin

management schemes. Injection of lower-chloride Cachuma spill water may also have contributed to better-quality groundwater near La Cumbre's wells.

There are a number of spills and leaks of contaminants at the ground surface overlying the Goleta Groundwater Basin (Figure 3-20). The spilled or leaked contaminants range from gasoline (the most common) to dry cleaning fluid. The agency responsible for enforcing the cleanup of most of these sites is the State Water Resources Control Board, through the local Regional Water Quality Control Board. The Regional Board tracks each of these sites, approves remediation plans, and eventually determines when the site is remediated and the case is closed. For the roughly 175 sites in this Goleta-Santa Barbara area, their current status is:

- 50% have been remediated and the case is closed;
- 20% are currently being remediated;
- 25% are currently being assessed for possible remediation; and
- 5% are currently being monitored for verification of contamination.

These spills and leaks are only a potential problem to the aquifers in areas of the basin where there are no confining layers that separate the aquifers from the surface soils – the danger is in the recharge areas to the basin where contaminants may move freely from the ground surface to the aquifer. These recharge areas, which are discussed in the earlier section 2.3-*Sources of Recharge,* are generally in the foothills to the north of the majority of the spills. Periodically reviewing the status of contamination sites near public water supply wells is a recommendation discussed in section 5-*Recommended Future Strategies*.

The interface between overall groundwater management and remediation of contaminated sites occurs when regional groundwater gradients affect remediation of a site. This may especially be true in the West subbasin, where very high groundwater elevations and lack of significant water-supply pumping may hamper site remediation efforts.

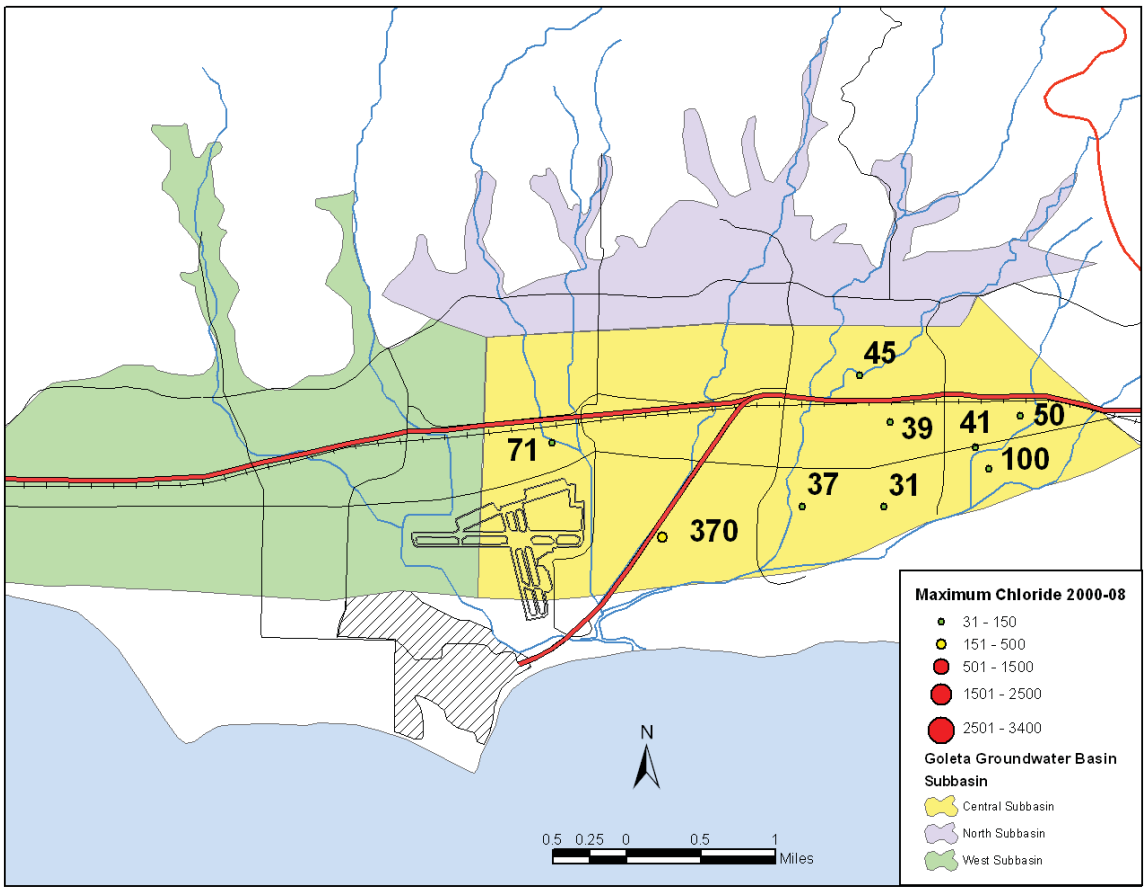

Figure 3-7. Maximum chloride concentrations reported to DPH from wells during the 2000s. Concentrations are in mg/L. 500 mg/L is the secondary drinking water standard for chloride.

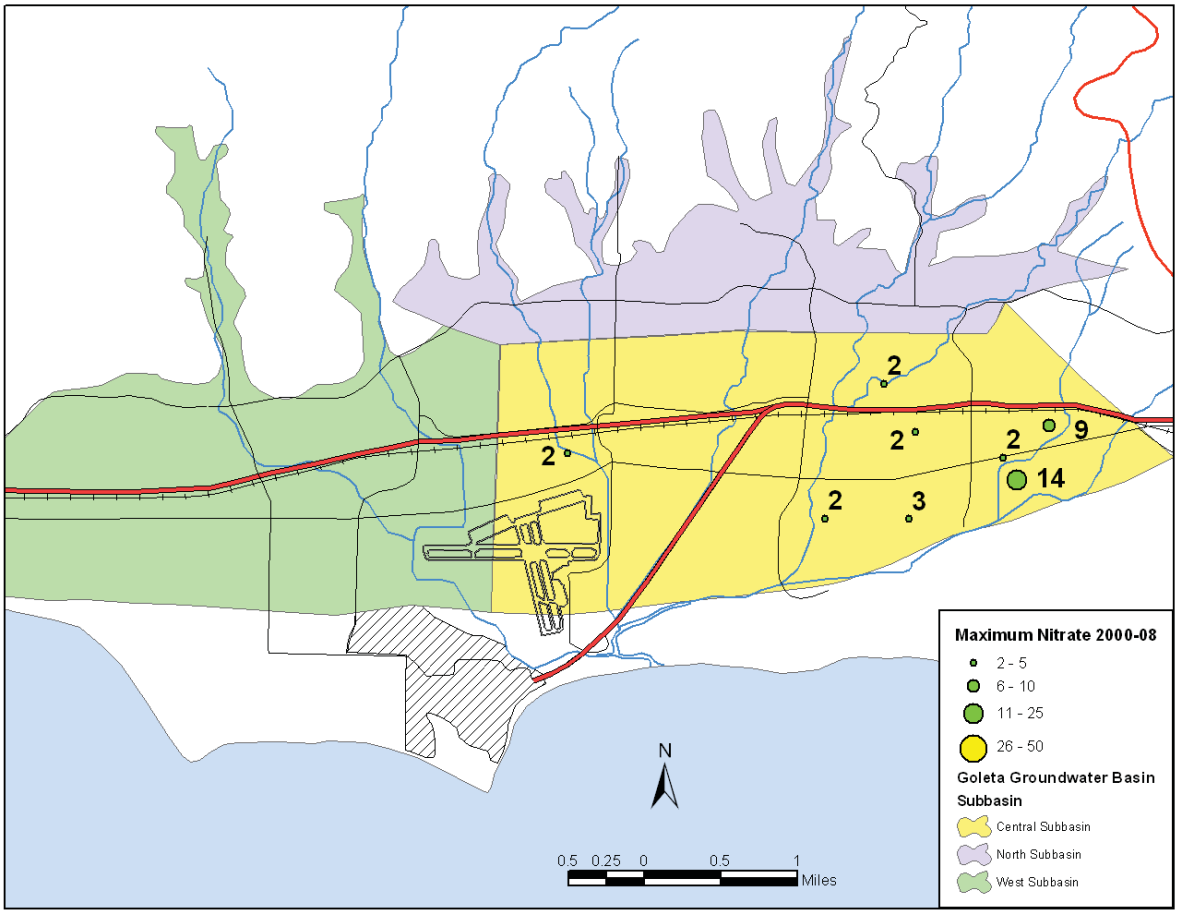

Figure 3-8. Maximum nitrate concentrations reported to DPH from wells during the 2000s. Concentrations are in mg/L of NO_3. 45 mg/L of nitrate as NO_3 is a primary drinking water standard.

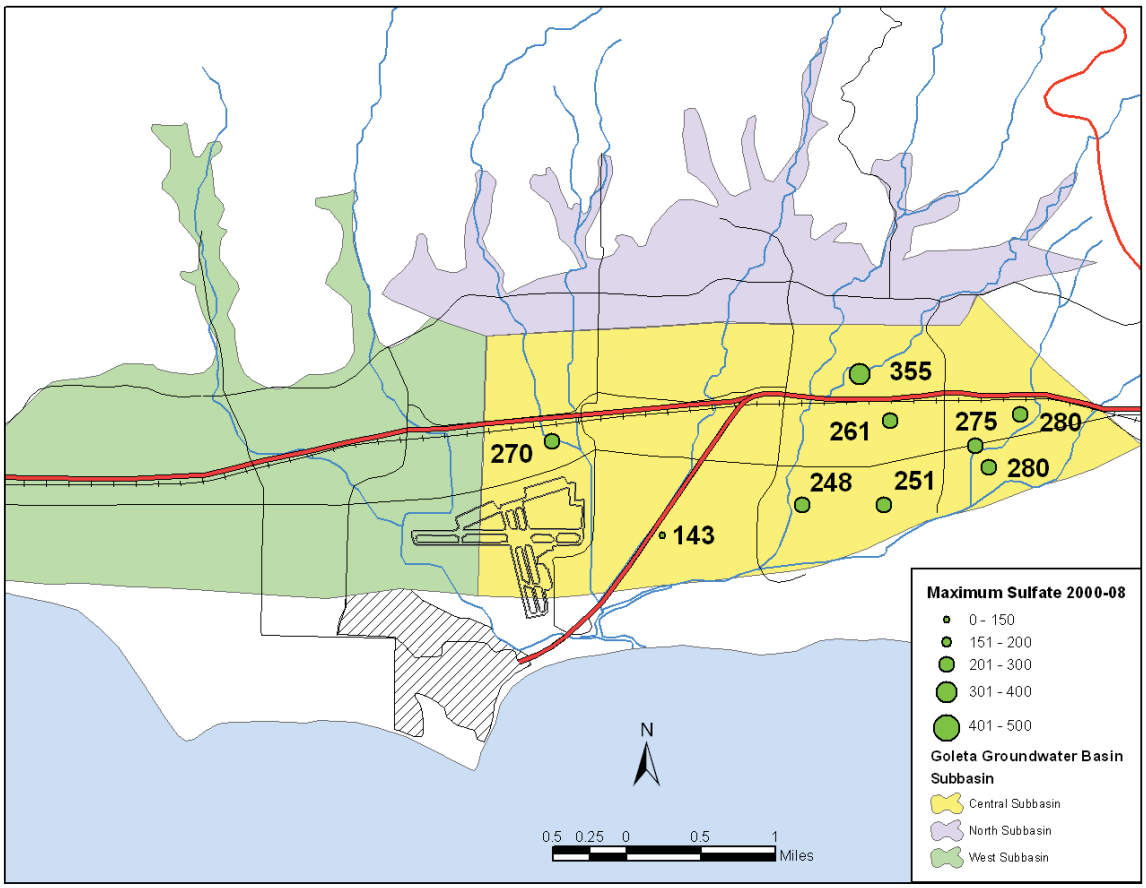

Figure 3-9. Maximum sulfate concentrations reported to DPH from wells during the 2000s. Concentrations are in mg/L. 500 mg/L is the secondary drinking water standard for sulfate.

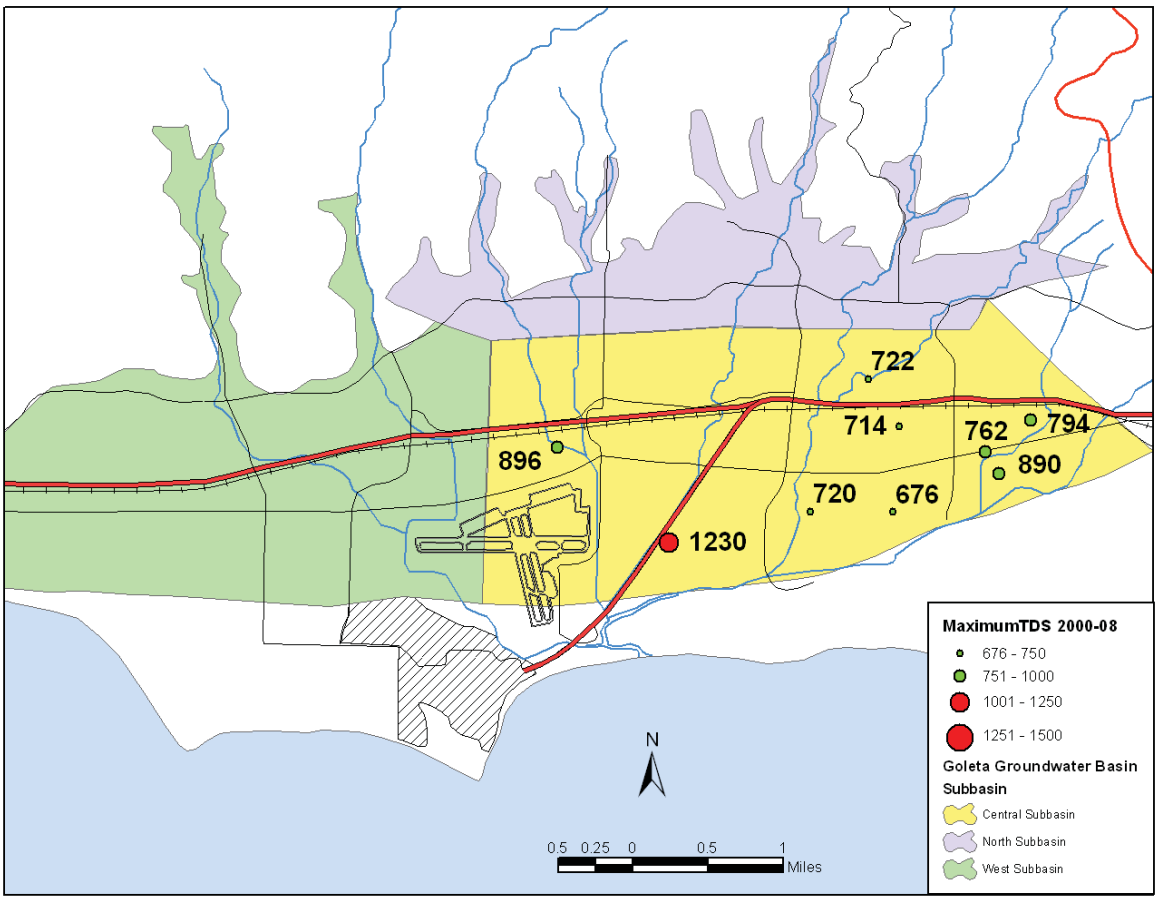

Figure 3-10. Maximum total dissolved solids (TDS) concentrations reported to DPH from wells during the 2000s. Concentrations are in mg/L. 1000 mg/L is the secondary drinking water standard for TDS.

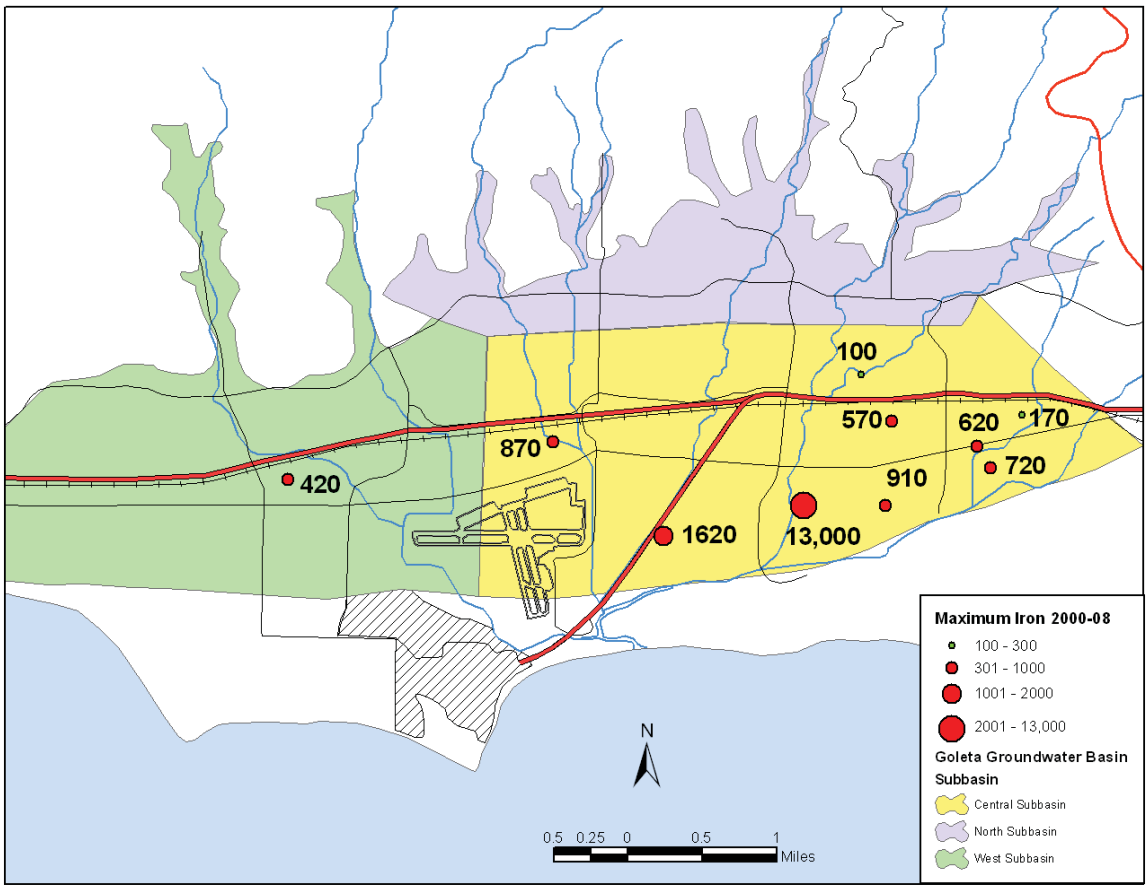

Figure 3-11. Maximum iron concentrations reported to DPH from wells during the 2000s. Concentrations are in µg/L. 300 µg/L is the secondary drinking water standard for iron.

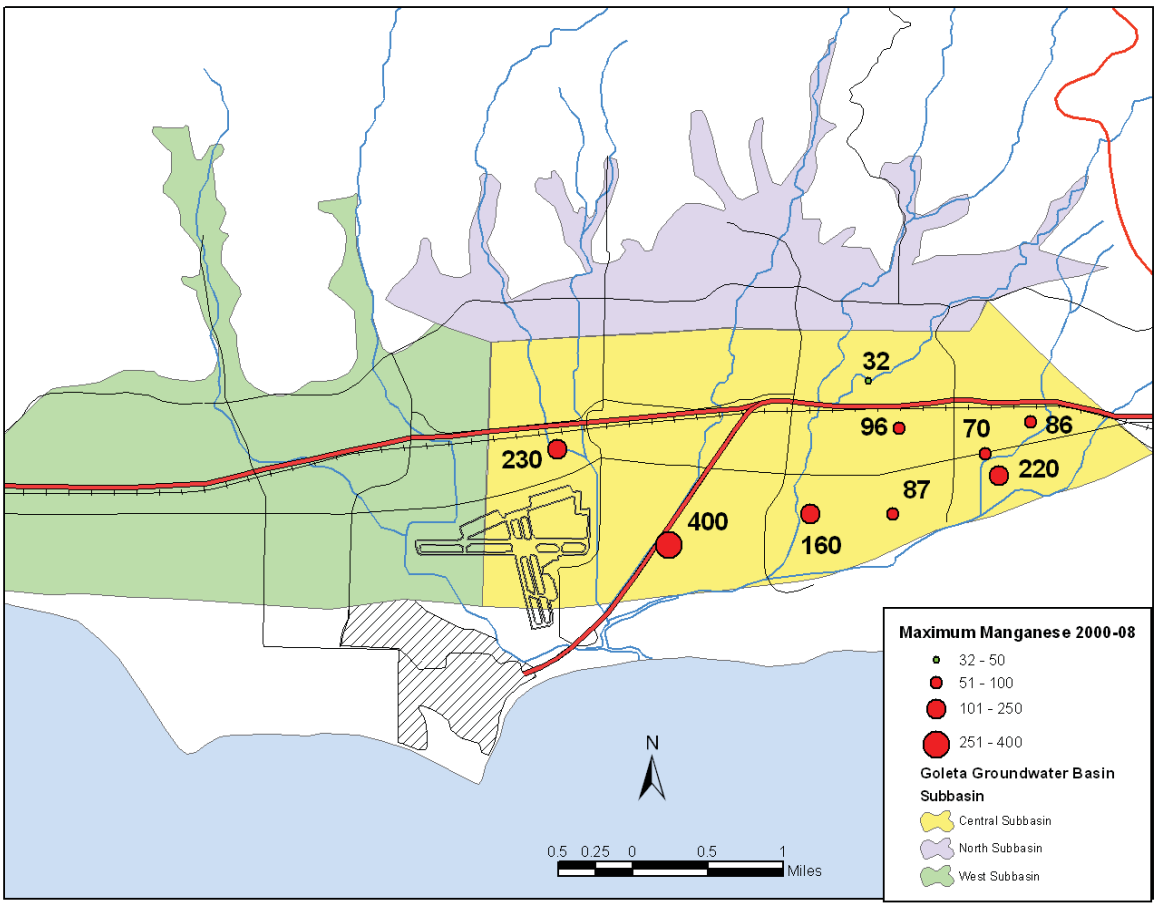

Figure 3-12. Maximum manganese concentrations reported to DPH from wells during the 2000s. Concentrations are in µg/L. 50 µg/L is the secondary drinking water standard for manganese.

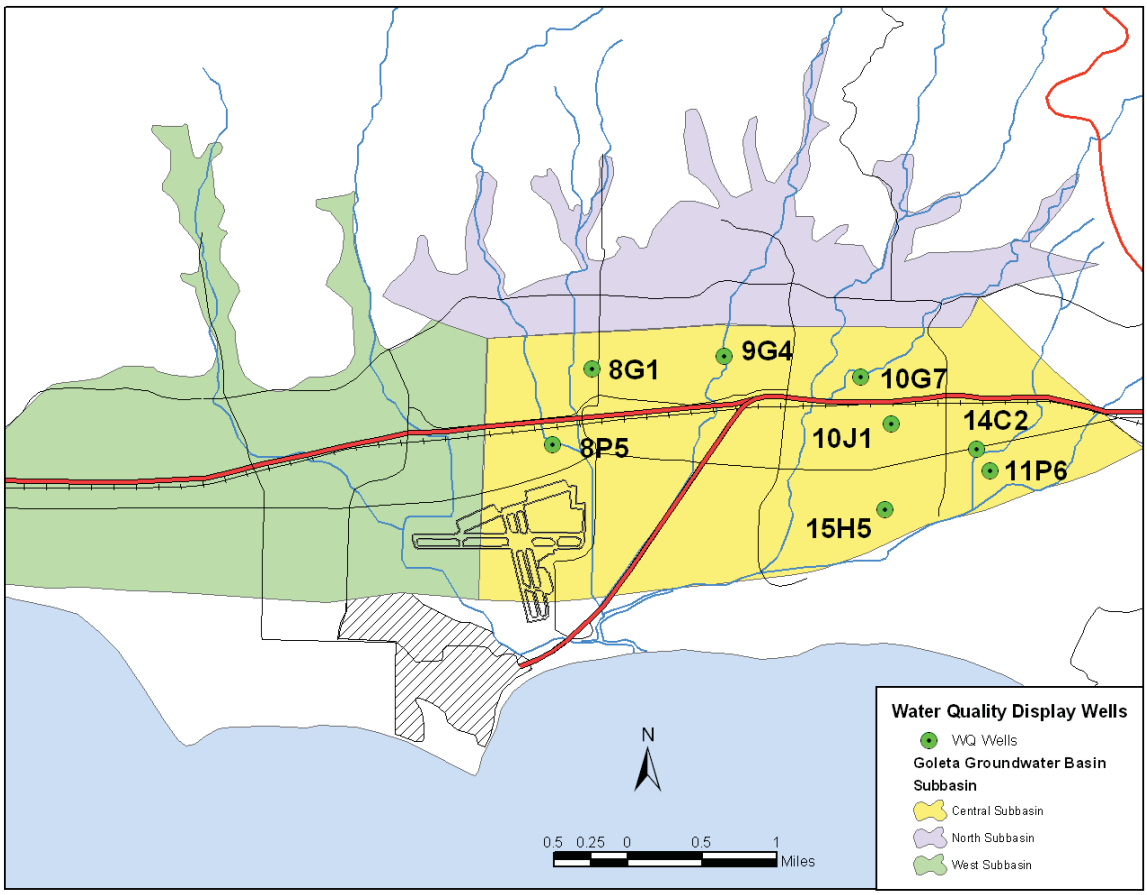

Figure 3-13. Location of wells used in water quality charts.

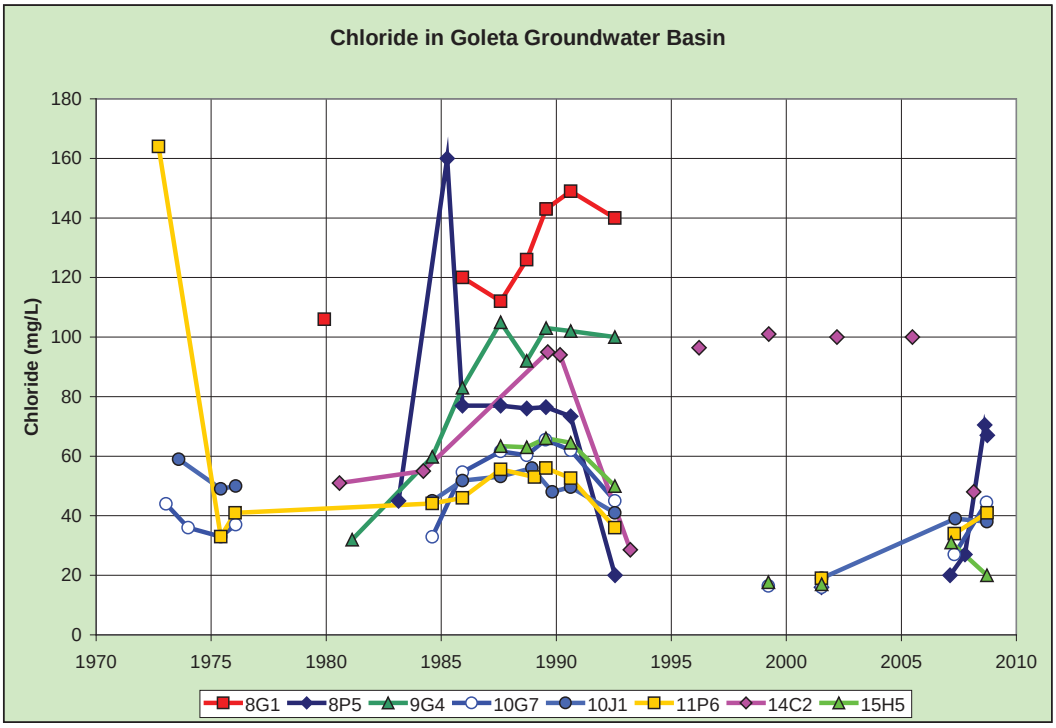

Figure 3-14. Chloride in selected wells in Goleta Groundwater Basin. 500 mg/L chloride is a secondary drinking water standard. Agricultural suitability is the primary factor in setting the BMO at 150 mg/L (see section 4.1-*Basin Management Objectives*). Wells located on Figure 3-13. Names of wells: 8G1=GWD "Sherrill", 8P5=GWD "Airport", 9G4=GWD "Berkeley #2", 10G7=GWD "University", 10J1=GWD "El Camino", 11P6=GWD "San Marcos", 14C2=La Cumbre MWC #17, 15H5=GWD "Anita #2".

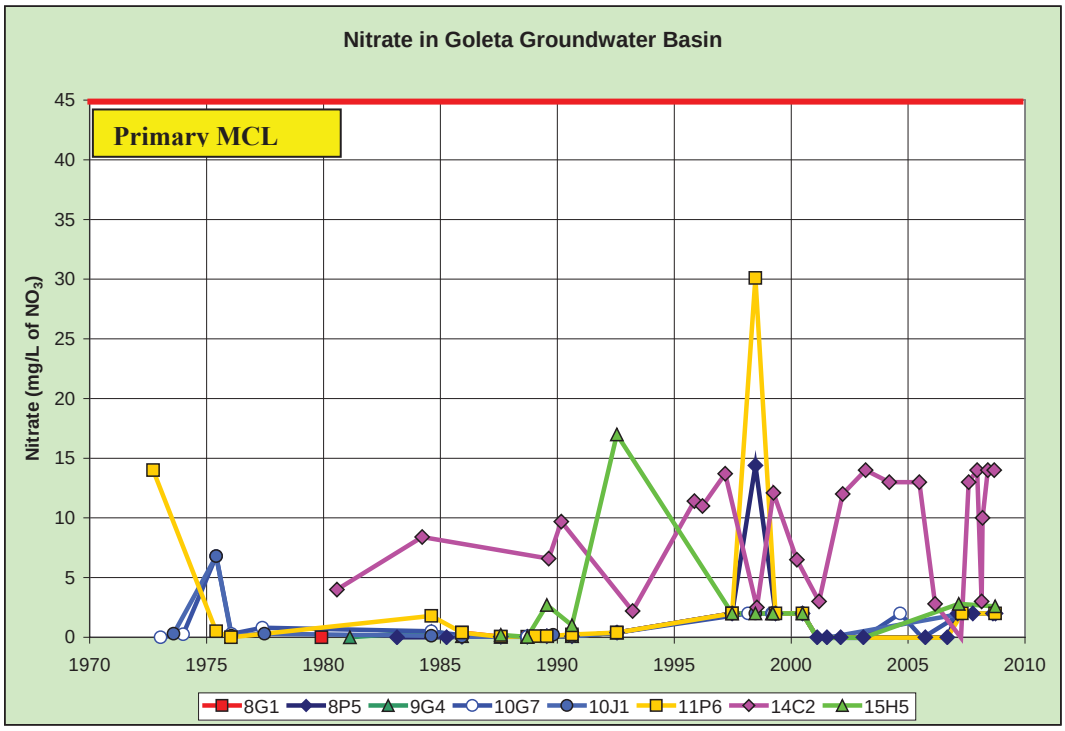

Figure 3-15. Nitrate (as NO_3) in selected wells in Goleta Groundwater Basin. 45 mg/L of nitrate as NO_3 is a primary drinking water standard. Wells located on Figure 3-13. See Figure 3-14 caption for well names.

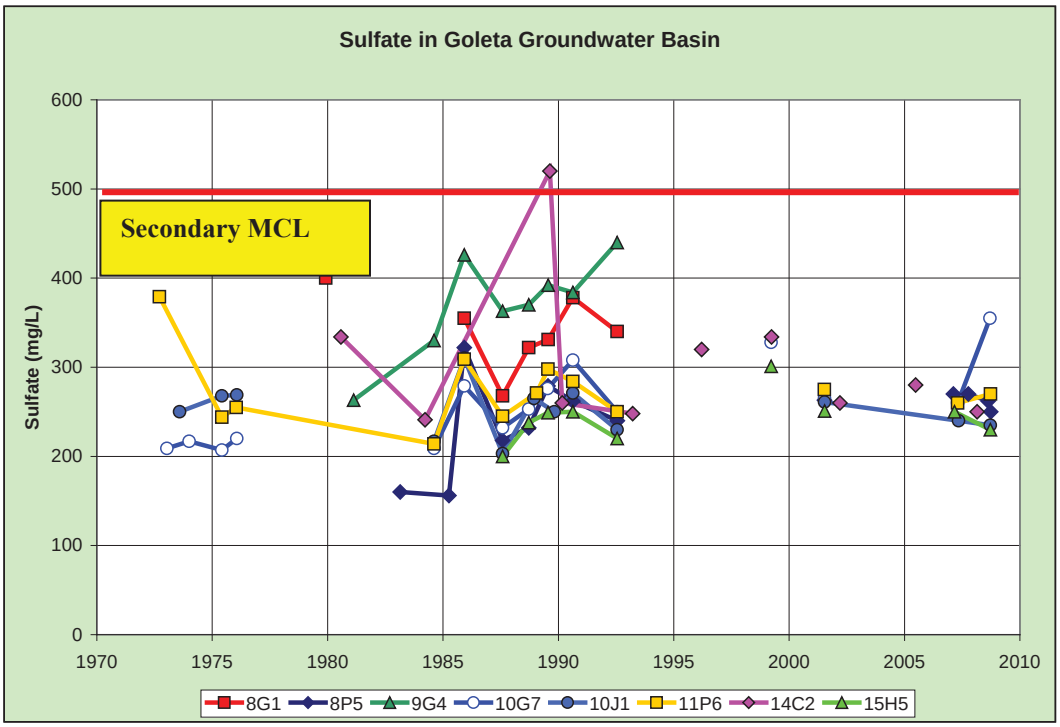

Figure 3-16. Sulfate in selected wells in Goleta Groundwater Basin. 500 mg/L is the secondary drinking water standard for sulfate. Wells located on Figure 3-13. See Figure 3-14 caption for well names.

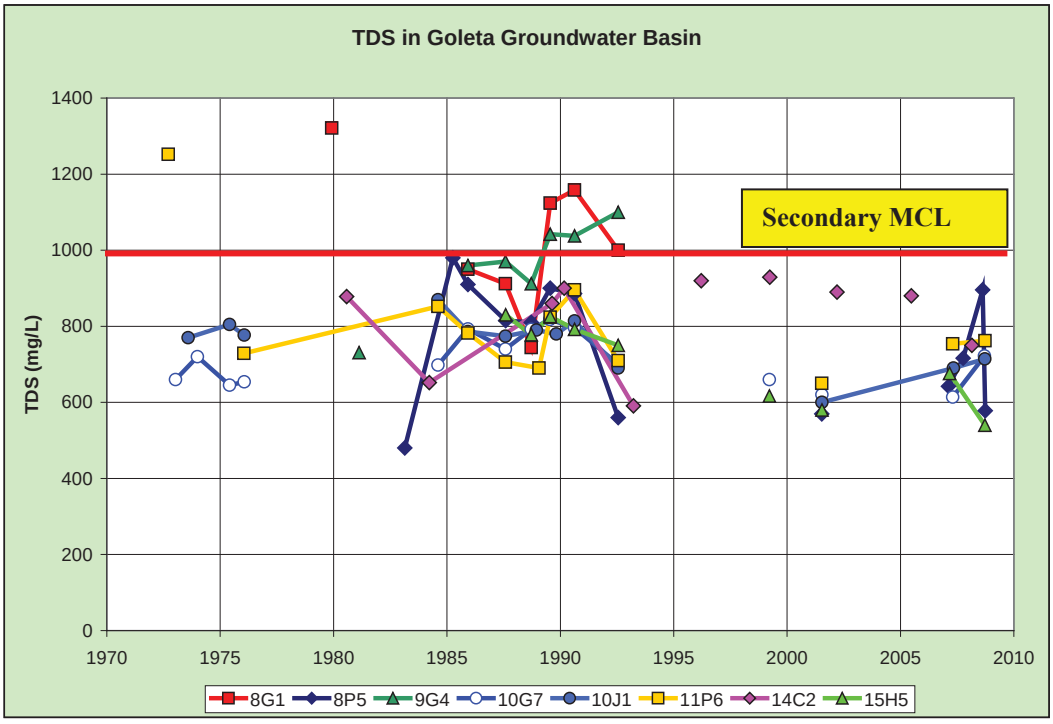

Figure 3-17. Total Dissolved Solids (TDS) in selected wells in Goleta Groundwater Basin. 1000 mg/L is the secondary drinking water standard for TDS. Wells located on Figure 3-13. See Figure 3-14 caption for well names.

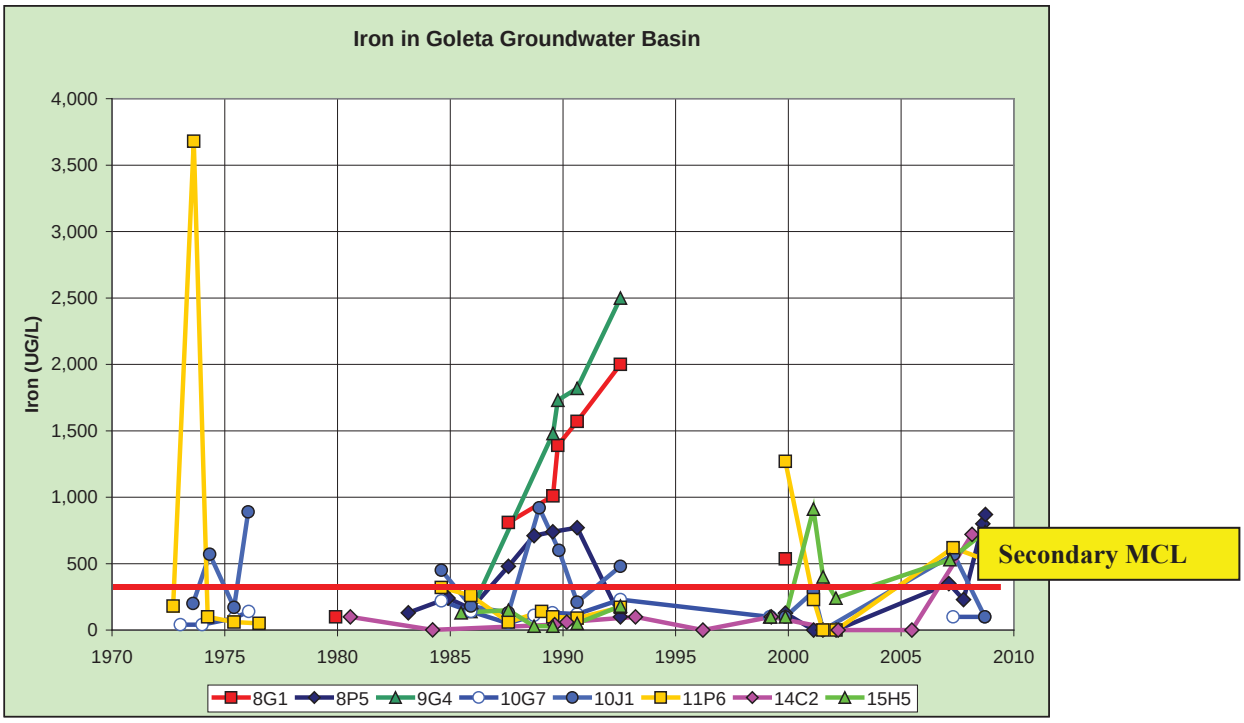

Figure 3-18. Iron in selected wells in Goleta Groundwater Basin. 300 µg/L is the secondary drinking water standard for iron. Wells located on Figure 3-13. See Figure 3-14 caption for well names.

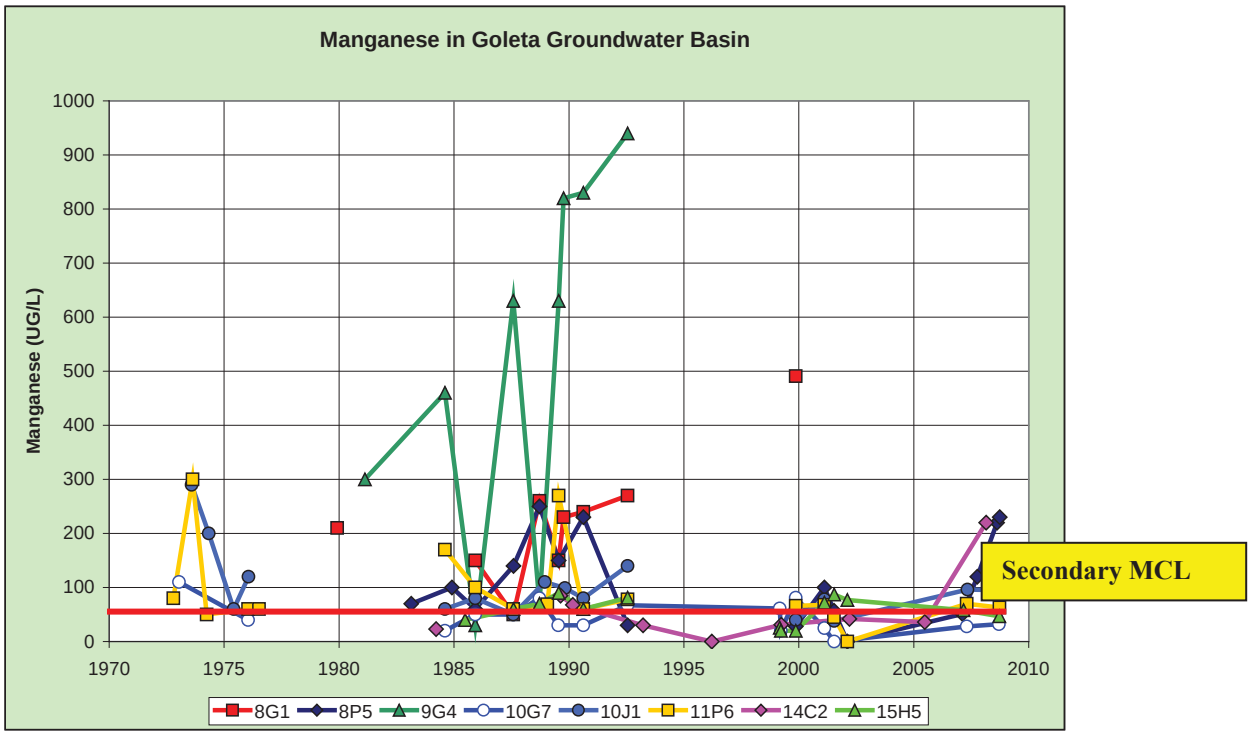

Figure 3-19. Manganese in selected wells in Goleta Groundwater Basin. 50 µg/L is the secondary drinking water standard for manganese. Wells located on Figure 3-13. See Figure 3-14 caption for well names.

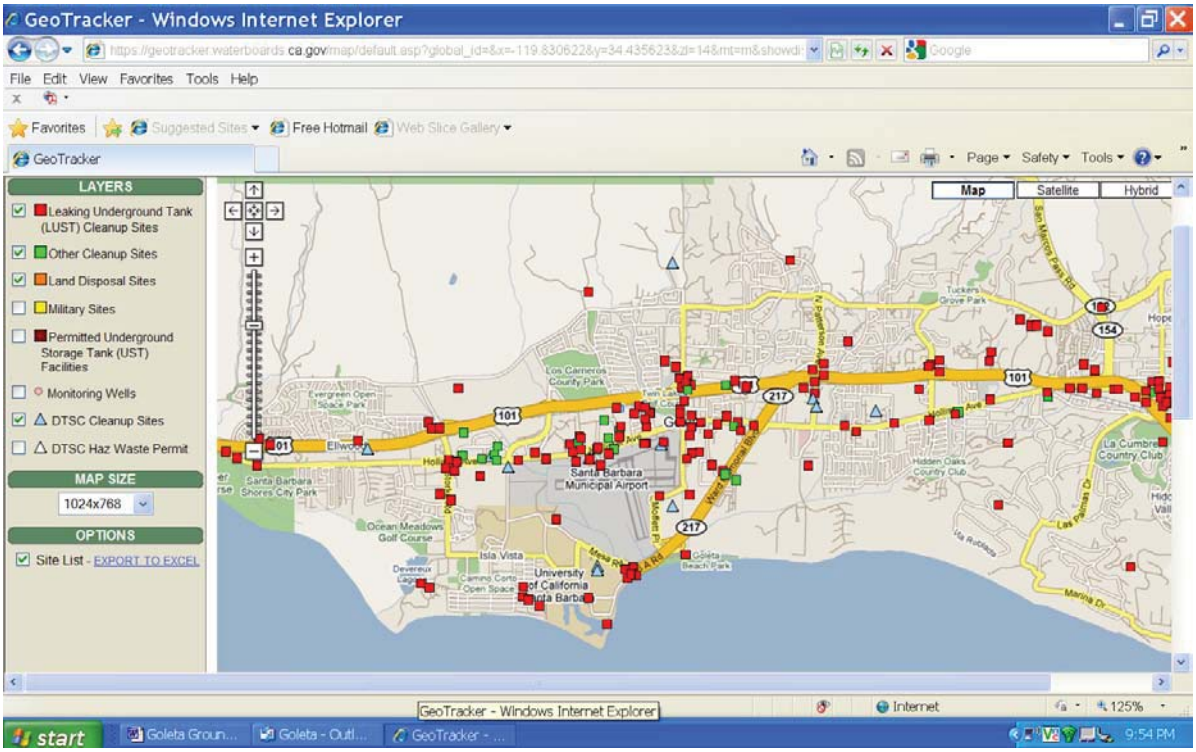

Figure 3-20. Location of surface contamination sites in the Goleta Groundwater Basin, from GeoTracker program of the State Water Resources Control Board. Many of the sites are no longer active – they have been remediated and the case closed.

3.2 Groundwater Pumping and Injection

The first wells were drilled in the Goleta Groundwater Basin in about 1890 (Upson, 1951). They were shallow artesian flowing wells, generally less than 100 ft deep. During the early history of groundwater use, there was sufficient piezometric pressure to raise water from a well as much as 30 ft above ground surface (Upson, 1951), but that diminished with time as more wells were drilled and aquifer pressures dropped. Deeper, larger-diameter wells were then drilled, pumps were installed, and groundwater was used to develop fruit and nut orchards. By the late 1930s, various reports estimated groundwater use to be somewhere between 3,000 and 6,000 acre-feet per year, with Upson (1951) reporting average pumping of 4,600 acre-feet per year during the 1930s and 1940s.

As urbanization replaced agriculture, public water producers became a larger factor in the use of groundwater in the Goleta Groundwater Basin. La Cumbre formed in 1925 to serve the developing Hope Ranch area. For close to forty years, groundwater pumping was the sole source of La Cumbre's water supply. GWD first began producing groundwater in 1963, with less than 1,000 acre-feet per year produced before 1970 (GWD, 2008). More-complete records of groundwater extractions began around 1970, with pumping by GWD, La Cumbre MWC, and private parties indicated on Figure 3-21. Overall pumping in the basin peaked in the latter half of the 1980s in the range of 6,000 to 8,000 acre-feet per year. Starting in the 1990s, basin pumping declined dramatically, largely as the result of the Wright Judgment, the SAFE Ordinance, and the end of the drought.

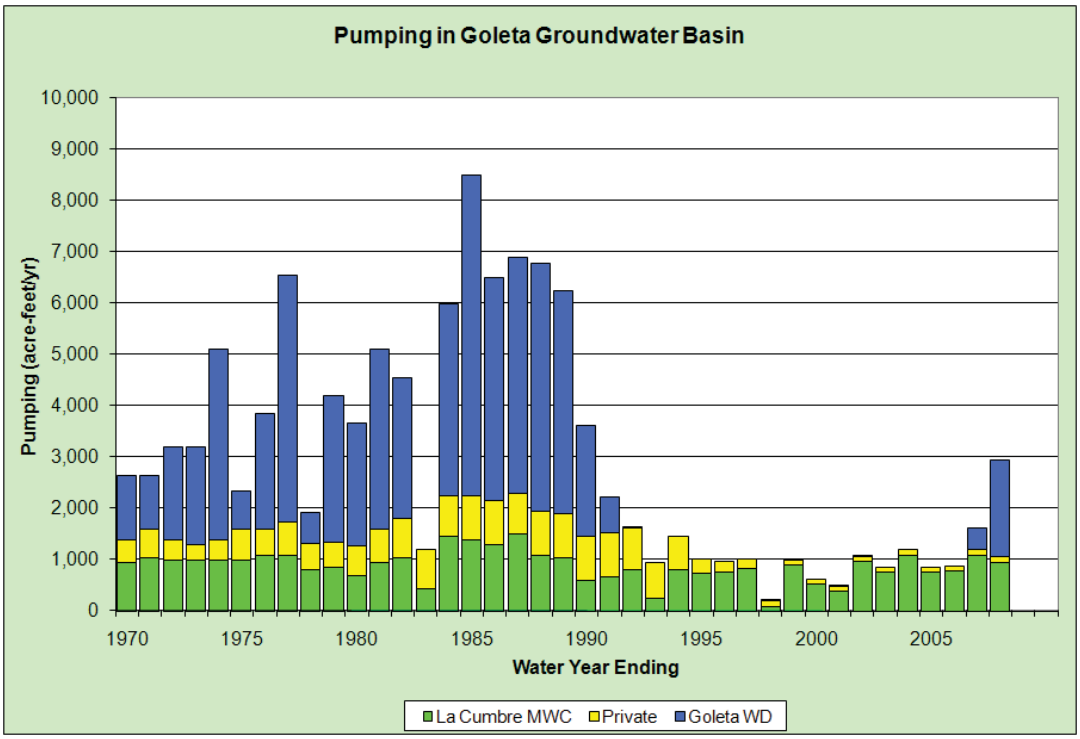

Figure 3-21. Historical pumping in the Goleta Groundwater Basin.

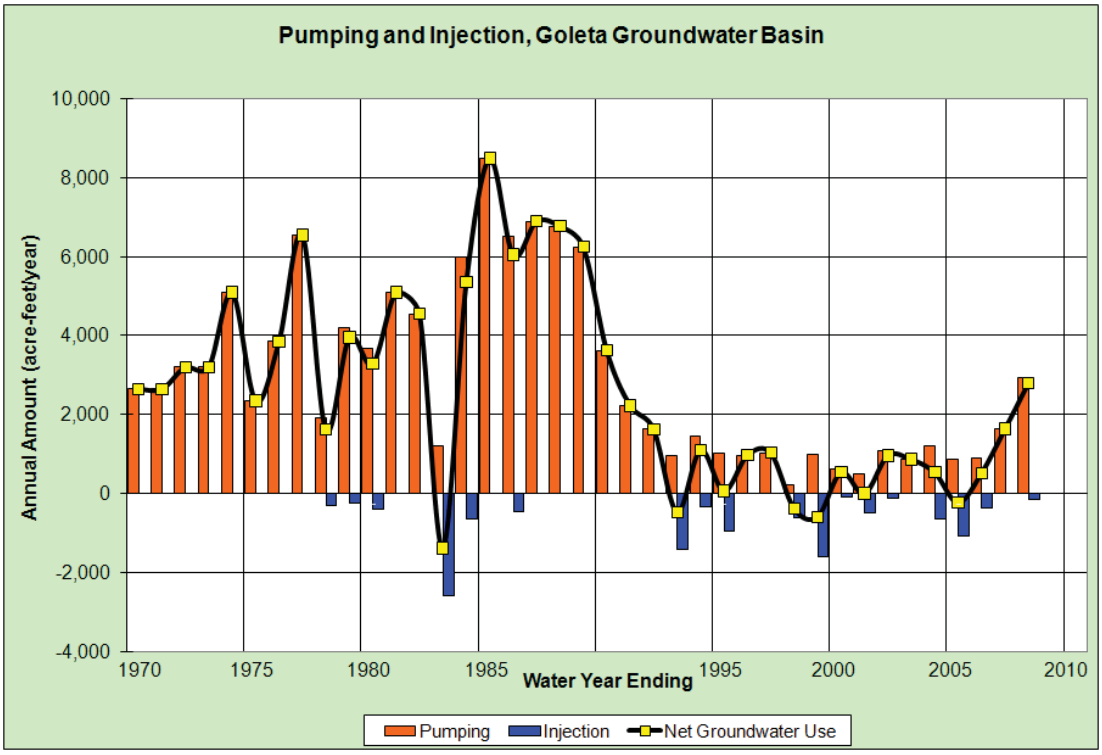

Figure 3-22. Historical pumping and injection in the Goleta Groundwater Basin.

3.3 Operation of ASR Project

The Goleta Groundwater Basin was one of the first basins to enhance natural recharge by injecting drinking water into wells. The early injection by GWD was simple – place a fire hose in the well, connect it to a hydrant, and fill the well to near its top, allowing gravity to push the water into the aquifer through the same perforations in the well casing from which water was produced from the aquifer. This injection was initiated in the late 1970s and has been used whenever there are excess surface supplies available in wetter years (Figure 3-22). Over 1,500 acre-feet of water have been injected in a single year in the basin (see section 4.4.1-*Groundwater Storage Programs*).

The source of water injected by GWD is spill water from Lake Cachuma. The GWD's recent rehabilitation of its well facilities included a special retrofit of its wells for use as dual-purpose injection-extraction wells (commonly referred to as "Aquifer Storage and Recovery," or "ASR" wells) to maximize injection capacity. These actions were undertaken to maximize conjunctive use potential of the basin and Cachuma Reservoir.

Water that is injected becomes available to be used in dry years when surface water supplies are reduced. In this way the surface and groundwater supplies are used "conjunctively". Conjunctive use operations allow a more efficient use of both surface and groundwater supplies. Over the last 16 years, the GWD has injected 7,129 acre-feet, or 446 acre-feet per year on an average annual basis.

4 Basin Management

4.1 Basin Management Objectives

Basin Management Objectives ("BMOs") are quantitative targets established in a groundwater basin to measure and evaluate the health of the basin. BMOs can be groundwater elevations and/or chemical concentrations in wells. For the Goleta Groundwater Basin, the water level BMOs are set at the lowest measured historical static (non-pumping) groundwater elevation in each BMO well. If groundwater elevations in a BMO well fall below this elevation, the BMO will be considered to have not been met and the basin will be considered to be in distress. This criterion for the water level BMO is based on the observation that a groundwater elevation that low in the well in the past did not harm the basin, but a groundwater elevation below the BMO may create potential undesirable effects.

An additional BMO in the basin is maintaining concentrations of nitrate and chloride at or below levels that are harmful to human health or damaging to irrigated crops. The BMO for nitrate is set at one-half of the drinking water primary standard of 45 mg/L nitrate as NO_3 (one-half the standard is the level at which increased monitoring and testing is required by the California Department of Health Services for drinking water). Concentrations of nitrate higher than the standard of 45 mg/L can potentially cause Blue-Baby syndrome. A chloride concentration of 150 mg/L or lower is generally protective of irrigated crops, although salt-sensitive crops such as avocado and strawberries may see the beginning of reductions in yield at concentrations slightly lower than that. The BMO wells (Figure 4-1) and criteria (Table 4-1) are listed below.

All of the BMO wells are currently being monitored for water levels twice a year as part of the USGS effort. Only a portion of the BMO wells are currently being regularly monitored for water quality. The addition of these wells to a water quality monitoring network is discussed in section 7.2 Appendix B *Additional Water Quality Monitoring*.

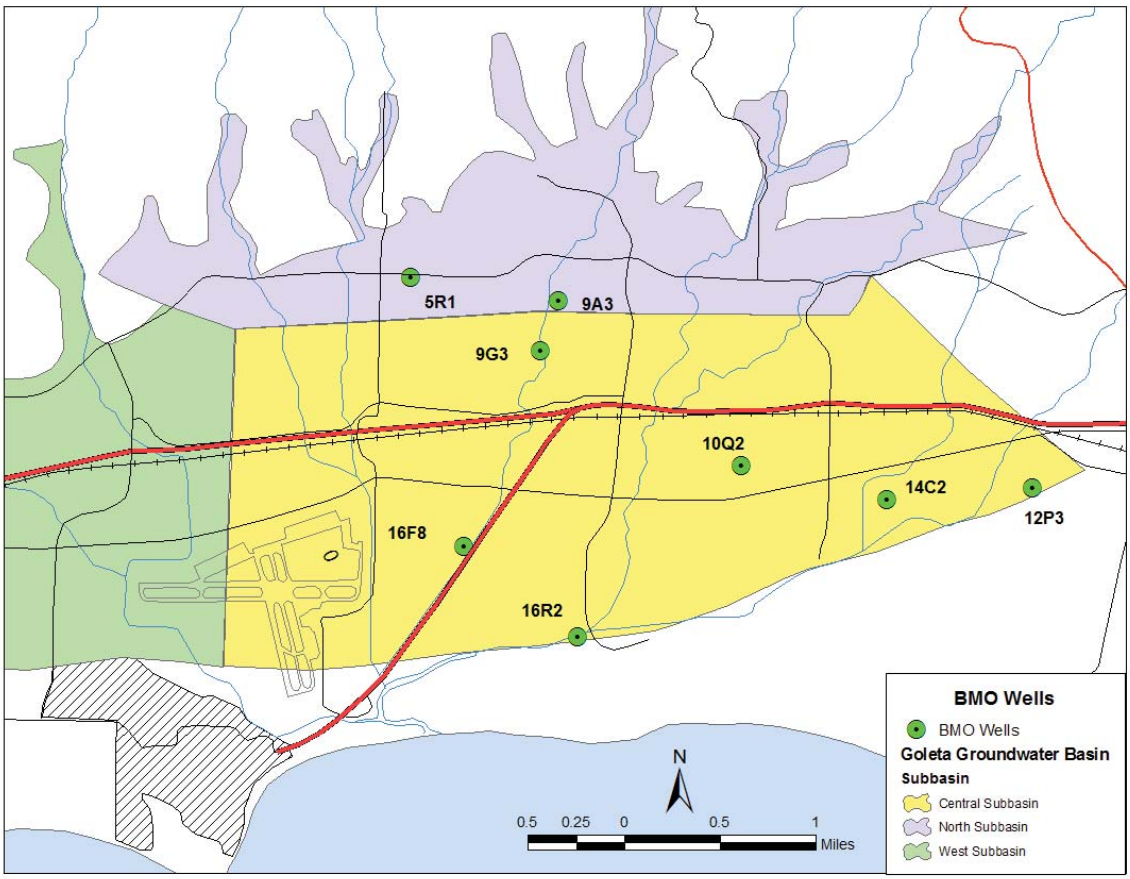

Figure 4-1. Locations of BMO wells.

Well	*Subbasin*	*WLE BMO*	*Nitrate BMO*	*Chloride BMO*	*Current WLE*	*Current Nitrate*	*Current Chloride*
4N/28W-5R1	North	15’	22.5	150	57’	NM	NM
4N/28W-9A3	North	15’	22.5	150	56’	NM	NM
4N/28W-9G3	Central	-75’	22.5	150	25’	0.4 (9G4)	100 (9G4)
4N/28W-10Q2	Central	-100’	22.5	150	-20’	NM	NM
4N/28W-12P3	Central	-180’	22.5	150	-27’	NM	NM
4N/28W-14C2	Central	-80’	22.5	150	-22’	14	48
4N/28W-16F8	Central	-58’	22.5	150	-10’	NM	NM
4N/28W-16R2	Central	-60’	22.5	150	14’	NM	NM

Table 4-1. BMOs for the Goleta Groundwater Basin. Chemical concentrations are in mg/L, nitrate is reported as NO_3. NM = no current measurements.

4.2 Basin Yield and Storage

The yield of a basin is the critical value in determining the amount of groundwater that can be pumped from a basin over the long term. This pumping is done within the

storage capacity of the basin – if an excess of water is pumped from the storage of the basin, damage could occur to the aquifer, even if recharge eventually refills the basin.

4.2.1 Basin Yield

Although a basin yield has been proposed for a number of groundwater basins in California, calculating a yield is not an easy task. This can be demonstrated by the lack of technical agreement on basin yield in many of the basin adjudications in California where there are many experts looking at the problem and there are a range of calculations of basin yield. However, the yield of a basin can commonly be bracketed rather than precisely calculated. Basin yield can be expressed as "safe yield" (a term that can have a legal meaning), "perennial yield", "basin yield", or a like term. The term is generally defined as:

> The yield of a basin is the average quantity of water that can be extracted from an aquifer or groundwater basin over a period of time without causing undesirable results. Undesirable results include permanently lowered groundwater levels, subsidence, degradation of water quality in the aquifer, or decreased stream flow. If water management in the basin changes, the yield of the basin may change. The yield of a basin is the average amount of water that can be pumped annually over the long-term. Pumping in individual years may vary above or below this long-term yield during drought or wet years, or as part of basin management plans. (Bachman and others, 2005)

There have been several methods used to calculate the yield of the Goleta Groundwater Basin. Upson (1951) used what is commonly called the "Hill Method" (e.g., Bachman and others, 2005) where the amount of pumping each year is plotted against the change in groundwater elevations caused by that pumping. Theoretically, in a year when there is no net change in groundwater elevation, the amount of pumping in that year is the yield of the basin. Unfortunately, this method assumes that the recharge to the basin from year to year is relatively constant, making it problematic for use in California groundwater basins such as in Goleta. Using this method, Upson (1951) calculated a basin yield of about 2,000 acre-feet per year for the years 1936 to 1950 (he considered the confined areas of the Central subbasin). This period coincides with a long dry climatic cycle (see Figure 2-4) when recharge was below average. Thus, Upson's number is very likely an underestimation of long-term basin yield.

The optimum situation for estimating basin yield would be if there happened to be a period when groundwater elevations remained unchanged during a period of average precipitation (and, thus, likely to be a period of average recharge). In such a situation, the average pumping over that period is likely to be an approximation of the yield of the basin. To investigate this possibility in the Goleta Groundwater Basin, Figure 4-2 was prepared to show the relationship between net pumping, climatic conditions, and groundwater elevation. The chart plots net pumping as columns, cumulative departure of rainfall (see Figure 2-4) as a line, and the groundwater elevation of well 4N/28W-9G3 as a line. Breaking the chart into distinct periods, several observations can be made:

- During the period 1970 to 1977, rainfall was near average (flat cumulative departure line) but groundwater elevations were dropping. This occurred

when average net pumping was about 3,700 acre-feet per year. This suggests that basin yield is somewhat lower than 3,700 acre-feet per year.

- During the period 1978 to 1982, rainfall was above average but groundwater elevations continued to drop. This occurred when average net pumping was about 3,700 acre-feet per year. This suggests that basin yield is lower than 3,700 acre-feet per year.
- During the period 1984 to 1990, rainfall was below average and groundwater elevations continued to drop. This occurred when average net pumping was about 6,200 acre-feet per year. Nothing can be observed about basin yield.
- During the period 1992 to 2007, recharge and groundwater elevations both went up. This occurred during minimal net pumping. Nothing can be observed about basin yield.

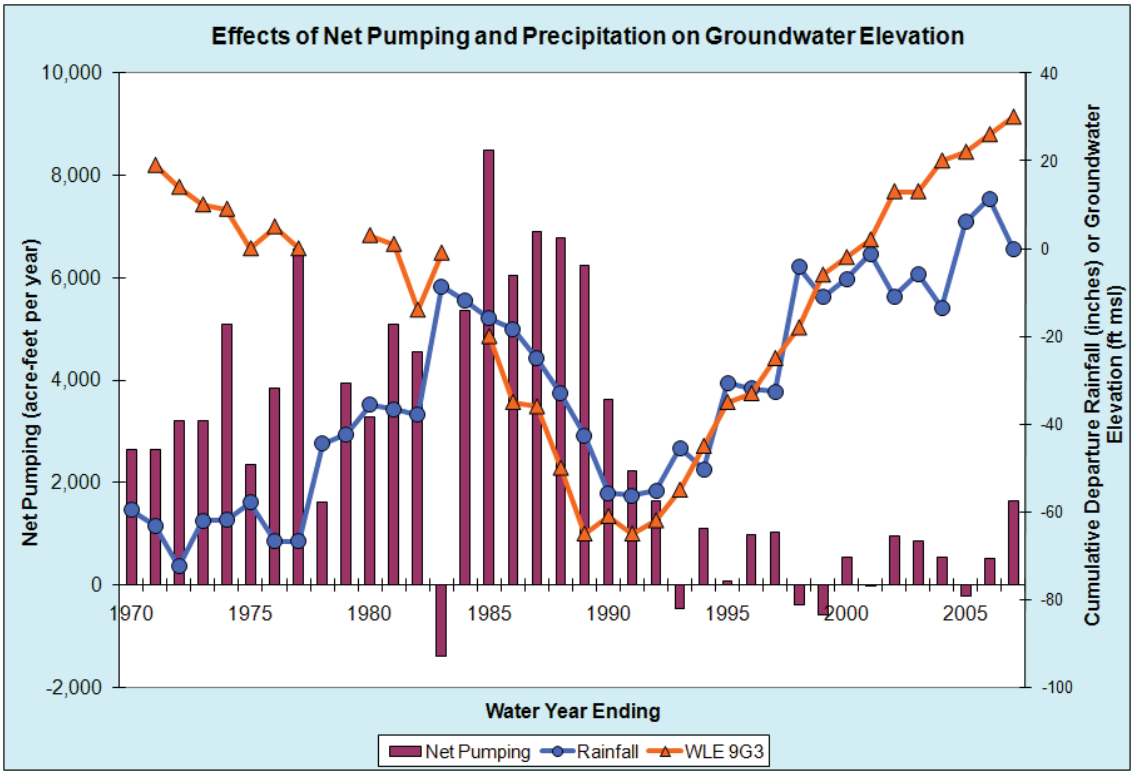

Figure 4-2. Effects of net pumping (pumping minus injection) and precipitation on groundwater elevation. Rainfall is plotted as cumulative departure of Goleta rainfall. Water level elevation is for the 9G3 well (GWD Berkeley #1) located in the northern portion of the Central subbasin. See text for interpretation.

Thus, the conclusion drawn from Figure 4-2 is that the yield of the basin is likely somewhat less than 3,700 acre-feet per year. In fact, the Wright Judgment established the safe yield of the basin as 3,410 acre-feet per year, with the perennial yield estimated as

3,700 acre-feet per year[7]. This safe yield number does not include any water stored in the basin by GWD or La Cumbre as a drought buffer.

4.2.2 Basin Storage

The amount of usable storage in a basin is important in determining how a basin should be operated through wet and dry climatic conditions. The yield of a basin is calculated such that no undesirable effects occur during pumping of the basin. Thus, usable storage in the basin should not be depleted during dry periods to the extent that these undesirable effects occur. An extreme example of this would be a basin with storage of only a few years of pumping, so that all the usable storage would be depleted during a long drought.

Basin storage is generally calculated by estimating how much water could be drained from pore space in the basin's aquifers, down to a certain elevation. Sometimes this lower elevation is set as deep as the top of poor quality water in the aquifers, which may be hundreds to thousands of feet below sea level. However, it is likely that there would be undesirable effects if groundwater was pumped down to that depth, so a storage number calculated in such a manner is not particularly useful in groundwater management. Instead, useable storage can be calculated to reflect how much water can actually be extracted without undesirable effects (it is generally a much lower number).

A typical method of calculating useable storage is to choose a depth to which groundwater can be drained without undesirable effects and multiplying the aquifer volume to that depth by the percentage of drainable pore space in the aquifer ("specific yield"). Specific yield varies by aquifer and area, but is commonly in the range of 10% to 20%.

Historical calculations of usable storage in the Goleta Groundwater Basin have varied somewhat on the assumptions used in the calculation. Toups (1974) estimated the storage at 200,000 acre-feet for the upper 400 feet of saturated sediments, with usable storage between 40,000 and 60,000 acre-feet. Those storage numbers are what are currently being reported in DWR Bulletin 118 (DWR, 2009).

In work done by CH2MHill and used by GWD, usable storage down to historical low water levels was calculated at 30,000 to 60,000 acre-feet (CH2MHill, 2005; GWD, 2008). In addition, there is another 10,000 to 20,000 acre-feet of currently-dewatered aquifer that could be filled (CH2MHill, 2005; GWD, 2008). If the conservative assumption is used that groundwater elevations should not go below historical lows (we know that no undesirable effects occurred at this level), then the total storage that can be worked with is between 40,000 and 80,000 acre-feet. The majority of this storage is in the Central and North subbasins. The current amount of water stored in the basin by GWD and La Cumbre is just over 44,000 acre-feet (see section 4.4.1-*Groundwater Storage Programs*), within the estimated range of useable storage. The amount of manageable storage in the Goleta Groundwater Basin allows flexibility in drought

[7] The Court in the Wright Judgment defined the perennial yield as including 350 acre-feet per year for the GWD well injection system and 100 acre-feet per year of return flow (applied water that percolates back to the aquifer).

planning. Specific management strategies are discussed in the section 5-*Future Management Strategies*.

4.3 Technical Components of the Plan

There are a number of technical components that can be included in a groundwater management plan[8]. These components include:

1. The control of saline water intrusion.
2. Identification and management of wellhead protection areas and recharge areas.
3. Regulation of the migration of contaminated groundwater.
4. The administration of a well abandonment and well destruction program.
5. Mitigation of conditions of overdraft.
6. Replenishment of groundwater extracted by water producers.
7. Monitoring of groundwater levels and storage.
8. Facilitating conjunctive use operations.
9. Identification of well construction policies.
10. The construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling and extraction projects.
11. The development of relationships with state and federal regulatory agencies.
12. The review of land use plans and coordination with land use planning agencies to assess activities which create a reasonable risk of groundwater contamination.

Some of these components are under the jurisdiction of other agencies or are not applicable to the Goleta Groundwater Basin. The following components are considered in this Groundwater Management Plan:

- Control of saline intrusion
- Mitigation of overdraft
- Replenishment of groundwater
- Monitoring
- Conjunctive use
- Operation of recharge, storage, water recycling, and extraction projects

These technical components are integrated into a number of management strategies for the basin.

4.4 Current Management Strategies

Management strategies are the methods to implement the Groundwater Management Plan. The discussion of these strategies is divided into two parts – current strategies (this section) and recommended future strategies (section 5 – *Recommended Future Strategies*).

4.4.1 Groundwater Storage Programs

The current strategy for groundwater storage in the basin follows both the Wright Judgment (for GWD and La Cumbre) and the SAFE Ordinance (for GWD). For both

[8] California Water Code section 10753.7.

purveyors, the storage strategy has used both in-lieu recharge (using another water source to reduce pumping and letting the basin refill) and direct well injection. GWD has pumped a minimal amount from the basin since the early 1990s, allowing the basin to refill. La Cumbre has pumped below their water right over the past 10 years, also allowing the basin to refill.

GWD has delivered a portion of its Cachuma spill water (water that would otherwise have spilled from the dam during a wet period when Cachuma was full) to La Cumbre for recharge to Goleta's benefit (Table 4-2). This spill water has been used by La Cumbre to offset their own pumping and for direct injection in La Cumbre's wells. Since the beginning of 1999, GWD was required by the Wright Judgment to offer to deliver 20% of Goleta's treated spill water to La Cumbre at GWD's actual cost. If the offer is not accepted, GWD may use La Cumbre's wells for injection of water into the basin. La Cumbre has used their share of this spill water to offset pumping and, most recently, for direct injection (Table 4-3). Total water in storage for GWD and La Cumbre at the end of 2009 was in excess of 44,000 acre-feet.

Year	*Water Right (AFY)*[9]	*Pumping (AF)*	*Injection (AF)*[10]	*Annual Storage (AFY)*	*Cumulative Storage (AF)*
1992	2,023	13		2,010	2,010
1993	2,037		1,422	3,459	5,470
1994	2,051		346	2,397	7,867
1995	2,051		964	3,015	10,882
1996	2,175			2,175	13,054[11]
1997	2,224			2,224	15,272
1998	2,226	8	600	2,818	18.084
1999	2,226	8	1,595	3,807	21,891
2000	2,226		70	2,290	24,182
2001	2,226	8	405	2,623	26,805
2002	2,226	3	113	2,336	29,141
2003	2,350			2,350	31,492
2004	2,350		658	3,008	34,500
2005	2,350		668	3,018	37,518
2006	2,350		288	2,638	40,156
2007	2,350	438		1,912	42,068
2008	2,350	1,888	334	796	42,864
2009	2,350	1,987	26	389	43,253

Table 4-2. GWD groundwater storage in Central subbasin (in acre-feet) under the Wright Judgment.

Calculation of storage under the Wright Judgment uses a different method of calculation for La Cumbre than for GWD. For La Cumbre, a 10-year moving average of pumping is used to allow annual pumping to vary above and below the water right of 1,000 acre-feet per year to accommodate wet and dry periods. In Table 4-3, the water available to pump above the water right is tracked in the 10-Yr Accumulated Unused

[9] Includes increased groundwater rights from both exchanges and augmented service (see Table 1-1).
[10] From GWD annual reports to the Court and other Parties to the Judgment.
[11] Several years have slight deduction for delivery to non-parties.

Water column. In 2009, the 1999 data dropped off the calculation so that only the most recent ten years were used in the calculation. The exception to this is water stored by injection into the aquifer – this storage accumulates until it is pumped back out.

Calendar Year	*Water Right*	*Pumping*	*Unused Water Right*	*10-Yr Accumu-lated Unused Water*	*Injection Storage*	*Cumulative Injection Storage*
1999	1,000	893	107	107		
2000	1,000	533	467	574	27	27
2001	1,000	394	606	1,180	98	125
2002	1,000	969	31	1,211		125
2003	1,000	765	235	1,446		125
2004	1,000	1,095	-95	1,351		125
2005	1,000	766	234	1,586	424	549
2006	1,000	786	214	1,800	81	631
2007	1,000	1,096	-96	1,704		631
2008	1,000	957	43	1,747	150	781
2009	1,000	953	47	1,687		781

Table 4-3. La Cumbre water rights and groundwater storage in Central subbasin (in acre-feet). La Cumbre was first allowed by the Wright Judgment to store water in 1999. Pumping can vary annually as long as the average of the most recent ten years does not exceed 1,000 acre-feet per year. 2009 was the first year where the moving average dropped a year, 1999, as the ten-year average was calculated using years 2000-2009.

The SAFE Ordinance, which applies only to GWD, provides for the creation of a Drought Buffer of water stored in the Goleta groundwater basin to protect against future drought emergencies. When groundwater elevations are below 1972 levels (interpreted in this Plan as the average of the Index Wells in any year being below the average in 1972), SAFE specifies that a certain amount of water must be committed to be recharged to the basin during each year (see section 1.3 – *SAFE Ordinance (GWD*)). The amount of water required to be stored annually under these conditions is GWD's basic water right (2,000 acre-feet per year) plus ⅔ of the amount of any new service (Table 4-4). SAFE specifies that any State Water delivered to GWD in excess of 3,800 acre-feet per year must be recharged to the basin. The annual storage commitment and State Water delivery to recharge are not required to be made in any year when groundwater elevations are above 1972 levels (Table 4-5).

The Wright Judgment and the SAFE Ordinance interact to a degree (for GWD), which is discussed further in section 5.6 – *Interaction of Wright Judgment and SAFE Ordinance*.

Year	Base Annual Storage Commitment (AFY)	New Service (AF)	New Service Storage Commitment (AFY)[12]	Annual Storage Commitment (AFY)[13]
1997	2,000	165	110	2,110
1998	2,000	96	64	2,174
1999	2,000	13	9	2,183
2000	2,000	21	14	2,197
2001	2,000	33	22	2,219
2002	2,000	31	21	2,240
2003	2,000	11	8	2,248
2004	2,000	24	16	2,263
2005	2,000	45	30	2,294
2006	2,000	26	17	2,311
2007	2,000	77	51	2,362
2008	2,000	9	6	2,368
2009	2,000	7	5	2,373

Table 4-4. GWD required annual commitment to storage under the SAFE Ordinance. The storage requirement for new service is additive of previous storage requirements because the new demand is present in subsequent years and must be protected using the Drought Buffer.

[12] ⅔ of the New Service demand is added to the Base Contribution.

[13] The Annual Storage Contribution is calculated each year. It is only required to be contributed when groundwater elevations are below 1972 levels. Note that calculations have been rounded so additions of columns may appear to be erroneous (but they aren't).

Year	Annual Storage Commitment Calculation (AFY)	Required Annual Storage Commitment (AFY)[14]	Water Stored Under Commitment (AFY)	Annual Commitment Outstanding (AF)
1997	2,110	2,110	2,110	0
1998	2,174	2,174	2,174	0
1999	2,183	2,183	2,183	0
2000	2,197	2,197	2,197	0
2001	2,219	2,219	2,219	0
2002	2,240	2,240	2,240	0
2003	2,248	2,248	2,248	0
2004	2,263	2,263	2,263	0
2005	2,294	0	0	0
2006	2,311	0	0	0
2007	2,362	0	0	0
2008	2,368	0	0	0
2009	2,373	0	0	0

Table 4-5. GWD required annual storage commitment under SAFE, indicating actual recharge and any outstanding commitment that has not yet been recharged. GWD has satisfied all required storage commitments through 2009. No contribution has been required since 2004 because groundwater elevations have been above 1972 levels.

There are limits to how much the basin can continue to be filled. Available unused storage in the basin as of 2008 has been calculated to range from 10,000 to 20,000 acre-feet (see section 4.2.2-*Basin Storage*). That remaining storage could be filled in less than a decade if there was no intervening drought. It is not clear what unintended consequences would occur if the basin was filled to levels unseen in decades; possible consequences could be reactivation of springs, flooding of foundations and shallow excavations, unwanted flow from wells that are not equipped to withstand artesian conditions, leaking of abandoned wells that were improperly destroyed, and interference with groundwater cleanup operations.

4.4.2 Groundwater Pumping

The current strategy for pumping in the basin is to stay within water rights determined by the Wright Judgment, allow the basin to recover by reducing pumping when possible, and store un-pumped groundwater for a drought or some other water contingency. GWD is currently pumping groundwater for just such a contingency, to dilute water from Lake Cachuma that has increased organic matter and subsequently higher disinfection byproducts caused by erosion in the Cachuma watershed burned in the Zaca fire.

La Cumbre has pumped groundwater somewhat below their water right over the last decade (Table 4-3), whereas GWD's pumping has been reduced to a minimum since the early 1990s to allow the basin to refill (Table 4-2). As a result of the reduced pumping,

[14] After 2004, GWD Board determined that groundwater elevations were above 1972 levels, so no Annual Commitment was required.

groundwater elevations in much of the Central subbasin have been rising for years. Near-surface elevations in the West subbasin may also be related to this reduced pumping. Current pumping strategies do not address the long-term management of these groundwater elevations.

In the eastern portion of the Central subbasin, where groundwater elevations are lower than elsewhere in the subbasin (Figure 2-2), La Cumbre pumping balances water quality concerns against costs – groundwater is less expensive than State Water, but the surface water (State Water flows through Cachuma reservoir during delivery) is usually better quality.

4.4.3 Groundwater Monitoring

The existing regional groundwater level monitoring program, conducted by the U.S. Geological Survey and contracted by GWD, consists of collecting manual measurements of water levels in 47 basin wells twice a year: 35 wells in the Central subbasin, 6 in the North subbasin, and 4 in the West subbasin. A few of these wells are close to purveyors' wells, limiting their usefulness when the supply wells are being pumped. The monitoring is currently conducted in June and December of each year. The location and elevation of the wells were surveyed in 2008. These wells, along with their construction details, have been entered into a Geographic Information System (GIS) database as part of preparing this Plan. Groundwater elevation records, including historic records as far back as the 1920s, are in digital form.

In addition, purveyors' wells are commonly fitted with pressure transducers as part of their automated SCADA system; water levels measured by the transducers are preserved digitally. GWD is currently placing several pressure transducers in additional wells.

Regional groundwater quality is not currently regularly monitored outside of the purveyors' required drinking water monitoring. Historical water quality data is more complete (e.g., compare Figure 3-1 to Figure 3-7). Both historic and current water quality data have been entered into a digital database as part of preparing this Plan.

4.4.4 Groundwater Modeling

A groundwater flow model has been constructed for the Goleta Groundwater Basin (CH2MHill, 2009b). The model calculates groundwater elevations through time that would result from changes in pumping. As currently constructed, the model can be used to determine future well locations in the Central basin.

4.4.5 Wellhead Protection

A Drinking Water Source Assessment is required by the California Department of Public Health (DPH) for each of the purveyors' public water supply wells. Purveyors were given the option of doing the Assessment themselves or having DPH do the Assessment. In the Goleta Groundwater Basin, DPH conducted the Assessments for the purveyors. They are on file with DPH and the purveyors. The Assessment evaluates the contamination potential for the aquifers from overlying uses ranging from leaking gasoline tanks to concentrated farm animals. Most of the purveyors' wells are relatively

well protected because water is produced from confined aquifers, where low-transmissive beds such as clays separate surface contamination sources from the deeper aquifers.

4.4.6 Cooperation with Other Agencies

South Coast water agencies belong to regional water organizations, depending upon their sources of water. GWD is a member of the Cachuma Operations and Maintenance Board (COMB) and Cachuma Conservation Release Board (CCRB) along with the other agencies who receive water from Lake Cachuma. GWD and La Cumbre are member and associate member agencies, respectively, of the Central Coast Water Authority (CCWA), their State Water contractor. GWD and La Cumbre coordinate as needed with the City of Santa Barbara on issues related to water delivery and interties.

5 Recommended Future Strategies

5.1 Semi-Annual Monitoring of Groundwater Elevations

The semi-annual monitoring conducted by the U.S. Geological Survey (under contract to GWD) is an essential element of basin monitoring. Semi-annual monitoring is generally designed so that annual high and low groundwater elevations in the basin are determined. Current monitoring occurs in the months of June and December.

To evaluate whether June and December are the optimum monitoring months to detect annual high and low groundwater levels, both historical groundwater measurements and automated measurements from GWD's production wells (SCADA data) were analyzed. Using all the available historical water level data for which there are at least 6 measurements per year in a single well (this happened prior to the current USGS monitoring of twice a year), Figure 5-1 shows the months in which the high and low groundwater levels were measured for each year. The month in which wells in the Central subbasin recorded the largest frequency of high water levels was April, whereas the month with the most low water levels was December. There is a significant variation from year to year in the month in which high and low groundwater levels were recorded, likely reflecting annual differences in rainfall timing and magnitude, the lag time for recharge to reach individual wells, and local pumping patterns.

A similar analysis of historical water level records in the North and West subbasins (Figure 5-2 and Figure 5-3) yielded somewhat different results. In the North subbasin, highs and lows were in June and December, respectively. In the West subbasin, highs and lows were in April and October, although the number of samples was relatively small.

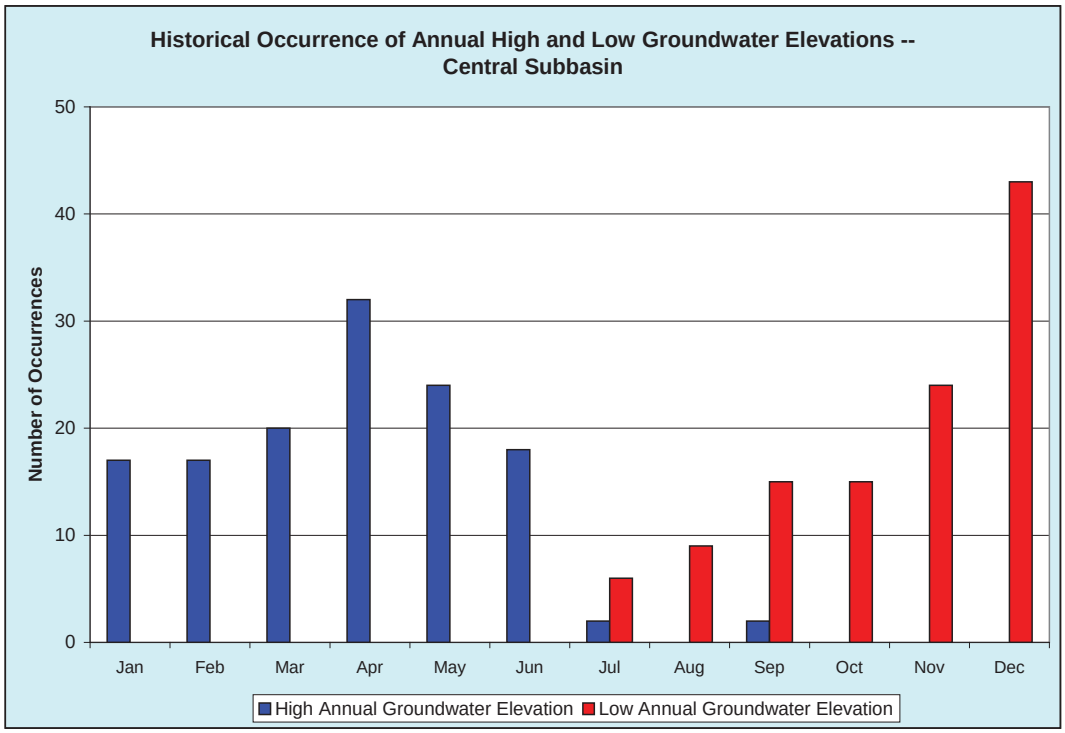

Figure 5-1. Months in which annual high and low groundwater elevations occurred, based on historical measurements from the Goleta Central subbasin.

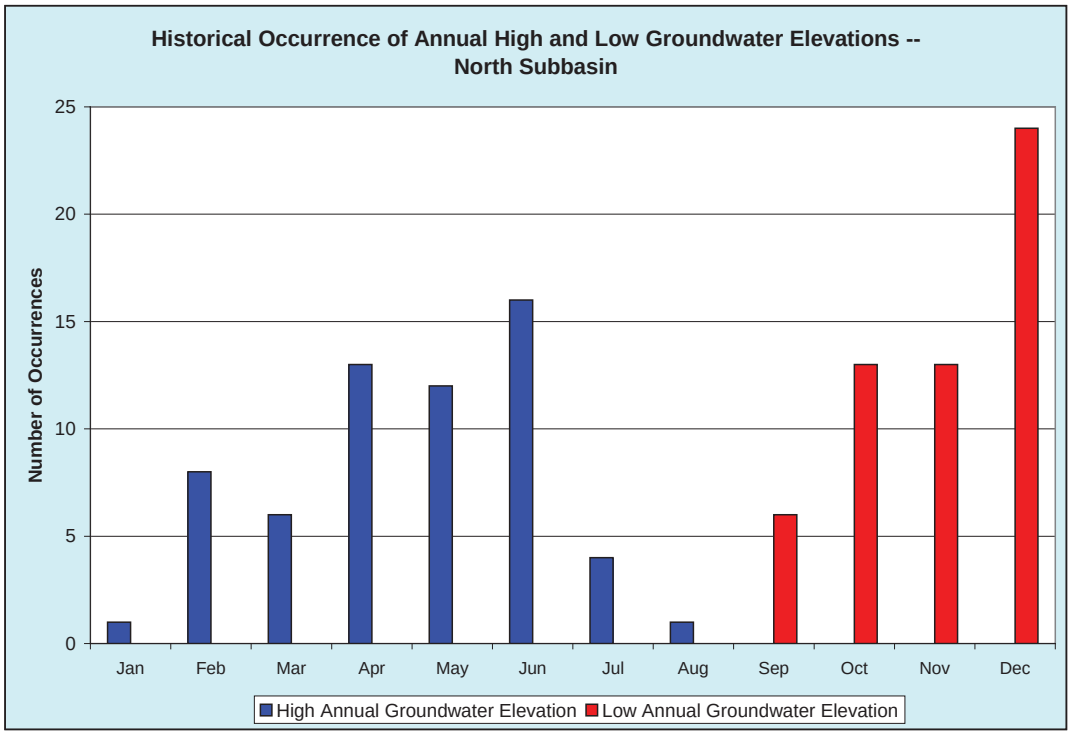

Figure 5-2. Months in which annual high and low groundwater elevations occurred, based on historical measurements from the Goleta North subbasin.

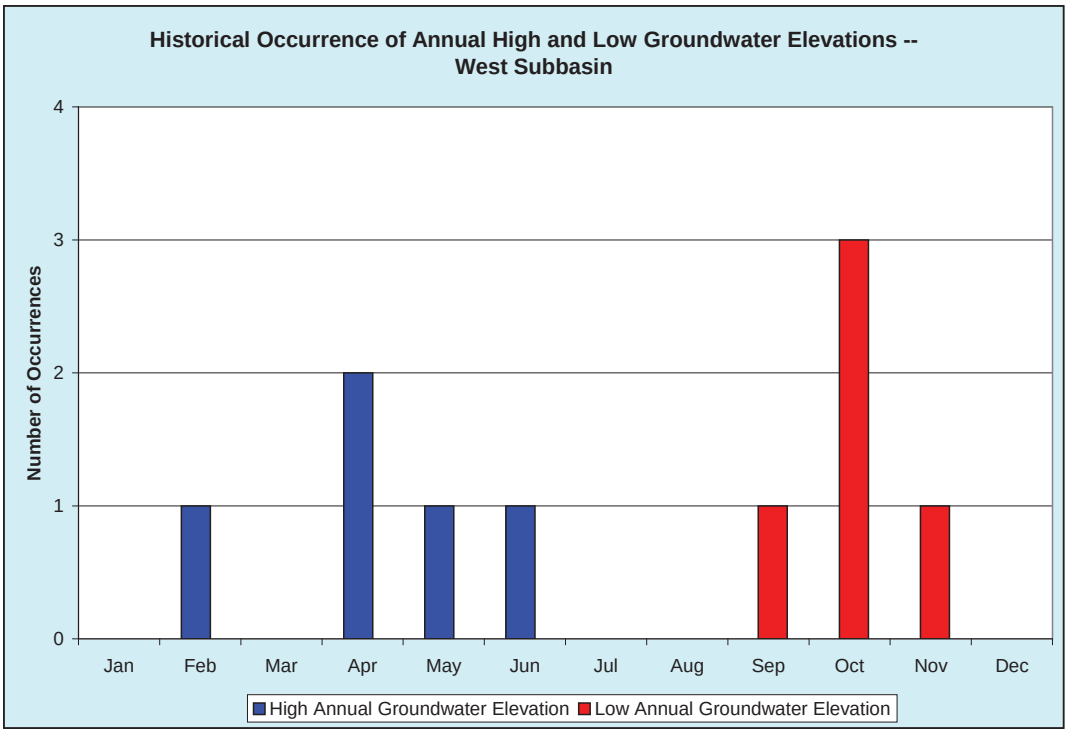

Figure 5-3. Months in which annual high and low groundwater elevations occurred, based on historical measurements from the Goleta West subbasin.

The historical record of high-frequency measurements of groundwater elevations in the Goleta Groundwater Basin is biased towards the 1970s and 1980s. To determine the timing of current high and low groundwater levels, data from GWD's automated measurements in producing wells (SCADA system) were used (Figure 5-4). The SCADA results indicate both depth to water in the well and the current rate of pumping. Using non-pumping water levels from the San Antonio well and discounting the periods of injection, high annual water levels occurred in March (blue arrows) and low annual water levels occur in August and September (red arrows). The measurements vary considerably over a short period of time because the pump is turning off and on, and some of the measured water levels have not recovered fully from a pumping cycle.

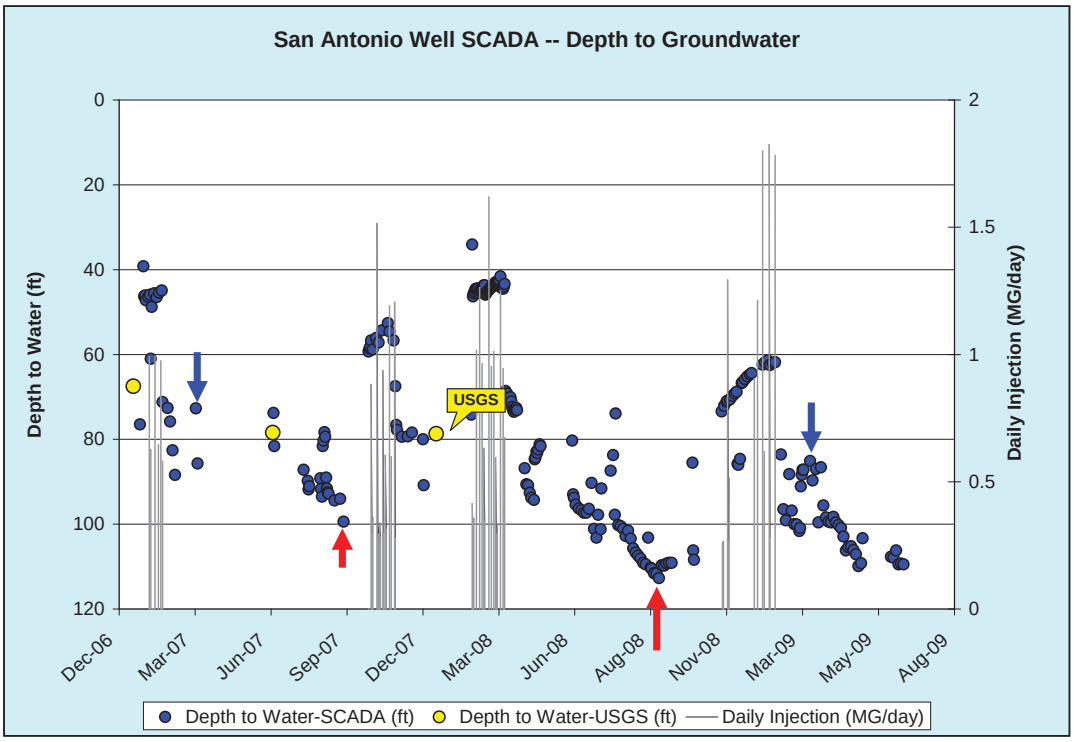

Figure 5-4. Automated depth to water measurements in GWD's San Antonio producing well from SCADA records. Water levels shown are for periods when the well was not pumping (but may still be affected by pumping). Blue arrows indicate annual high in groundwater elevations and red arrows indicate annual low. Manual measurements made by the U.S. Geological Survey are also shown.

There is a clear difference in the timing of annual high and low groundwater elevations between historical measurements and current automated measurements. Given the uncertainty in using data from a well that is pumping much of the time, it is recommended that the historical data be used as the basis for determining the months to monitor groundwater elevations. Thus, monitoring should take place in April and December. When information from the additional transducers is obtained (see below), this schedule can be modified as needed. This change in monitoring schedule should not affect comparisons to 1972 groundwater elevations (as part of the SAFE Ordinance) because 1972 measurements were largely conducted on a once-a-month schedule.

When the April and December water levels are measured, it is important to ensure that the measured well (if it is a pumping well) and nearby wells have not been pumped during the previous 12 hours or so. The SCADA data from GWD producing wells indicate that it takes about 10 hours in these wells for groundwater levels to recover (equilibrate to a constant level) after a pumping cycle is completed.

5.2 Additional Monitoring Points

There has been a recommendation to increase the number of monitoring points in the southeastern portion of the Central subbasin, where basin water levels are lowest, by adding as many as four additional monitoring wells (CH2MHill, 2009a). As shown on

Figure 2-2, there are few monitoring points in this area. It is recommended that at least two existing wells in this area be considered for water level monitoring. An additional monitoring point should be considered as a new dedicated monitoring site, with nested wells each of which are completed (perforated) at different depths in the aquifer (a typical nested monitoring site). Such a nested monitoring site provides different information than a production well, which is typically completed (open to the aquifer) over a large depth interval. A multiple completion monitoring well gives specific information at different depths, which helps define the complexity of the aquifers, vertical groundwater gradients, and water quality at different depths. In many California basins, multiple completion wells have provided information that has changed basin management strategies.

It is also recommended that a multiple completion monitoring well be installed near the Goleta slough area. This well would serve as a sentinel for detecting seawater intrusion, whether from leakage across the More Ranch Fault or downward migration from surface waters.

5.3 Monitoring of Groundwater Quality

Water quality degradation is particularly problematic, because it is difficult to reverse and could require treatment of pumped groundwater. Water quality monitoring of groundwater appears to have been reduced over the past two decades. Although there does not appear to be any current threat of widespread water quality degradation, it is only with systematic monitoring that there is assurance that this continues.

Two steps are recommended to make water quality monitoring more robust. First, water quality sampling results from purveyors' wells should be obtained from the California Department of Public Health (DPH) every two years and added to the water quality database that was created in preparing this Plan. DPH keeps digital records for all water quality sampling of public water supply wells and provides these files upon request. Second, approximately ten additional water quality monitoring sites should be added using the dedicated monitoring wells and a sampling of private wells to create a geographic distribution of monitoring sites (potential wells are listed in section 7.2 *Appendix B – Additional Water Quality Wells*. It is recommended that water quality sampling be conducted every two years, with analyses of the typical general mineral suite. The recommended multiple-completion monitoring well near the Goleta slough should be sampled annually. When water quality results are received, they should be entered in the database and analyzed for changes. If there is significant deterioration in water quality in any of the wells being monitored, then the sampling frequency for that well should be increased.

5.4 Determination of 1972 Conditions for SAFE Ordinance

A groundwater management consideration for GWD is compliance with the District's SAFE Ordinance that sets 1972 groundwater levels in the Central subbasin as the baseline for determining a drought buffer (see section 1.3-*SAFE Ordinance*). The method for determining "1972 water levels" was not specified. Possible options include:

Method 1: All wells in the Central subbasin for which there was a water level measured in 1972 must remain higher than that level. This method does not allow any flexibility in groundwater management. For instance, if a new well was drilled in a different part of the basin to relieve pumping stress elsewhere in an area with low water levels, pumping of the new well could lower water levels below the 1972 level in the new area, which would trigger the SAFE Ordinance even if the strategy was best for the basin. In fact, this method could exacerbate undesirable effects in the basin by rigidly enforcing the pumping patterns of 1972; it is not recommended.

Method 2: Water levels measured in 1972 are used to calculate the amount of water that was in storage in 1972 in the Central subbasin. This storage volume would then be compared to the current amount of water in storage. In theory, this would be the most appropriate method, but it is problematic. As discussed in section 4.2.2-*Basin Storage*, there is a large range in aquifer properties, yielding a storage calculation with a large range. In addition, if changing groundwater elevations in wells are used to calculate changes in storage in the basin, the errors can be orders of magnitude in size depending upon whether the groundwater elevations were measured in confined or unconfined portions of the aquifers. Thus, this method is not recommended at this time.

Method 3: Water levels measured in 1972 are used together to create an average 1972 water level in the Central subbasin. Current average water levels from the same set of wells are used to compute a current average water level. This method requires that the same wells be used in 1972 and today. There are sufficient wells that meet the criterion of having 1972 measurements and current measurements. There is a choice of simply using all the wells that meet the criterion or using a subset of the wells that give an even geographic distribution. It is recommended that an even geographic distribution of wells be used.

Method 3, recommended here, is used in the two adjudicated basins closest to the Goleta Groundwater Basin. In the Santa Paula basin (Ventura County), a set of seven Key Wells are used to indicate the trend in overall groundwater elevations in the basin. In the Nipomo Mesa Management Area portion of the Santa Maria basin (Santa Barbara and San Luis Obispo counties), the average water level from a set of eight wells comprise the Key Wells Index which triggers various management events in the basin.

A consideration in determining 1972 groundwater levels is the time of year of the measurement. 1972 groundwater levels vary by more than 10 feet from the wet to the dry portion of the year. It is recommended that winter-spring groundwater elevations be used to determine average groundwater elevations. During this time, groundwater pumping is at its smallest and it is more likely that measurements represent static water levels (rather than pumping water levels) in the basin. In 1972, high groundwater elevations were generally reached in February or March. The recommended monitoring program in the basin would measure groundwater elevations in April and December (see section 5.1-*Semi-Annual Monitoring of Groundwater Elevations*), but current monitoring is conducted in June and December. For accuracy, similar months should be compared. Thus, in determining groundwater conditions for the SAFE Ordinance, June 1972 measurements should be compared to June measurements in subsequent years. This

should be considered an interim comparison – when new April measurements become available in the future, then the comparison should be between April 1972 levels and April levels in subsequent years.

The U.S. Geological Survey considered criteria for selecting wells for comparison to 1972 groundwater elevations (Kaehler and others, 1997). The criteria chosen by the USGS for selection of wells were, in approximate order of importance: (1) the well is completed in the Santa Barbara Formation or younger deposits; (2) the well is located in the Central subbasin; (3) the well has water-level data for calendar year 1972; (4) the well is currently measurable; (5) water level measurements were made when the well was not being pumped; (6) the well has perforated intervals similar to those of a well measured in 1972 that was later destroyed, inaccessible, or could not be located; and (7) the wells that are selected provide a broad areal distribution of wells within the Central subbasin.

The USGS chose 17 wells at 15 sites for their 1972 comparison. Substitute wells were included among the selected wells – meaning that some wells were used that had not yet been drilled in 1972, but were used as a surrogate for a nearby 1972 well that was no longer measurable. Some of the wells chosen by the USGS were problematic (Kaehler and others, 1997), being at more than 100 feet higher elevation than all other wells or being too close to faults. Equal geographic distribution was not achieved throughout the basin, especially in the important southeastern portion of the Central subbasin. There was an average drop in groundwater elevations of almost 22 feet from 1972 to 1996 at the 15 sites.

For this Plan, a more-even geographic distribution was sought. A total of 14 wells were available in the Central subbasin which had monthly water level measurements in 1972 and are currently being monitored. A discussion of how these wells were culled to seven Index Wells is included in the Appendix. Seven wells were chosen as Index Wells based on varied construction data, geographic distribution, and completeness of the historical record between 1972 and today (Figure 5-5, Table 5-1). All of the Index Wells have monthly water level measurements in 1972, allowing a comparison with current conditions for either the month of June (interim comparison) or the month of April (recommended future spring measurements). These wells vary in their depth completions, so they likely represent a composite of groundwater conditions in the main producing zones in the basin. Because the SAFE Ordinance targeted the basin as a whole rather than a specific aquifer, this approach is consistent with the intent of SAFE.

Groundwater elevations for the seven Index Wells were used to construct a historical record for groundwater elevations in June of each year (Figure 5-6). The annual value of the Index was calculated by averaging the groundwater elevations for that June in each of the wells. Gaps appear in the historical Index when at least one of the Index Wells had no reported measurements of groundwater levels. Figure 5-6 indicates that the Index rose above the 1972 value starting in 2002, and is currently more than 20 feet above the 1972 Index.

It is also helpful to know the low point in the Index during the low groundwater elevations in the drought of the late 1980s and early 1990s. To determine this, the Index was extended by reconstructing data in the missing years. To approximate a missing groundwater elevation measurement in a particular well, groundwater elevations in that

well and nearby wells with no missing measurements were cross-correlated for the periods when there were measurements in both wells. The resulting correlation was used to calculate the June groundwater elevation in the unmeasured well. This cross-correlation method is explained in more detail in the Appendix. The results of this reconstruction are shown on Figure 5-7. Figure 5-7 indicates that the low Index value occurred in 1989, with an Index value of -85 feet.

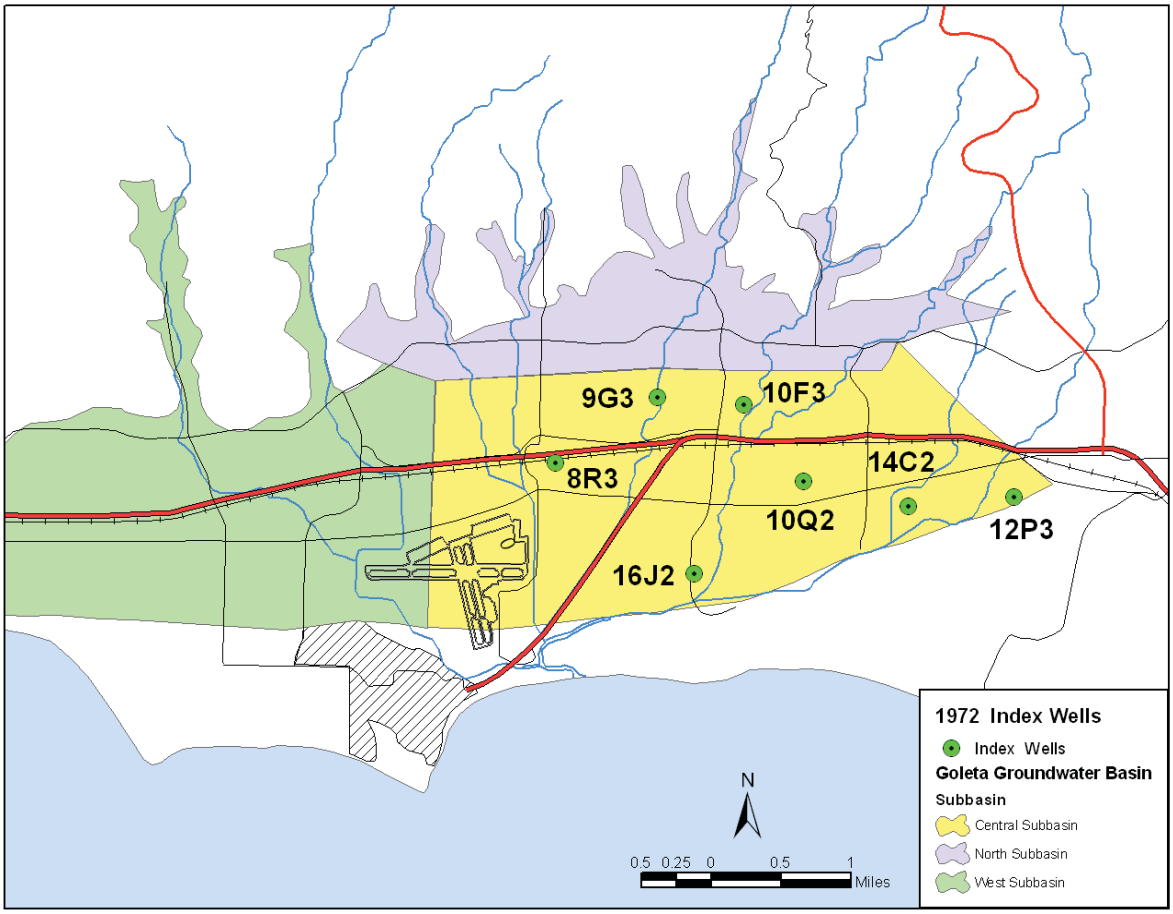

Figure 5-5. Location of Index Wells for determination of SAFE Ordinance 1972 groundwater elevations.

Well Number	*Name*	*Depth*	*Perforations*	*Years of Record*
04N28W08R03	Magnolia	106’	N/A	1941-current
04N28W09G03	GWD Berkeley #1	288’	168’-288’	1964-current
04N28W10F03	GWD Barquero	300’	150’-300’	1970-current
04N28W10Q02	Emmons	278’	62’-278’	1922-current
04N28W12P03	La Cumbre MWC #7	626’	115’-626’	1947-current
04N28W14C02	La Cumbre MWC #17	544’	275’-535’	1938-current
04N28W16J02	Ciampi #1	458’	160’-390’	1954-current

Table 5-1. Index Wells for determination of SAFE Ordinance 1972 groundwater elevations.

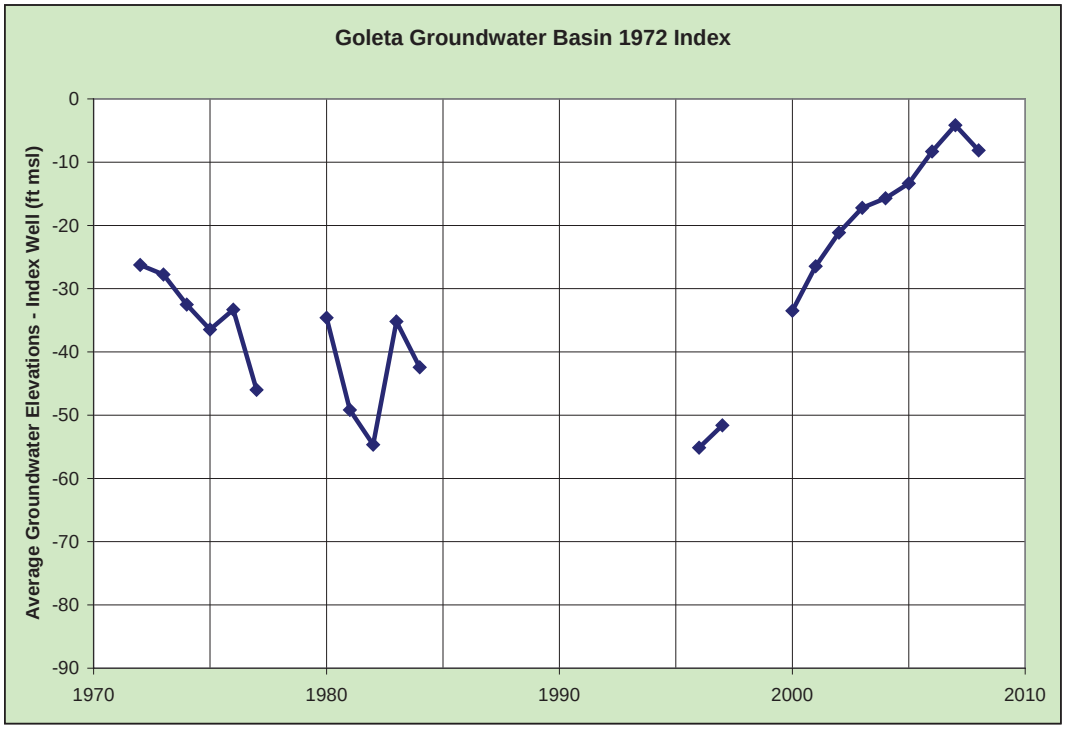

Figure 5-6. Average June groundwater elevations for the seven Index wells in the Central subbasin. Gaps in the graph represent years when at least one of the Index wells was not monitored for groundwater elevation.

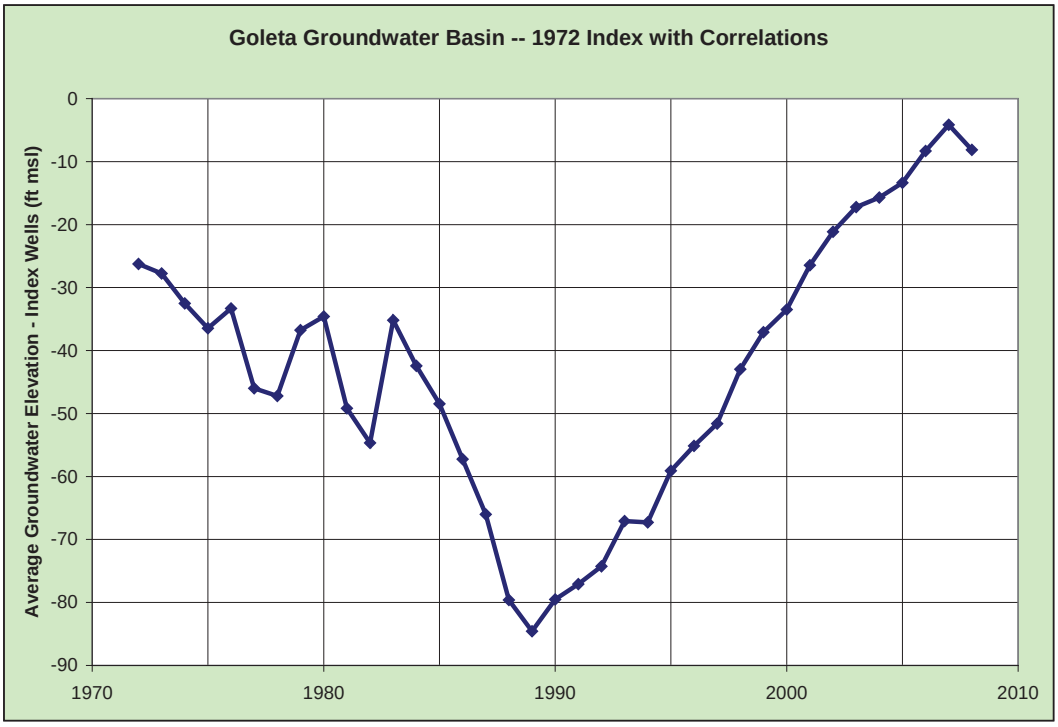

Figure 5-7. Average June groundwater elevations for the seven Index wells in the Central subbasin, with the data gaps of Figure 5-6 partially filled by correlating groundwater elevations between wells (see text for explanation).

5.5 Temporary Surplus

The term "Temporary Surplus" was used in the Wright Judgment as the amount of water that can extracted each year from the basin above the safe yield. There was no further discussion in Wright as to how to determine Temporary Surplus. The total amount of water that can be safely extracted from the Goleta basin consists of the safe yield, water stored by GWD and LA Cumbre, and any water that would otherwise be lost from the basin when groundwater elevations are too high. The safe yield and the amount of water in storage are discussed and calculated elsewhere in this Plan. Although groundwater elevations are currently quite high in the basin, it is not clear that any additional water is being lost from the basin as a result.

Thus, it is recommended that Temporary Surplus be considered to be the water placed in storage within the water rights of the Wright Judgment, with the rights to pump Temporary Surplus residing with the organization that stored the water. It is also recommended that the amount of water that would otherwise be lost from the basin because of high groundwater elevations be considered as zero at this time. If subsequent study indicates that there is such loss from the basin, the Basin Operating Group may find that this water can also be considered part of the Temporary Surplus until the high water condition ceases.

La Cumbre does not have any restrictions on when its portion of the Temporary Surplus water can be pumped. Because of SAFE extraction rules, GWD can pump its share of Temporary Surplus water either when groundwater elevations in the basins are above 1972 levels or when a drought on the South Coast causes a reduction in the District's annual deliveries from Lake Cachuma.

5.6 Interaction of Wright Judgment and SAFE Ordinance

The Wright Judgment and the SAFE Ordinance (which applies to GWD only) work together, with the Wright Judgment quantifying the amount of drought storage and SAFE specifying both the quantity and timing of storage and the rules for extracting water from the drought buffer. Groundwater storage under Wright is meant to augment the basin yield assigned to La Cumbre and GWD. The water can be stored at any time using both in-lieu recharge (groundwater pumping reduced by using other sources of water) and direct injection methods. There are no restrictions in the Wright Judgment as to timing and rate of extraction of the stored water. An annual accounting of water stored under Wright is maintained by La Cumbre and GWD.

SAFE is an operational plan for GWD that augments the storage quantified in the Wright Judgment. SAFE requires a certain amount of water to be stored by GWD when groundwater elevations are below 1972 levels (see section 5.4 – *Determination of 1972 Conditions for SAFE Ordinance*). Because of SAFE extraction rules, GWD can pump its stored water either when groundwater elevations in the basins are above 1972 levels or when a drought on the South Coast causes a reduction in the District's annual deliveries from Lake Cachuma.

	Wright Judgment	*SAFE Ordinance (GWD only)*
Annual Storage Commitment?	None	GWD requirement when groundwater elevations below 1972 levels
Limit on When Stored Water can be Pumped?	None	In years when groundwater elevations are above 1972 levels or when drought reduces Cachuma annual deliveries
Annual Limit on Quantity of Stored Water that can be Pumped?	None	None
Limit on Total Amount of Stored Water that can be Pumped?	Cannot exceed the amount stored by La Cumbre or GWD	None

Table 5-2. Differences between storage requirements for the Wright Judgment and the SAFE Ordinance.

As indicated in Table 5-2, groundwater storage under Wright is very simple – you can extract the amount that you have previously stored. It is similar to having a bank account. The SAFE Ordinance for GWD is quite different. It is not a bank account but a set of rules for storage and extraction – there is no accounting of the accumulated amount of water that is stored or extracted. The rules for SAFE are based on two criteria – whether groundwater elevations are below 1972 levels and whether Cachuma deliveries have been curtailed. SAFE creates a "Drought Buffer" by filling the basin up to 1972 levels; thus the buffer is defined not by the amount of water that was stored but by the increase in groundwater elevations that was achieved.

The SAFE Ordinance has worked well during the storage phase of the Drought Buffer. Groundwater elevations in the basin rose for almost 20 years and are currently well above 1972 levels (see Figure 5-7). However, there is an uncertainty in how it will function during certain types of shortage situations. Now that the State Project is an integral part of GWD's supplies, a disruption of those supplies would cause a shortfall in water for GWD customers. As long as Cachuma supplies are also reduced, the SAFE Ordinance works wells. However, the following situations are problematic:

1) If there is a drought in northern California but not in southern California (which has occurred in the recent past), then State Project deliveries would be reduced and Cachuma supplies may not be reduced. In this case, GWD could have insufficient supplies to fulfill its annual storage commitment, and would have to recharge the amount of the commitment at a later time when supplies are available. If the State Water deliveries are reduced severely, GWD may have insufficient supply for customers without pumping groundwater.
2) Similar to condition #1, except that State Water is reduced because of a natural disaster in northern California or a judicial restriction on deliveries.

From a groundwater management perspective, the situations outlined above are antithetic to conjunctive use of water supplies. The question then becomes whether these are realistic situations that GWD could face. Although droughts can occur in one part of the State and not the other, the duration and consequences of this scenario must be analyzed before the pumping restrictions in the SAFE Ordinance are considered problematic. GWD's Water Supply Management Plan, planned for completion in late 2010, is examining the probability and consequences of this scenario.

5.7 Groundwater Pumping Plan for Basin

Reduced pumping in the Goleta Groundwater basin over the past two decades, particularly by GWD, has allowed groundwater elevations in the basin to rise 20 feet above 1972 levels (see section 5.4-*Determination of 1972 Conditions for SAFE Ordinance*). 2008 groundwater elevations are at or very near the highest levels recorded in the basin in both the Index Wells and in other wells in all three subbasins. In fact, some wells are approaching flowing artesian conditions. Allowing groundwater elevations to rise further could cause unintended negative consequences, including leakage of groundwater to the surface in both existing and destroyed or abandoned wells. Artesian conditions in a wide area of the Oxnard Plain in 1998 caused wells to flow and abandoned wells to leak beneath roads and parking lots – one abandoned well flowed hundreds of gallons per minute from beneath the front yard of an urban house, creating neighborhood flooding for weeks until a drilling company could stop the flow.

Low groundwater elevations in the Index Wells occurred in 1989. If groundwater is pumped in the future such that groundwater elevations fall below 1989 levels (into uncharted territory), there are risks associated with that action. Risks include:

- Dewatering of fine sediments (such as clays) that serve as aquitards or are interbedded in the aquifer. This dewatering causes subsidence at the land surface, which can result in structural damage and even reversal of drainage directions. Subsidence is generally irreversible. Subsidence is common in overdrafted basins in California.
- Pulling in poor-quality water from surrounding sediments, bedrock, or along faults. Significantly lowered groundwater elevations in the coastal plain of Ventura County have induced the flow of deep oil-field brines into overlying aquifers.
- Although it appears that a bedrock high beneath the Goleta Slough protects the Goleta Groundwater basin from intrusion of seawater, the lowering of groundwater elevations at the coast could allow seawater to intrude through yet-unknown paths. If seawater was introduced into the aquifers, management of the basin would have to change significantly to ensure that no further landward movement of the salts occurred. Such management would likely include further limitations on future pumping.

Given the potential difficulties when groundwater elevations are allowed to rise too high or fall too low, there appears to be a range of groundwater elevations over which the basin should be managed (Figure 5-8):

1) Groundwater elevations between the low elevation in the Index Wells in 1989 and the 1972 elevations are within the Modified Operations range, and should be reserved for water shortage conditions (see section 5.8-*Drought Plan for Groundwater Pumping*). This range coincides with average groundwater elevations of -85 feet to -26 feet for the Index Wells.

2) Groundwater elevations between the 1972 and 2007 elevations for the Index Wells should be considered within the Normal Operations range for the basin. This range coincides with average groundwater elevations of -26 feet to -4 feet for the Index Wells.

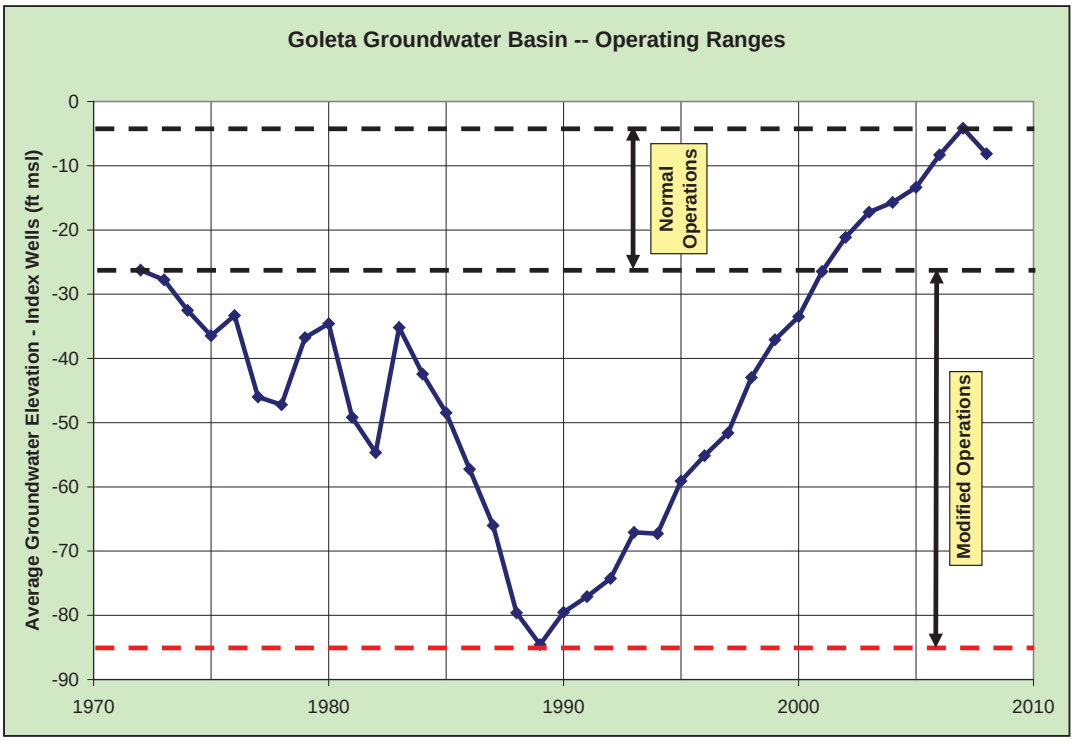

Figure 5-8. 1972 Index groundwater elevations for Normal Operations and Modified Operations in the Central subbasin.

La Cumbre is not as constrained in its operations as GWD is with the SAFE Ordinance, but the principles discussed here also broadly apply. If the basin is full, La Cumbre will also have no storage space for its share of Cachuma spill water. How the purveyors can work together on operating plans is discussed in section 5.11-*Basin Operating Group*.

A plan for the Modified Operations range is discussed in the next section. Within the Normal Operations range (Figure 5-8), the primary objectives should be retaining storage space for Cachuma spill water and reducing customers' costs. If groundwater elevations remain near the top of the Normal Operations range, there is less storage space for Cachuma spills which would otherwise flow to the ocean. Thus, storage space should be maintained by pumping groundwater in volumes close to the annual water right for the purveyors (approximately 2,000 acre-feet per year for GWD and 1,000 acre-feet per year

for La Cumbre), as long as groundwater elevations remain within the Normal Operations range (this assumes that appropriate water quality can be delivered to customers).

There may be times when pumping significant groundwater does not make sense (e.g., a wet year where there is an abundance of cheaper Cachuma spill water). If groundwater elevations were maintained near the bottom of the Normal Operations range prior to the spill year(s), then the rise in groundwater elevations caused by reduced pumping and storage of spill water is less likely to overfill the basin. Following the spill year(s), groundwater elevations can be lowered by resuming groundwater pumping.

5.8 Drought Plan for Groundwater Pumping

The combination of the Wright Judgment's groundwater storage component and GWD's SAFE Ordinance has established a large storage bank in the Central subbasin for droughts and other potential shortages of supply. The amount of groundwater La Cumbre can pump from the storage programs cannot exceed the amount of water it has stored in the basin (although it can pump additional water from its water right as long as the ten-year moving average of pumping does not exceed 1,000 acre-feet per year). La Cumbre will likely pump from its share of the groundwater storage when State Water deliveries are curtailed because of drought conditions in northern California or some other disruption to supply.

GWD's use of groundwater in storage is controlled by both the SAFE Ordinance and the Wright Judgment. The Wright Judgment only requires that there is storage available that was accumulated by either injection in wells or by deliveries of other supplies in lieu of pumping GWD water right. Specified effects of increased GWD pumping on other pumpers would also need to be mitigated. The SAFE Ordinance is more restrictive, limiting pumping of stored water in some circumstance (see discussion in section 5.6 – *Interaction of Wright Judgment and SAFE Ordinance*).

The length of a drought over which the buffer will provide adequate supplies depends upon whether the drought is restricted to northern or southern California, or is a State-wide drought. Over the past century or so, about half the droughts have been regional and half have been State-wide. The biggest stress on local water supplies occurs when both the State Water Project and Cachuma Reservoir are experiencing drought.

The effectiveness of drought protection in the basin can be estimated either using the expected decline in groundwater elevations when the stored water is pumped during a drought or using the annual volume withdrawn during a drought.

Method 1: During the 1986-91 drought, there was about an 8 foot per year decline in groundwater elevations in the Index Wells when about 2,500 acre-feet per year of groundwater were pumped above the current water right (2,000 acre-feet per year current GWD water right plus 2,500 acre-feet per year above that for a total of 4,500 acre-feet per year pumped by GWD – see Figure 3-21). Because the Modified Operations zone (between 1972 and 1989 groundwater elevations) encompasses a range of 59 feet of groundwater elevation for the Index Wells, stored water could be pumped for 7.4 years if groundwater elevations dropped 8 feet per year (Table 5-3). Pumping more or less than the 2,500 acre-feet per year of extra groundwater above current water rights would shorten or lengthen that

time, respectively. Now that State Water is available, that water could lengthen the effectiveness of drought protection by providing a supplemental supply to groundwater. In addition, water conservation, either through voluntary or mandated actions, could substantially lengthen the effectiveness of the Drought Buffer.

Method of Estimation	*Additional Drought Pumping (AFY)*	*Annual Decline*	*Drought Buffer (Yr)*
Drought 1986-91	2,500	8 ft/yr	7.4

Table 5-3. Method 1. Decline in groundwater elevations method to estimate the number of years that the Drought Buffer would have storage available in a drought. The details of the methods are discussed in the text. If an additional 2,500 acre-feet per year were extracted every year of a drought (equivalent to the drought of 1986-91), then the Drought Buffer would provide drought protection for 7 years.

The advantage of this first method of determining the length of time that the stored water would be effective is that the rate of decline was measured during a drought when two factors combined to decrease water levels – increased pumping and reduced recharge to the basin. This circumstance is likely to occur again in the next drought.

Method 2: In this method, the volume of stored groundwater is used and the annual withdrawal from storage determines the length of time that there would be an additional drought supply. Using the amount of water stored in the basin by GWD and La Cumbre (34,000 acre-feet) as the volume of additional water that could be pumped in a drought, the number of years that this stored water could be utilized depends upon the annual amount of pumping.

In this method, there is an extra 2,500 acre-feet per year pumped from the basin for illustrative purposes. A simple calculation is that it would take over 13 years to deplete the stored groundwater (Table 5-4). The missing element in this method is the concurrent reduction in recharge that occurs in the basin during a drought. Thus, Method #1 suggests that groundwater elevations would drop to near historical low levels in a little over 7 years, even though the stored groundwater was only partially used. The 7-year estimate is the most likely outcome, because it factors in the loss of recharge, as well as the additional 2,500 acre-feet per year of groundwater pumping.

Method of Estimation	*Additional Drought Pumping (AFY)*	*Drought Protection (Yr)*
Volume of Stored Water	2,500	13.6

Table 5-4. Method 2. Volume in stored water method to estimate the number of years that the stored water could supplement supplies in a drought. The details of the method are discussed in the text. It is likely that groundwater elevations would reach historical low levels before the stored water is exhausted.

Although droughts in historical experience in southern California have not lasted continuously for decades, there is certainly ample evidence from tree ring studies that longer droughts have occurred in the past several thousand years. If a longer drought occurred in California, water purveyors who pump groundwater would be in a much better position than those who rely solely on surface water supplies. It would be prudent to discuss some strategies for the Goleta Groundwater Basin if a very long drought occurred.

An extended drought might require pumping groundwater to below historical elevations. The potential risks of pumping groundwater below historical-low elevations are discussed in section 5.7-*Groundwater Pumping Plan for Basin*. In addition, it is also likely that production yields for individual wells will decrease as groundwater elevations decrease. This relationship was detected during the drought of 1986-1991, when production capacity from GWD's wells dropped by a third over a period of five years as groundwater elevations dropped to their historical low (GWD, 1988).

If pumping below the historical low groundwater elevations is contemplated in the future, increased monitoring would be necessary to detect potential problems in the basin. A rule of thumb for increasing pumping in a coastal basin is to move the pumping inland, away from the potential source of seawater intrusion. Equally important is to increase monitoring to detect any potential undesirable effects from the pumping. This monitoring should include increased water quality measurements near the area of pumping, periodic measurements to detect ground-surface subsidence, and increased water quality measurements near the coastline. If there are insufficient wells for monitoring, dedicated monitoring wells should be installed. The cost of new monitoring wells is small compared to future costs if the aquifer is damaged.

5.9 Confirm Basin Hydrogeology

Although there has been significant work done on understanding the basin, there are some aspects of the basin that are not well understood. For example, there are various opinions on the extent of confining layers in the basin. The location of confining conditions is important because in these areas the aquifers are protected from contamination from overlying sources, which could range from leaking gasoline tanks to intrusion of saline waters during sea level rises. It is recommended that a long-term plan be formulated to prioritize and address potential unknowns in the basin. Portions of the plan could then be implemented as funding or grants become available.

5.10 Shifting of Pumping Locations

It may be advantageous to shift the location of some pumping away from the southeastern portion of the Central subbasin (this may only be practical for GWD). Such a shift would move pumping from an area of the basin where there are lowered groundwater elevations (Figure 2-2) to areas with higher groundwater elevations. Such a shift would allow groundwater elevations to recover in the lowered areas, better balancing the basin and potentially preventing such problems as future water quality degradation in the areas of lowered groundwater elevations. It is recommended that the

groundwater model be used to evaluate the effect of relocating some pumping to different portions of the basin.

5.11 Basin Operating Group

There are a number of issues in the Goleta Groundwater Basin that require regular attention. These include:

- Coordination of plans for pumping and storage;
- Annual accounting for water in storage;
- Analysis and discussion of latest changes in Index Wells and Index;
- Determination of whether basin is in normal operating mode or drought mode;
- In a drought, annual reviews of amount of storage remaining and (later in a drought) planning for potential pumping below Drought Buffer;
- Review of water quality data to determine if pumping patterns are causing undesirable effects in the basin.

It is recommended that a Basin Operating Group of the staff of La Cumbre and GWD be formed to deal with these issues. It is probably sufficient that the committee meet semi-annually, with the frequency increased during a drought or if there is a problem in the basin. It is recommended that the chair of the group be rotated bi-annually between GWD and La Cumbre. This committee is not envisioned as an additional layer of governance in the basin – it would play an advisory role to basin purveyors and groundwater pumpers.

5.12 Global Climate Change Considerations

Modeling of long-term climate change is problematic at best. There is general agreement that California will be warmer, which has several potential impacts. The effect on precipitation patterns is not entirely clear. The U.S. Global Change Research Program (2009) predicts lower rainfall and longer droughts in the southwestern United States. Ongoing studies by the California Department of Water Resources (e.g., DWR, 2006) indicate that rainfall in southern California will not change significantly, with climate modeling indicating that precipitation will increase in wet years in the Sierra, but decrease in dry years. This modeling suggests that these effects will likely be less than a 10% swing in precipitation in either direction.

The four largest potential effects for the Goleta Groundwater basin are from higher overall temperatures:

- Higher temperatures will increase evapotranspiration and likely cause an increase in outside water use and crop irrigation;
- Periodic drought periods may be longer in duration, affecting recharge to the groundwater basin, runoff into Cachuma Reservoir, and water availability from the State Water Project;
- A projected sea level rise of three to six feet during this century would potentially allow the sea to encroach farther up the Goleta Slough and extend

the estuary over portions of the West and Central subbasins. This encroachment will likely occur over the portions of the basin that are under confined conditions – that is, there are low-permeability sediments that separate the estuary at the surface from the drinking water aquifers at depth. Thus, it is unlikely that this encroachment would allow saline water into the aquifers. However, such encroachment would require additional monitoring wells to be installed to ensure that downward percolation of saline waters does not occur. Preventing the encroachment of the ocean onto coastal plains around the world will be a major effort – it will be expensive and disruptive. It is not known at this time if the Goleta Slough area would be protected from encroachment in the future as part of this global effort.

- More of the winter precipitation in the Sierra Nevada will fall as rain instead of snow. Because Sierran dams are partially operated as flood control facilities, some of the winter rain runoff will have to be released from the dams to preserve storage space for later storm events, effectively reducing winter storm capture and water available for the State Water Project.

The California Department of Water Resources is currently evaluating how reservoir operations can be modified to respond to these changes. DWR updates its State Water delivery probability curves regularly; as global climate change is integrated into these curves, the recipients of State Water in the Goleta Groundwater Basin should use these updates to modify their own supply projections.

5.13 Use of Recycled Water

Recycled water is becoming increasingly an important supply of water in California as treatment plants have upgraded their treatment processes, recycled water has become more accepted by the public, and water has become scarcer in the State. Unlike other sources of water, the availability of recycled water is fairly stable through drought and wet periods – thus, it is considered to be the most reliable source of water. There are more-strict State requirements for use of recycled water than for other water sources. The requirements become increasingly complex as the recycled water is used in situations where there may be contact with drinking water supplies or edible crops. Irrigation of landscape plants is the least restrictive use. The irrigation of food crops generally requires more advanced treatment, with many produce buyers now requiring a source water audit and regular testing of any type of applied water and of the produce itself.

When the recycled water is used for direct recharge of drinking-water aquifers either through surface spreading basins or injection wells, both the State Department of Public Health and the Regional Water Quality Control Boards are involved in permitting of facilities. One of the important permitting issues is whether there is sufficient travel time of the recharged water between the point of recharge and nearby drinking-water wells (the anaerobic conditions in the aquifer kill pathogens) as an additional safety factor in using the recycled water.

The GWD has planned for water recycling since at least 1980. In 1995, the GWD developed a water recycling project in cooperation with the Goleta Sanitary District. The recycled water project is currently delivering approximately 1,000 acre-feet per year to

the University of California Santa Barbara campus, several golf courses, and other irrigation users, most of whom were previously using the GWD potable water for irrigation. The GWD anticipates that recycled water use will increase in future years (GWD, 2008). It was recognized that recycled water has the greatest long-term delivery reliability of any water source because the amount of wastewater flowing into the Goleta Sanitary District even in severe drought conditions far exceeds current recycled water demand.

The least expensive and most accepted use of recycled water is for direct delivery to irrigation users. Recycled water is also used for recharge of groundwater basins, particularly in southern California. However, the increased cost of the advanced treatment necessary for permitting of such facilities precludes its use except when other sources of water have been fully utilized. Consideration of aquifer recharge using recycle water is not recommended at this time for the Goleta basin, especially when expansion of direct use for irrigation is possible.

5.14 Water Balance

A water balance for the basin is an accounting of the inputs and outputs of water to the basin. Examples of inputs to the basin include recharge from percolation of rainfall, percolation from streams, percolation of applied irrigation water, subsurface flow from adjoining bedrock areas and groundwater basins, artificial recharge, and subsurface inflow of salt water from the ocean. Outputs include pumping, subsurface outflow to adjoining basins and/or the ocean, discharge to streams or lakes (when groundwater is at ground surface), and evapotranspiration (when groundwater is near ground surface). The yield of a groundwater basin is the amount of pumping that can occur without creating conditions where outflow exceeds inflow to an extent that undesirable effects occur in the basin. Thus, a water balance can be used to approximate the amount of water that can be safely pumped (i.e., yield of the basin). The yield of a basin can change as inputs and outputs change with time, so it is important to regularly revisit the water balance.

Some of the components of a water balance can be measured, whereas many others can only be approximated. An approximate water balance was constructed to determine the water rights in the basin under the Wright Judgment. In addition, a water balance was required to construct the groundwater model (although some of the inputs and outputs are calculated internally by the model when it is calibrated). It is recommended that the components of the water balance be categorized using measured and model results, with the objective being to determine the various components with more accuracy and fine-tuning the yield of the basin determined during the Wright litigation.

5.15 Groundwater Modeling

The Goleta Groundwater Basin groundwater model was to evaluate potential locations for new wells (see section 5.10-*Shifting of Pumping Locations*) and effects of drought pumping. The model is currently being reviewed by GWD. For future use of the model, it is recommended that procedures be put in place for model maintenance and modeling runs. The procedures should include who would be responsible for maintaining and operating the model (in-house or consultant), whether other organizations could use

the model, and how would it be modified in the future when additional information is known about the basin.

5.16 Tracking Contamination Threats

As discussed in section 3.1.2-*Current Groundwater Quality*, there are number of sites of soil and shallow groundwater contamination in the basin. Although most of the sites overlie areas of the aquifers under confining conditions and the contamination is unlikely to leak into the underlying aquifers, it is recommended to review the contamination sites annually. This can easily be done on the State Water Resources Control Board's GeoTracker website. Of particular interest would be sites near drinking-water wells. If a contamination site is identified near one of these wells, it is recommended to make contact with the Regional Board and express an interest in following developments in the cleanup operation. If a site is found in the unconfined portion of the aquifer (near the foothills) and contaminants have been found within groundwater, there should be immediate contact with the Regional Board and cleanup proposals be reviewed with the Board to ensure that the contamination doesn't spread in the aquifer.

5.17 Update of Plan

Regularly-scheduled updates to this Groundwater Management Plan are both prudent and required for State funding of groundwater grants. Other plans that are required by the State (e.g., Urban Water Management Plan) have a five-year update schedule, so it is recommended that this Groundwater Management Plan also have a five-year update schedule. Updates should include current groundwater level and groundwater quality data, groundwater pumping data, groundwater storage data, and any modifications to groundwater operating plans. Updating the Plan should be much less effort than the initial writing of the Plan. The updates should be adopted by GWD and La Cumbre.

5.18 Changes in Rules and Regulations

The interaction of the SAFE Ordinance with Wright Judgment storage rules appears to allow complementary use of these storage programs. If, however, there is a conflict in the future use this stored water, the SAFE Ordinance may need to be modified. This would require a vote of the public in an election.

5.19 Tasks and Timeline

The following items were proposed in this Plan as future tasks:

Section: *Semi-Annual Monitoring of Groundwater Elevations*

Change months for groundwater elevation monitoring – The proposed change in the date of spring measurements is already being implemented.

Ensure nearby wells are not pumping during groundwater elevation monitoring – This procedure is currently being discussed with the U.S. Geological Survey.

Section: *Additional Monitoring Points*

Add monitoring wells in the basin – This recommendation should be implemented over the next several years. It is recommended that the wells be installed using grant funding, with a focus on AB 303 funding.

Section: *Monitoring of Water Quality*

Download DPH data every two years – This recommendation should be implemented starting in 2011 and every two years thereafter.

Additional water quality monitoring – The choice of which additional existing wells to monitor should be made prior to 2011, with data collection in 2011 and every two years thereafter. Two or three wells should be chosen from the list provided in section 7.2 *Appendix B – Additional Water Quality Wells.*

Section: *Determination of 1972 Conditions for SAFE Ordinance*

Calculate Well Index – Calculate well index every year following acquisition of spring water levels.

Section: *Confirm Basin Hydrogeology*

Devise long-term plan – Devise a long-term plan to better understand the basin hydrogeology. This long-term plan should be completed prior to the next update of the Groundwater Management Plan.

Section: *Shift of Pumping Locations*

Determine site for two or three new wells – Following the analysis using the groundwater model, plan for next well sites. Planning should be accomplished before the next Plan update.

Section: *Basin Operating Group*

Implement Basin Operating Group – Within one year of adoption of this Plan, implement first group meeting.

Section: *Water Balance*

Better-define water balance – This task is ongoing, with improvements being incorporated from modeling experience.

Section: *Groundwater Modeling*

Determine procedures and operation – Procedures should be put in place for future model maintenance and modeling runs. This planning should be completed within two years of adoption of this Plan.

Section: *Tracking Contamination Threats*

Review contamination sites – Review GeoTracker contamination data once a year.

Section: *Update of Plan*

Update Plan regularly – Update this Plan every five years.

Section: Changes *in Rules and Regulations*

SAFE Ordinance drought trigger – If the GWD's Water Supply Management Plan determines that it would be prudent to add additional triggers for use of the Drought Buffer (e.g., shortage of State Water), review whether GWD should attempt to modify the Ordinance.

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7 Appendices

7.1 Appendix A – Determination of 1972 Index Wells for SAFE Ordinance

A total of 14 wells were available in the Central subbasin which had monthly water level measurements in 1972 and are currently being monitored. The geographic distribution of these wells is shown in Figure 7-1. Groundwater elevations for these wells were used to construct a historical record for groundwater elevations in June of each year (Figure 7-2). The annual value shown on the graph was calculated by averaging the groundwater elevations for that June in each of the wells. Gaps appear in the historical record when at least one of the wells had no reported measurements of groundwater levels in that year.

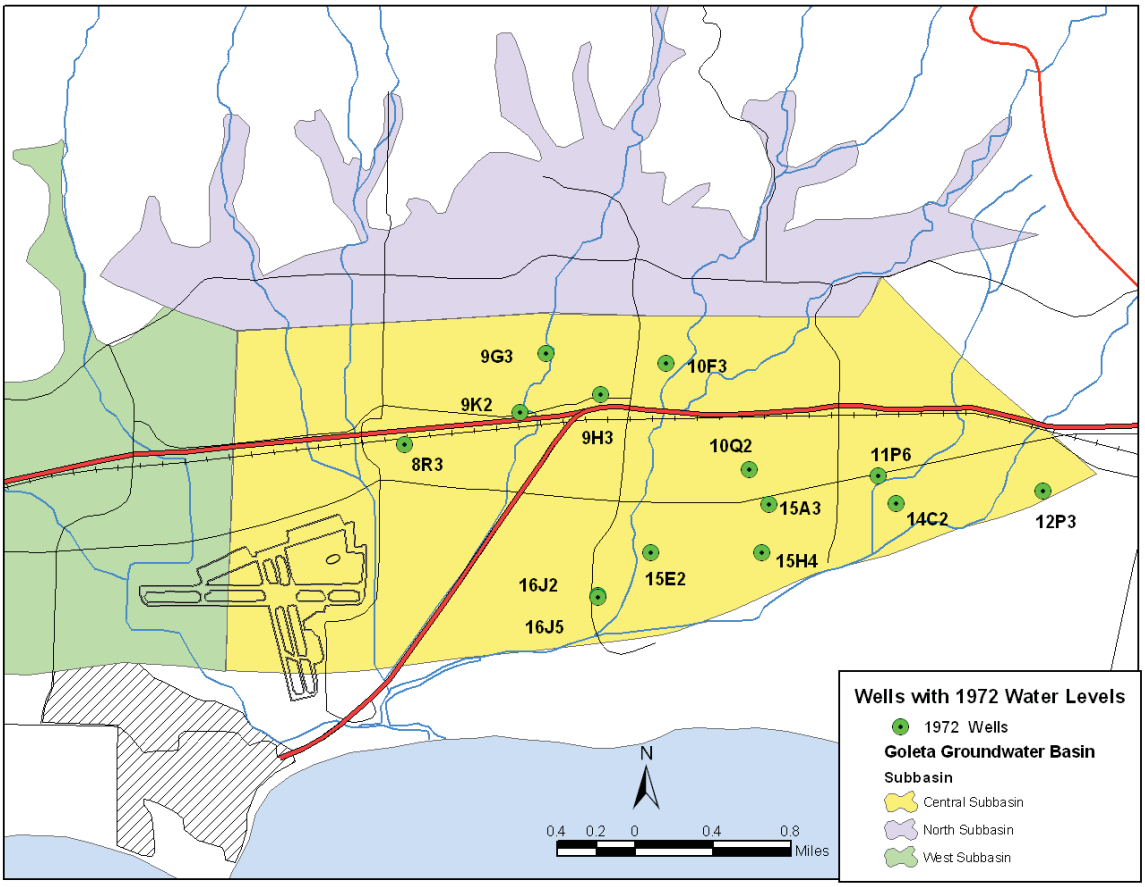

Figure 7-1. Map of wells for which there were monthly groundwater elevation measurements in 1972 and for which there is current monitoring.

To determine what the average looked like in the years where there was at least one missing water level measurement, the average curve was extended by reconstructing data in the missing years. To approximate a missing groundwater elevation measurement in a particular well, groundwater elevations in that well and nearby wells with no missing

measurements were cross-correlated for the periods when there were measurements in both wells. A least squares linear analysis of the data was then performed, with a trend line calculated. If the R^2 (coefficient of determination, a value of one being the most reliable line fit) of the line fit was higher than 0.8 (e.g., Figure 7-3), then the resulting formula from the line fit was used to calculate the June groundwater elevation in the unmeasured well. This technique filled out the missing data and allowed average groundwater elevations to be calculated for each year (Figure 7-4). Figure 7-4 indicates that the low groundwater elevation between 1972 and 2008 occurred in 1989, during the drought of the late 1980s and early 1990s.

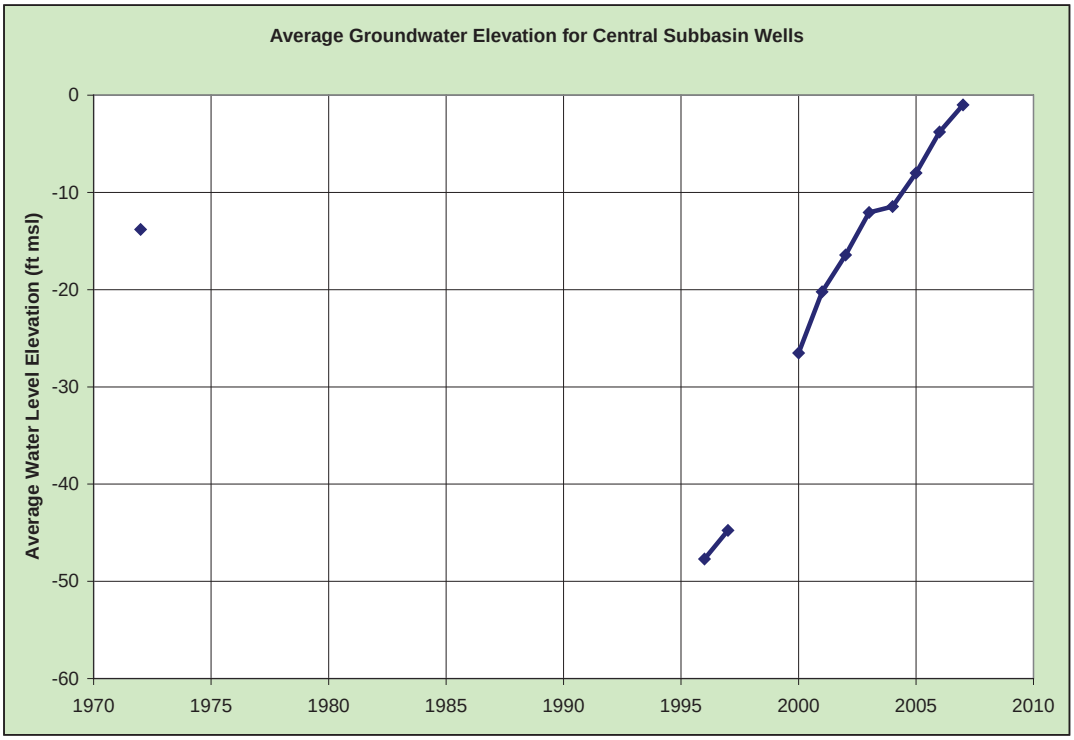

Figure 7-2. Average June groundwater elevations from all wells for which there were monthly groundwater elevation measurements in 1972 and for which there is current monitoring. In years for which no groundwater elevations are shown, at least one of the 14 wells did not have measurements in that year.

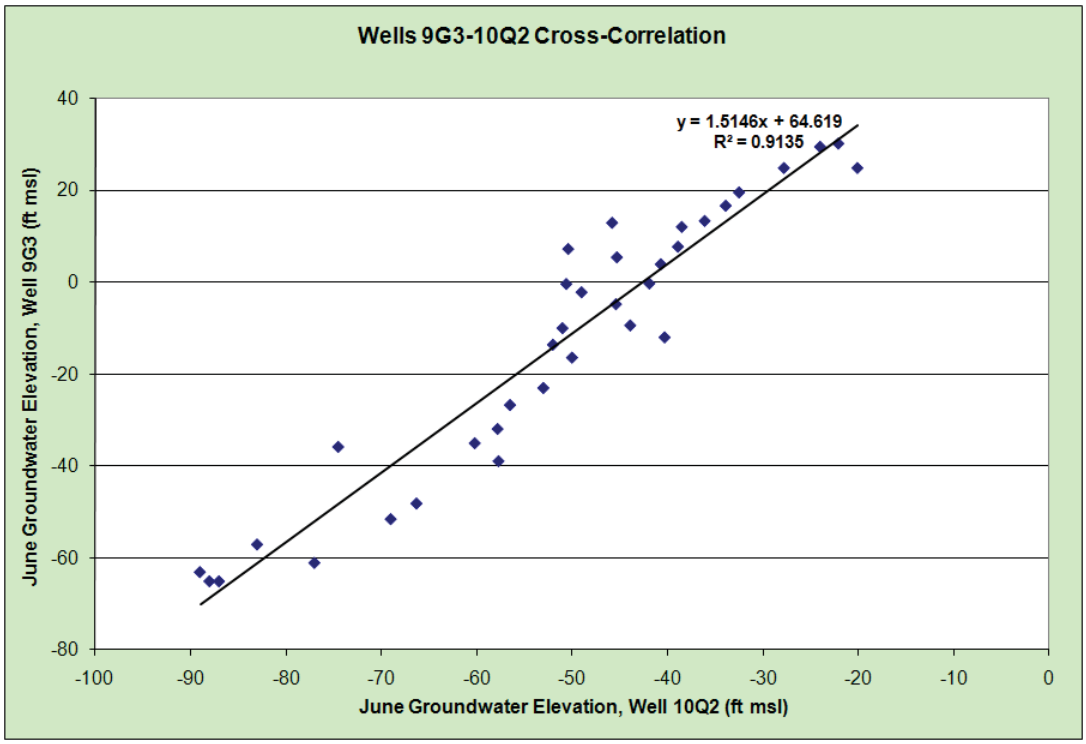

Figure 7-3. Method used to cross-correlate water level measurements between two 1972 wells. Each data point represents a single year – the June groundwater elevations from wells 10Q2 and 9G3 are plotted using the x axis and y axis, respectively. The line represents the best least-squares fit of the data points. The correlation factor (R2) and the equation for the correlation line are also shown. The equation is then used to calculate a missing measurement when only one well was measured in June of any year.

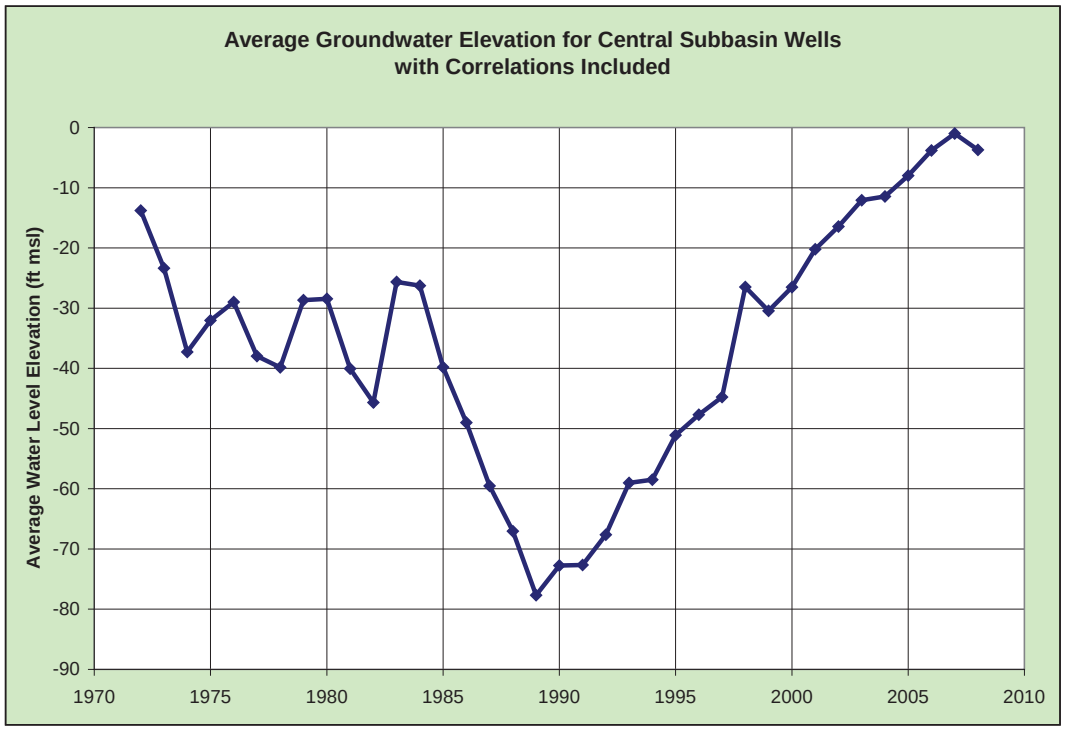

Figure 7-4. Average June groundwater elevations of the 14 wells, with missing data filled in by cross-correlation with nearby wells.

An option for determining where current groundwater elevations are relative to 1972 elevations is to use all 14 wells. The difficulty in doing so is that a significant number of wells need to be cross-correlated, and more importantly, there must be continuous monitoring in the future for all 14 wells for comparison with 1972 levels. Wells do not last forever, so as the 14 wells are destroyed in the future, there must be a replacement well installed that has the same construction (e.g., depth, perforated intervals) as the destroyed well. This may require the purveyors to install a dedicated monitoring well at the site of the destroyed well if the well owner doesn't replace the well in an identical fashion.

To reduce the number of wells that are averaged to determine 1972 groundwater elevations, a geographic spread of 1972 wells was selected that represent both shallow and deep wells (Figure 7-5). These seven Index Wells require less cross-correlation than using all 14 wells and it will be easier to maintain these well sites in the future. To determine the effect of selecting a sub-group of Index Wells, correlated curves for all 14 wells and for the seven Index Wells are compared in Figure 7-6. The two curves have identical shapes, with the Index Well curve shifted downward by three to ten feet.

Individual wells that make up the 1972 Index are plotted along with the Index Well curve in Figure 7-7 to determine if any one well or one measurement is overly influencing the Index Well curve. All the Index Wells have the same curve shape as the overall Index, even though absolute groundwater elevations vary across the basin, indicating that the Index fairly reflects groundwater elevations in the overall Central subbasin.

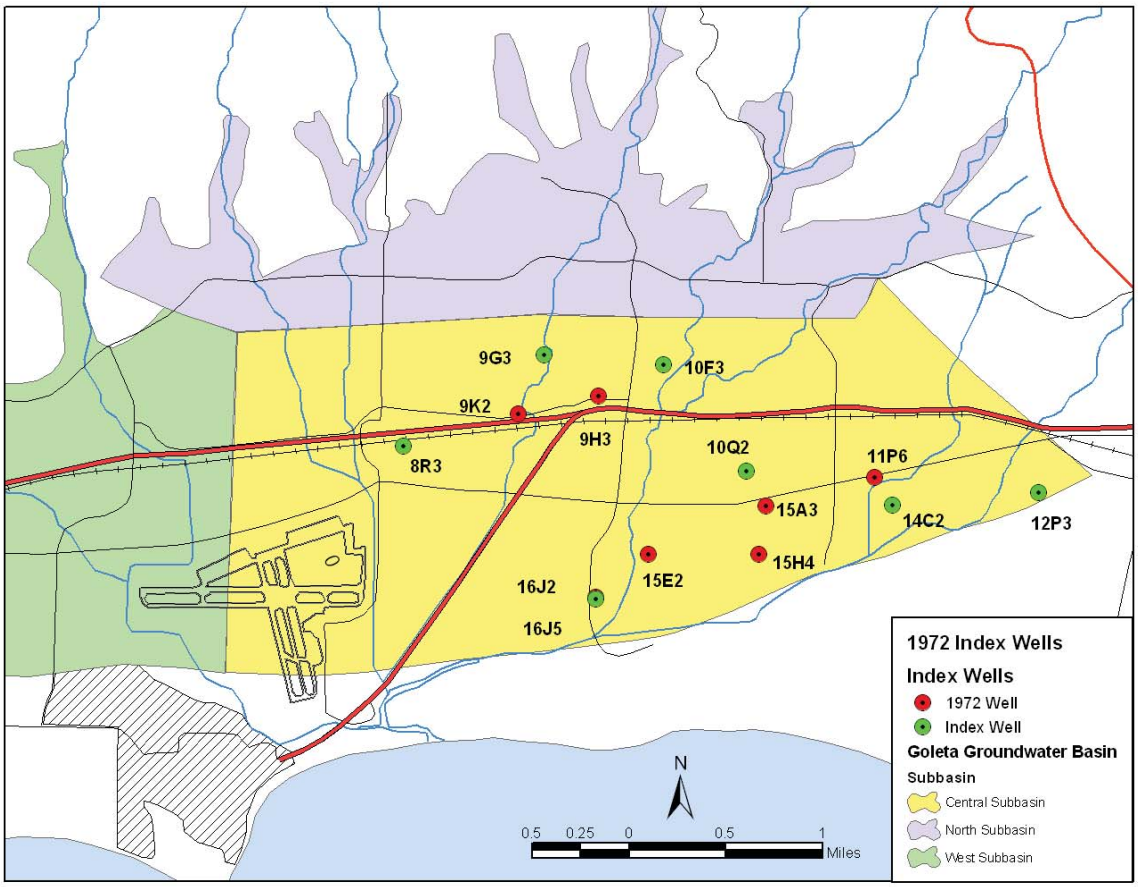

Figure 7-5. Wells selected as Index wells from the larger population of wells that have monthly 1972 water level measurements and are currently monitored.

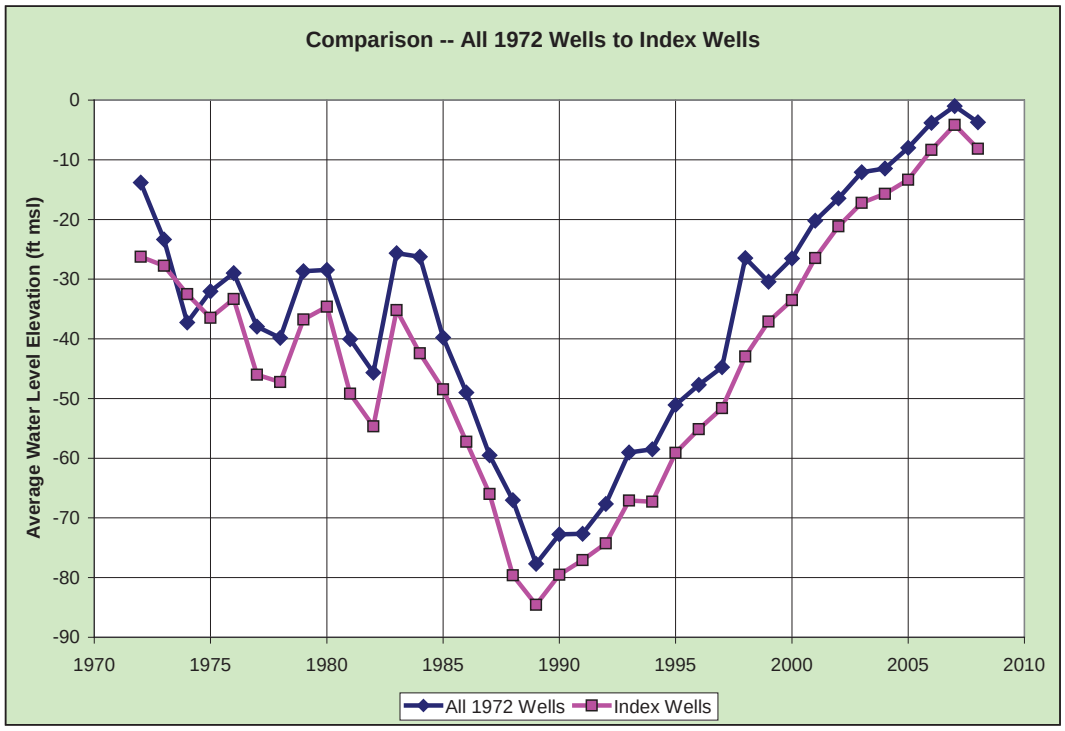

Figure 7-6. Average June groundwater elevations using all 14 of the 1972 wells and using a subset of seven of the wells (Index Wells). The two methods have the same shape of curve, with the Index Well curve shifted downward by a few feet.

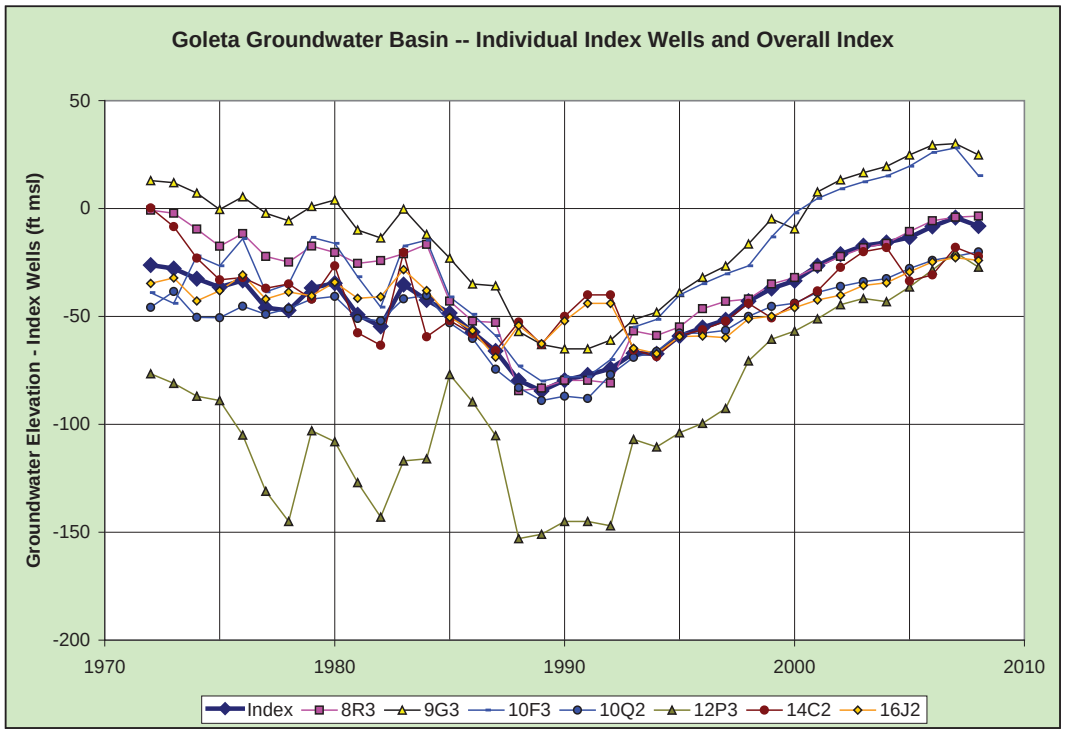

Figure 7-7. Average June groundwater elevations for all seven Index Wells (thick line) and June groundwater elevations for each of the Index wells. Some data points are cross-correlated with nearby wells as discussed in the text. The groundwater elevation curve for individual wells is the same shape as the Index curve, with absolute elevations varying by location in the Central subbasin.

7.2 Appendix B – Additional Groundwater Quality Monitoring

Groundwater quality monitoring is currently conducted by GWD and La Cumbre as part of their California Department of Public Health permit to deliver drinking water. This monitoring constitutes a backbone of the recommended groundwater quality network. This backbone monitoring does leave un-monitored gaps in the basin, especially near the coastal portions of the basin (Figure 7-8).

It is recommended that additional groundwater quality monitoring points be added sequentially both for the BMO wells and a well in the West subbasin (Figure 7-8, Table 7-1). The wells are listed sequentially so that wells can be in stages. An annual general minerals analysis is recommended.

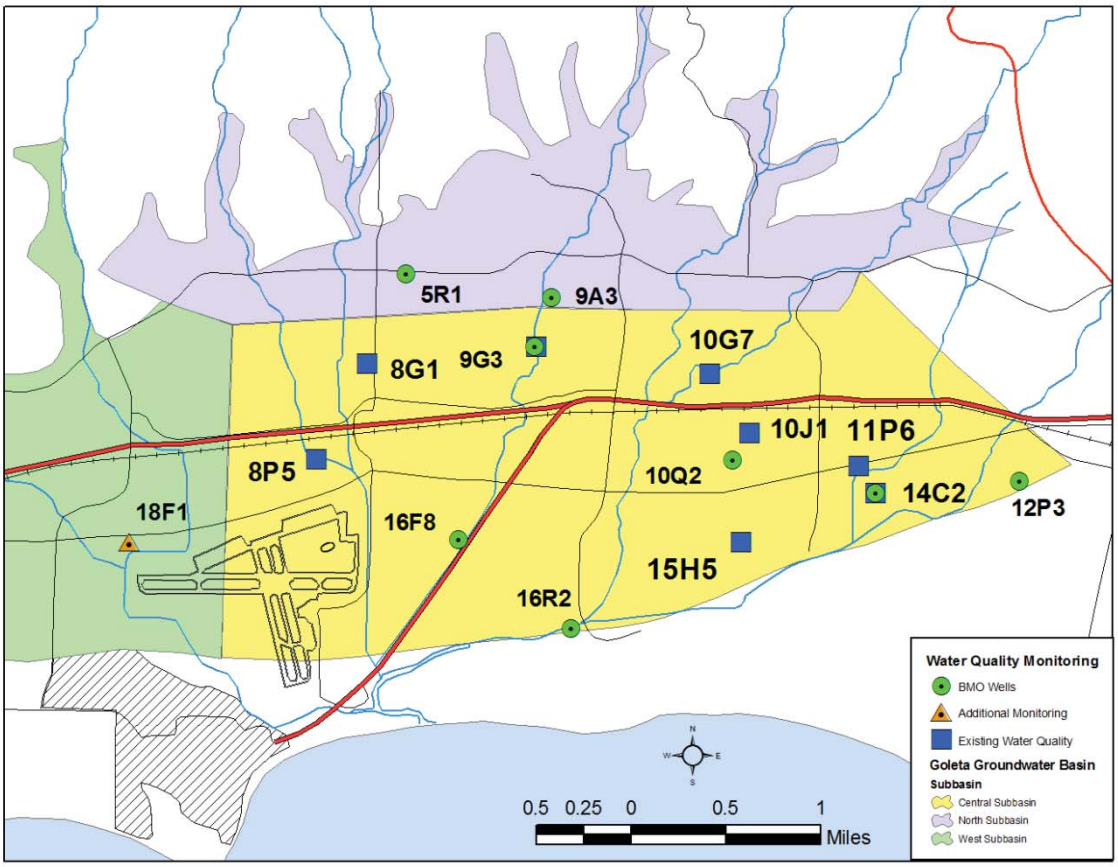

Figure 7-8. Wells where water quality is currently being monitored. BMO wells that are not currently monitored are recommended for inclusion in the water quality monitoring program, as is a well in the West subbasin.

State Well Number	*Name*	*Frequency*	*Analyses*
4N/28W-12P3	La Cumbre #7	DPH[15]	DPH
4N/28W-16R2	More Mesa #1	Annual	General Min
4N/28W-16F8	Mission #1	Annual	General Min
4N/28W-18F1	Bishop #4	Annual	General Min
4N/28W-5R1	Martini	Annual	General Min
4N/28W-9A3	Mulligan	Annual	General Min
4N/28W-10Q2	Emmons	Annual	General Min

Table 7-1. Recommendations for additional water quality sampling in the Goleta basin. The wells are listed in priority order from top to bottom, so that the wells can be added in stages.

[15] This drinking water well is currently monitored for water quality under requirements of California Department of Public Health – the results of the monitoring should be included in the future in the water quality database for the basin.

Goleta Water District

BOARD OF DIRECTORS

William Rosen – President

Jack Cunningham – Vice-President

Bert Bertrando – Director

Lauren Hanson – Director

Larry Mills – Director

John McInnes – General Manager

Regular Meeting Minutes

Action Summary

Tuesday, May 11, 2010

5:30 P.M.

Goleta Water District Headquarters
Board Room
4699 Hollister Avenue, Goleta, CA 93110

Agendas, Supplemental Materials and Minutes of the Goleta Water District Board of Directors meetings are available on the internet at www.goletawater.com

5:30 p.m. .....Convened to Regular Session

Roll call – President Rosen; Vice President Cunningham; Director Bertrando; Director Hanson; Director Mills.

ALSO PRESENT WERE: John McInnes, General Manager; George Eowan, Assistant General Manager; Mike Kanno, Operations Manager; Greg Paul, Water Treatment Superintendent; Matt vanderLinden, Civil Engineer; Carrie Bennett, Engineering Technician; Becky Cantrell, Acting Administrative Manager; Fran Farina, General Counsel; Beth Horn, Assistant Board Secretary; Dr. Steven Bachman; Kate Rees, Manager of Cachuma Operation & Maintenance Board (COMB) and the Cachuma Conservation Release Board (CCRB); Susan Basham, Counsel with Price, Postel & Parma; Eva Turenchalk, Director Goleta Sanitary District.

CONSENT AGENDA

CA-1) **MINUTES OF THE BOARD OF DIRECTORS APRIL 13, 2010 AND APRIL 22, 2010 MEETING**

CA-2) **GENERAL COUNSEL'S MONTHLY REPORT**

CA-3) **GOLETA WATER DISTRICT'S MONTHLY INTERIM FINANCIAL STATEMENTS**

CA-4) **GOLETA WATER DISTRICT'S MONTHLY ACCOUNTS RECEIVABLE SUMMARY REPORT**

CA-5) **GOLETA WATER DISTRICT'S MONTHLY CASH DISBURSEMENT REPORT**

CA-6) **GOLETA WATER DISTRICT'S MONTHLY INVESTMENT REPORT**

CA-7) **LAIF AUTHORIZED SIGNATURES**

The Board did not take any action on the consent agenda items and the items will be considered by the Board at an adjourned meeting on May 13th.

PUBLIC INPUT: Speakers on this item were Jack Ruskey, Roberta Weissglass, Jeff Hanson and Michael Petretta.

5) APPEAL BY SANTA BARBARA WILDLIFE NETWORK

Ms. Bennett presented a report on the Santa Barbara Wildlife Care Network appeal as allowed under Chapter 8.30 of the Goleta Water District Code concerning the release of 100% of the associated Letter of Credit in advance of the required 1-year warranty period.

Joann St. John, Capital Campaign Chair of the Santa Barbara Wildlife Care Network, gave a presentation regarding their organization's appeal process.

Speaker on this item was Jim Marino.

A motion was made by President Rosen, seconded by Director Bertrando, to approve the appeal by Santa Barbara Wildlife Network subject to the applicant signing an agreement that in the event of a failure, they would be fully liable to pay for a repair or if the District does the repair work, the applicant would pay the District. The motion failed by the following roll call vote:

Ayes: 2 – Directors Bertrando, Rosen

Nay: 3 - Directors Cunningham, Hanson, Mills

6) GROUNDWATER MANAGEMENT PLAN

Dr. Steven Bachman presented a report on the final 2010 Groundwater Management Plan.

a) A motion was made by Director Bertrando, seconded by Director Hanson, to adopt and approve the final 2010 Groundwater Management Plan. The motion carried by the following vote:

Ayes: 5 – Directors Bertrando, Cunningham, Hanson, Mills, Rosen

b) A motion was made by Director Bertrando, seconded by Director Hanson, to approve amendment No. 1 to the Agreement for consulting services with Dr. Steve Bachman to increase the not to exceed contract amount by $4,500 and authorize the Assistant General Manager to execute the Amendment. The motion carried by the following vote:

Ayes: 5 – Directors Bertrando, Cunningham, Hanson, Mills, Rosen

7) SCADA

a) Mr. Paul and Mr. Kanno presented a report on the District's System control and Data Acquisition (SCADA) System.

b) A motion was made by Director Bertrando, seconded by Director Hanson, to accept the report and authorize the General Manager to execute the agreement as modified with Tesco Controls,

19) GENERAL MANAGER'S MONTHLY REPORT

Received a report from Mr. McInnes for April, 2010.

20) FUTURE MEETING AGENDA ITEMS

This item will be considered by the Board at an adjourned meeting on May 13th.

8:56 p.m.....Meeting adjourned.

DATED: 6/9/10

MINUTES PREPARED BY:

Beth Horn
BETH HORN, ASSISTANT BOARD SECRETARY

DATE APPROVED: 6/8/10

ATTEST:

Beth Horn
BETH HORN, ASSISTANT BOARD SECRETARY

WILLIAM C. ROSEN, PRESIDENT

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Wright Judgment

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Total

Recorded
Official Records
County of
Santa Barbara
Kenneth A. Pettit
Recorder
8:12am 20-Nov-89

378

RG 37

RECORDING REQUESTED BY &
WHEN RECORDED RETURN TO
Law Offices of Wayne Lemieux
Dorothy Lou Crisp, Esq
200 N. Westlake Blvd
Suite 102
Westlake Village CA
91362

FILED
SUPERIOR COURT
SANTA BARBARA

NOV 17 1989

KENNETH A. PETTIT, County Clerk-Recorder

By: Alicia Hubbard

ALICIA HUBBARD, Deputy Clerk-Recorder

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SANTA BARBARA

MARTHA H. WRIGHT, et al., Plaintiffs, vs. GOLETA WATER DISTRICT, et al., Defendants.	CASE NO. SM57969 (FORMERLY 101485) AMENDED JUDGMENT
AND RELATED CROSS ACTIONS	
CITIZENS FOR GOLETA VALLEY, INC., Intervenors.	

THIS MATTER CAME ON REGULARLY FOR TRIAL on April 28, 1989 in Department 2 of the above-entitled Court located at 312 East Cook Street, Santa Maria, California, the Honorable Zel Canter, Judge, presiding. The parties appeared by their attorneys as set forth herein. The Court having considered the evidence presented by the parties and proof having been made to the satisfaction of the Court based upon the following findings:

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NOW THEREFORE IT IS ORDERED, ADJUDGED, AND DECREED as follows:

PRELIMINARY

1. Introduction

This action was filed on October 3, 1973 to obtain a determination of the water rights of certain property owners overlying the North-Central Basin of the Goleta Valley. Thereafter, the Goleta Water District filed a cross-complaint against additional property owners to obtain a broader adjudication of the Basin. The judgment of the trial court was appealed and the case was remanded.

2. Appearances

The parties have appeared by and through their attorneys of record as follows: Steven A. Amerikaner, City Attorney, and Richard A. Cross, Assistant City Attorney for the City of Santa Barbara; Woodrow D. Smith and Jerry R. Cahan, Attorneys for the Southern California Gas Company; Griffith & Thornburgh and L. Donald Boden, Attorneys for La Cumbre Mutual Water Company; Hatch & Parent and Stanley M. Roden, Scott S. Slater, Attorneys for Gordon T. McCloskey, David E. Giorgi, Lowengart Trust, Austin Trust, Bottiani Properties, San Lorenzo Nursery Co., Donald Cavalletto, Walter S. and Jean K. Daniels, Edward Cavaletto, Mike Cavaletto, Harold Frank, Larkin Manner No. 3, David E. Giorgi, Deborah Sue Pegg (Estate of Ruth Garrett), Santa Barbara Elks Lodge No. 613, David D. Van Rees, Jr., Margit C. Van Rees, Perry Austin, Santa Barbara Metropolitan

Transit District, John E. and Amet Newland, Harold Frank, Estate of Ruth Garrett, First Church of Christ, Turnpike Road Church of Christ, John Forte, Rudolph Mosel/Bremer, David R. and Mable Wells, Edward V. and Rose E. Waters, James F. and Fleeta McKone, Goleta Business Park, University Properties, Bottiani Properties, Bar Investors, Wayne Graham, Bermant, R. H. Pollard and John A. Langford, Manzo Investment, Peterson Trust, Cal-Real North, Patterson Professional Plaza, George Cavalletto and Barbara McCillivray, St. Vincent's Institution; Hollister & Brace and John Poucher, Attorneys for Rehabilitation Institute at Santa Barbara; Wayne K. Lemieux and Dorothy Lou Crisp, Attorneys for Goleta Water District; Mullen, McCaughey & Henzell and Jeffrey C. Nelson, Attorneys for Patco Properties West, Sungate Associates and American Traditions General Partnership; Stephen Shane Stark, Senior Deputy County Counsel for the County of Santa Barbara; Charles W. Willey and Alexis Willey, Attorneys for Santa Barbara High School District and Goleta Union School District; Environmental Defense Center and Marc Chytilo, Attorneys for Citizens for Goleta Valley, Inc.

3. Definitions

Unless otherwise apparent from context, the following terms are defined for the purposes of this Judgment:

(a) "Augmented Service" -- Any water service provided by the Water District to an Overlying Owner

pursuant to the Judgment other than the quantified right and other than Exchange Service.

(b) "Basin" -- The North Central groundwater subbasin underlying the area shown as such on Exhibit A. Basin does not include the West groundwater subbasin.

(c) "Change of Use" -- The Private Overlying Owner's quantified right to water from the Basin at the time of this Judgment used for agricultural, residential and/or commercial purposes and the Private Overlying Owner desires to use more water than his/her/its quantified water right for some other combination of such uses. Specifically, changing agricultural use of water from one agricultural use to another agricultural use is not a change of use, whereas changing agricultural use of water to residential or commercial use is a change of use. Physical expansion by increasing the square footage of residential or commercial use which requires more water than a quantified right constitutes a change of use.

(d) "City" -- The City of Santa Barbara and any of its components, including but not limited to the City Council and any department or agency of the City of Santa Barbara.

"City Land" means that property located over the Basin and within the corporate limits of the City.

(e) "County" -- The County of Santa Barbara and any of its components, including but not limited to a Board of Supervisors, Planning Department, Public Resources Department or any other County Department or Agency.

(f) "Defaulted Parties" -- Those parties defendant and cross-defendant against whom a default has been taken.

(g) "Exchange Service" -- Water service by the Water District to an Overlying Owner in an amount not less than his/her/its quantified right as determined herein.

(h) "Export" -- The transfer of water from the Basin for use on properties not overlying the Basin. The transportation of water from the Basin Watershed or Basin to an area outside the Basin Watershed or Basin or the transportation by any party of water to a service area outside the Basin or Basin Watershed.

(i) "Extract" or "Pump" -- To take groundwater from the Basin by pumping or any other method.

(j) "Hydrologic Balance" -- As it relates to the operations of the Water District, the condition which exists when the perennial water supply

equals or exceeds the perennial water demand within the Water District. "Basin Hydrologic Balance" -- As it relates to the Basin, the condition which exists when the perennial recharge exceeds the perennial extractions from the Basin.

(k) "La Cumbre" -- La Cumbre Mutual Water Company.

(l) "Law and Motion Matter" -- The presentation of issue(s) to the court based upon a written notice, memorandum of points and authorities, and appropriate declarations, unless the court specifically orders a contested hearing with testimony and cross-examination, based upon notice regularly given for motions generally with any reply due in accordance with then existing law and motion rules.

(m) "Managed Service" -- Exchange service through a water management agreement or through a water meter placed on the Private Overlying Owner's well.

(n) "New Sources of Water" -- For purposes of Augmented Service, and independent of Water District's overall water demand and supply, any water not part of Water District's production and supply as of January 1, 1989 meeting the requirements of Section 31(a)(4) herein, developed from sources including but not limited to the following:

(i) Fortuna Well, Schulte Well, BCI contract, other Foothill Wells.

(ii) Water from increased conjunctive use (new injection wells).

(iii) Reclaimed water.

(iv) Step 7 Cachuma Water.

(v) Desalination.

(vi) Water Exchanges or purchases (excluding Exchange Service under this Judgment).

(vii) Tankers.

(viii) Cachuma Enlargement.

(ix) Casitas supply.

(x) State water.

(xi) Glen Annie reservoir.

(xii) Any other water not actually produced and delivered for and/or by the Water District as of January 1, 1989.

(o) "Nonparticipating Parties" -- Those parties who, although not defaulted, have not participated in the appeal, and/or were expressly excluded by court order from participation in the trial on remand.

(p) "Nonparty" -- Any person (to be interpreted in the broadest legal sense) who is not presently a party, and has never been a party to the action.

(q) "Overdraft" -- A condition which exists when on a perennial basis the total of extractions from the Basin exceeds the Safe-Yield of the Basin.

(r) "Overlying Owners" -- Private and public entity parties owning property which overlies the Basin.

(s) "Participating Parties" (sometimes referred to herein as "Party" or "Parties") -- Those private or public persons and entities who have either pursued their appellate rights or by court order were subsequently authorized to participate in the trial on remand.

(t) "Physical Solution" -- The court-decreed method of managing the waters of the Basin so as to achieve the maximum utilization of the Basin and its water supply, consistent with the rights herein declared.

(u) "Private Overlying Owner" -- Any private person or private entity Participating Party owning property overlying the Basin.

(v) "Public Overlying Owner" -- Any public entity or public utility Participating Party owning property overlying the Basin.

(w) "Safe Yield" -- The maximum quantity of water, which in addition to the Temporary Surplus, if any, can be extracted annually from the Basin without resulting in an irreparable depletion of supply.

(x) "School Districts" -- The Goleta Union School District and the Santa Barbara High School District.

(y) "Supplemental Water" -- Any water obtained by Water District in excess of that required to progressively reduce the Overdraft between the date of Judgment and December 31, 1998.

(z) "Temporary Surplus" -- The amount of water that can safely be extracted from the Basin in any Water Year in excess of the Basin's Safe Yield.

(aa) "Trigger Date" -- Although it is possible that the Water District may be obligated to provide Augmented Service or pay damages for noncompliance before the "Trigger Date", the term refers to the date that Water District shall either produce Augmented Service or pay damages. Trigger Date shall be the day after the Primary Election date in 1992 but not later than June 15, 1992.

(bb) "Water District" -- The Goleta Water District.

(cc) "Water Plan" -- The plan prepared by the Water District designed to achieve Hydrologic Balance. The plan is attached hereto and hereby incorporated by reference as Exhibit B.

(dd) "Water Year" -- May 15 of each year through May 14 of each following year.

(ee) "Watershed" or "Basin Watershed" -- The area tributary to the Basin as shown on Exhibit A.

QUANTIFICATION OF RIGHTS

4. Private Overlying Owners and Participating Parties

The following identifies each Private Overlying Owner who is a participating party: shows the property to which the overlying right has attached: the current use for each such parcel and the quantified overlying right of each such party.

The Overlying Owners listed below are numbered for ease of future identification.

1. American Traditions General Partnership, 13 acre parcel, no current water use, parcel #71-190-29, 71-190-37, 71-190-38.

That certain real property being a portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at the most Southerly corner of that parcel of land shown a "Parcel C" on a Map of Survey filed in Book 69, Page 66 of Record of Surveys, in the office of the County Recorder of said County; thence North 46°20'23" West along the Southwesterly line of said Parcel "C" 218.15 feet; thence, North 4°58'08" West leaving said Southwesterly line 117.65 feet; thence North 69°42'04" West 196.07 feet to a point in said Southwesterly line of Parcel "C"; thence North 46°20'23" West along said Southwesterly line 140.56 feet to a point in the Easterly right-of-way line of Ward Memorial Boulevard, said point being 265.87 feet measured at ground level, right of Ward Memorial Centerline Station 432+53.92; thence, North 18°58'58" East along said Easterly right-of-way line, 357.82 feet to an angle point therein; thence, South 77°21'45" East leaving said Easterly right-of-way line 788.53 feet; thence, South 11°02'00" East, 405.00 feet to a point on that course in the Southerly line of said Parcel "C" shown as "North 68°27'37" East 612.08"; thence, South 68°27'37" West along said Southerly line 548.00 feet to the point of beginning.

EXCEPTING therefrom that portion granted to the County of Santa Barbara and the Santa Barbara County Flood Control and Water Conservation District, bodies corporate and politic, by Deed recorded January 28, 1971 as Instrument No. 2406, in Book 2334, Page 1274 of Official Records.

2. Perry Austin, parcel 35.5 acre parcel, metered/no well, no present use, #65-320-04.

That certain real property situated in the unincorporated area of the County of Santa Barbara, described as follows:

Beginning at a 3/4" Survey pipe set on the center line of a 40 foot roadway as shown on the map of the division of the Julia Belle Austin Estate filed in Book 26, Page 129 of Record of Surveys, Records of said County, said point also being the most Westerly corner of the tract of land described in deed to County National Bank and Trust Company of Santa Barbara, recorded October 15, 1956 as Instrument No. 20139 in Book 1407, Page 409 of Official Records; thence North 81°02' West 21.68 feet to a 3/4" survey monument set in the road bed; thence North 1°11' East along the West line of the tract of land described as Parcel 3 in the deed to Perry Gwynne More Austin, recorded July 20, 1943 as Instrument No. 5772 in Book 527, at Page 464 of Official Records, 572.2 feet to the Northwest corner thereof; thence along the Northerly line of said tract North 89°36' East 1784.13 feet to the most Westerly corner of tract 1A as shown on the map filed in Book 17, Page 188 and 189 of Record of Surveys, records of said County; thence South 41.8 feet; thence South 42°30' East 906.14 feet to a point in the center line of the above-mentioned 40 foot road, thence along said centerline South 88°04'35" West 1824.55 feet to the beginning of a curve to the right; thence along said curve in a Northwesterly direction 151.02 feet said curve having a delta of 29°36'40"; a radius of 292.38 feet and a tangent of 77.28 feet; thence North 62°18'45" West 74.86 feet to the beginning of a curve to the left said curve having a delta of 18°42'10", a radius of 1129.79 feet and a tangent of 186.05 feet; thence along said curve 368.79 feet to the point of beginning.

EXCEPTING from said land above described all gas now or hereafter produced from the area underlying said land lying between the lowest limits of the zone commonly known as the "Vaqueros Sand" and the

surface of the ground and such oil as is now known to exist in the development of gas from said "Vaqueros Sand", in said area above referred to, as described in the deed to Pacific Lighting Corporation, a corporation, recorded in Book 510, Page 269 of Official Records.

3. Bar Investors, 4.34 acre parcel, water use 12.3 AF, motel, parcel #69-160-47.

All that certain land situated in the State of California in the unincorporated area of the County of Santa Barbara, described as follows:

Parcel "B" of Parcel Map No. 11,166, in the County of Santa Barbara, State of California, as shown on map recorded in Book 7, Page 24 of Parcel Maps, in the Office of the County Recorder of said County.

4. Jeffrey C. Bermant, 4.11 acre parcel, water use 8.18 AF, office and industrial use, parcel #71-230-09.

That portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, shown as Parcel A on Map of Vacation, as per map recorded in Book 95, page 66 of Maps, in the office of the County Recorder of said County.

5. Bottiani Properties, 37.64 acres parcel, no well/metered, lemons, avocados and kennel use, parcel #77-030-16.

The land referred to in this policy is situated in the State of California, County of Santa Barbara, and is described as follows:

Beginning at the Northeast corner of a tract of land conveyed by Sherman P. Stow and Wife, to Ambrozio Spezzibottiani by deed dated November 20, 1981, recorded in Book 32, Page 214 of Deeds; thence West 17.38 chains to stake in line of fence on West bank of San Pedro Creek; thence along fence North 18° East 1.13 chains; thence leaving fence North 13-1/2° West 1.31 chains; thence South 87° East 3.48 chains to corner of fence; thence along fence on the East side of walnut orchard, North 12-1/2° East 34.55 chains to South line of land conveyed to John Hirt by Sherman P. Stow by deed dated November 2, 1891, recorded in Book 31, page 527 of Deeds; thence along the land of John Hirt, South 76-3/4° East 6.71 chains to the

Southeast corner of said John Hirt's land; thence along fence South 0°15' East 34.37 chains to the point of beginning.

EXCEPTING THEREFROM that portion thereof conveyed to the Sherman P. Stow Company, a Corporation, by deeds recorded in Book 172, Page 106 of Deeds, and in Book 201, Page 48 of Deeds, records of said County.

6. Bottiani Properties. 29.25 acres parcel, no well/metered, lemons, avocados, nursery, machine shed, 2 house use, parcel #77-060-16.

PARCEL ONE:

Beginning at the Northwest corner of a tract of land conveyed by Elizabeth H. Hollister, and others, to Lena M. Flint and Lucy E. Ferguson by Deed dated May 15, 1895 and recorded in Book 48, of deeds, page 142, records of said County; thence an easterly direction along the North boundary of said tract of land, South 82° East 795.30 feet to a 1-1/2 inch by 1-1/2 inch redwood stake, from which a live oak tree 40 inches in diameter marked "F. F. F. B. T." bears North 85°15' East 168.30 feet; thence South 0°15' East, 2739.00 feet to the South boundary of said tract of land conveyed by Elizabeth Hollister, and others, to Lena M. Flint, and others, above referred to; thence along the South boundary of said last mentioned tract of land, West 569.58 feet to the top of the West bank of San Pedro Creek; thence along the said West bank of San Pedro Creek North 44° West 215.16 feet; thence along the said West bank of said San Pedro Creek, North 21°30' West 214.50 feet; thence North, crossing over said San Pedro Creek, 2495.46 feet to the point of beginning.

Excepting therefrom that portion lying Southerly of the Northerly line of the tract of land conveyed in the Deed to Twaits-Wittenberg Co., a partnership, recorded January 15, 1963 as Instrument Number 2071 in Book 1971, page 1409 of Official Records.

PARCEL TWO:

Beginning at the most Northeasterly corner of a tract of land described in a Deed to Sellar Bullard, et ux., recorded May 28, 1935 as Instrument Number 3839 in Book 335, page 297 of Official Records; thence along the easterly line

of said Bullard tract South 0°15' East 60.00 feet; thence leaving the Easterly line of said Bullard tract North 39°57'10" West 78.27 feet to the Northerly line of said Bullard tract; thence along the Northerly line of said Bullard Tract, East 50.00 feet to the point of beginning.

7. Bottiani Properties, 3.23 acres, water use 2.5 AF, commercial use, parcel #71-140-46, 71-140-56, 71-140-57, 71-140-58.

PARCEL ONE:

Those certain tracts of land shown and designated as "Parcel A" on Parcel Map Number 10,487 in the County of Santa Barbara, State of California, filed August 19, 1966 in Book 1, Page 70 of Parcel Maps, in the office of the County Recorder of said County.

PARCEL TWO:

Parcels "A", "B", and "C" of Parcel Map No. 11,270 in the County of Santa Barbara, State of California, as per Map filed in Book 7 Page 49 of Parcel Maps in the Office of the County Recorder of said County.

8. Cal-Real North, 6.71 acre parcel, water use 11.22 AF, commercial property, parcel #69-110-84, 69-110-85, 69-110-88, 69-110-89, 69-110-90.

PARCEL ONE:

Lot 2 of Tract 12,251 in the County of Santa Barbara, State of California, as per Map recorded in Book 92, page 69, of Maps in the office of the County Recorder of said county.

PARCEL TWO:

Lots 1, 2, and 3 of Tract No. 12,516 in the County of Santa Barbara, State of California, as per map recorded in Book 95, Pages 29 and 30 of Maps in the Office of the County Recorder of said County.

9. Donald Cavalletto, 58 acre parcel of which 25 acres overlie the Basin, water use 25 AF, lemons and avocados use, parcels #69-020-08, #69-020-06.

That certain real property in the County of Santa Barbara, State of California, being all of Parcel "B" of Parcel Map No. 12,839 filed in Book 22, pages 42 to 45, inclusive, of Parcel Maps records of said County.

Excepting therefrom that portion lying Northerly of the North line of Section 4, Township 4 North, Range 28 West San Bernardino Base and Meridian.

10. Edward Cavaletto, 70 acre parcel, water use 2 AF and 2 meters, greenhouse, avocados and other agriculture, parcel #067-010-11.

That certain real property in the County of Santa Barbara, State of California, being all of Parcel E per Parcel Map No. 12,490 filed in Book 18, Page 13 et seq. of Parcel Maps, records of said County.

11. George Cavalletto, 9.03 acre parcel, current water use 6.5 AF metered 10 AF well, apartments, office building and vegetables and berries, parcel #65-090-28.

All that certain land situated in the State of California in the unincorporated area of the County of Santa Barbara, described as follows:

That portion of Rancho La Goleta, in the County of Santa Barbara, State of California, shown and designated as Parcel "C" on Parcel Map No. 10545, filed in Book 2, Page 75 of Parcel Maps, in the office of the County Recorder of said County.

EXCEPTING THEREFROM that certain portion of land described in the Grant Deed from George A. Cavalletto to the County of Santa Barbara, recorded May 24, 1978, as Instrument No. 78-23467 of Official Records of said County.

Beginning at the northeasterly corner of Parcel C shown on map filed in Book 2, Page 75 of Parcel Maps in the Santa Barbara County Recorder's Office; thence along the easterly boundary of said Parcel C, the following courses and distances: S 37°54'45" W, 78.25 feet; thence S 37°42'35" W, 12.58 feet; thence leaving said easterly boundary, N 89°38'45" W, 60.00 feet; thence at right angles, N 0°21'15" E, 10.00 feet; thence at right angles, parallel with and distant 62.00 feet southerly, measured at right angles, from the 2 Line shown on map filed as C.S. Map No. 1210A in the Santa

Barbara County Surveyor's Office, N 89°38'45" W, 505.74 feet to the beginning of a 20.00 foot radius curve, concave southeasterly and tangent to the last described course; thence southwesterly along the arc of said curve, through a central angle of 85°01'15", a distance of 29.68 feet; thence S 18°49'45" W, 51.42 feet to a point on the easterly boundary of the parcel of land described in the Right of Way Grant to the County of Santa Barbara recorded February 21, 1963, as Instrument Number 8106 in Book 1978, Page 467 of Official Records in said County Recorder's Office; thence along said easterly boundary N 5°20' E, 38.08 feet to the most northeasterly corner of said parcel of land described in said Right of Way Grant to the County of Santa Barbara; thence along the northerly extension of said last mentioned easterly boundary, N 5°20' E, 102.02 feet to a point on the northerly boundary of said first mentioned Parcel C; thence along said northerly boundary, S 88°42'45" E, 645.22 feet to the point of beginning.

EXCEPTING THEREFROM, all oil, oil rights, minerals, mineral rights, natural gas, natural gas rights, and other hydrocarbons by whatsoever name known that may be within or under the parcels of land hereinabove described, together with the perpetual right of drilling, mining, exploring, and operating therefor and removing the same from said lands, or any other lands, including the right to whipstock or directionally drill and mine from lands other than those hereinabove described, oil or as wells, tunnels and shafts into, through, or across the subsurface of the lands hereinabove described, and to bottom such whipstocked or directionally drilled wells, tunnels and shafts under and beneath or beyond the exterior limits thereof, and to redrill, retunnel, equip, maintain, repair, deepen and operate any such wells or mines without, however, the right to drill, mine, explore, and operate through the surface or the upper 100 feet of the subsurface of the lands hereinabove described or otherwise in such manner as to endanger the safety of any public improvement that may be constructed on said lands.

Provided specifically that no utility pipes, electric power lines, telephone lines or structures shall be placed above the surface thereof.

12. Mike Cavaletto. 19.13 acre parcel, meters and .5 AF from 2 wells, mobile home and orchard use, parcel #67-010-12.

Parcel "D" of Parcel Map No. 12,490 in the County of Santa Barbara, State of California as per Map filed in Book 18 Page 13 et seq. of Parcel Maps in the Office of the County Recorder of said County.

13. Walter S. and Jean K. Daniels, 14.48 acre parcel, water use 17.2 AF wells, FAF meter, avocados and one house, parcel #069-211-06, 069-240-16, 069-192-02, 069-222-13, 069-240-18, 069-240-19.

PARCEL ONE:

That portion of Parcel "A" of Parcel Map No. 12,839 in the County of Santa Barbara, State of California, per map filed in Book 22, Pages 42 through 45, inclusive, of Parcel Maps, in the office of the County Recorder of said County, described as follows:

Beginning at the Westerly terminus of that certain course shown as "N 81°43'00" E 165.00 feet" on the north line of Parcel "A" of said parcel map; thence South 69°08'45" West, 682.55 feet; thence South 5°56'20" West 224.69 feet to the beginning of a curve concave Easterly having a radius of 300.00 feet; thence Southerly along the arc of said curve through a delta of 13°14'20" an arc length of 69.32 feet; thence North 25°42'50" East, 47.44 feet; thence North 66°56' East, 530.00 feet; thence North 56°26' East, 179.08 feet; thence North 0°52'27" East 186.24 feet to the point of beginning.

PARCEL TWO:

That certain "open space" parcel which was dedicated to the County of Santa Barbara by recordation of the map of Tract 10,145 in the County of Santa Barbara, State of California, and designated as "Parcel G" on said map which was recorded in Book 57 Pages 27 through 37 of Maps in the Office of the County Recorder of said County.

14. Deborah Sue Pegg (Estate of Ruth Garrett), a one-third interest in a 4.95 acre parcel, meter/2 inactive

wells, presently for sale, parcel #067-200-08, and a one-third interest in a 1.12 acre parcel, metered/2 inactive wells, for sale, parcel #067-200-09.

PARCEL ONE:

That portion of Rancho La Goleta, as shown within Lot 5 of Tract C as partitioned to H. Hill by Decree of Probate Court of said County on February 1, 1868 in the Matter of the Estate of Daniel A. Hill, deceased, as shown on Map accompanying the Commissioner's Report in said Matter, described as follows:

Beginning at a point in the Northerly line of the tract of land conveyed to the J. R. S. Investment Company, a partnership, recorded on January 21, 1963 in Book 1972, page 1076 of Official Records, at the Northwesterly corner of the tract of land conveyed in the Deed to W. H. Airey and others, recorded on September 18, 1964 in Book 2070, page 547 of Official Records; then for four (4) courses along the Westerly line of said W. H. Airey and other tract; 1st, South 16°30' West 80 feet, more or less, to a point; 2nd, North 61° West 41.0 feet to a point in the Maris Ygnacia Creek Channel (and for Two (2) courses down the channel); 3rd, South 16°25'22" West 58.0 feet, more or less, to a point, and 4th, South 1°34'38" East 255.00 feet to a point in the center line of said Channel, being a point on the Southerly line of the tract of land conveyed in the Deed to the J. R. S. Investment Company, a partnership, recorded on January 21, 1963 in Book 1972, page 1076 of Official Records; then for five (5) courses along said Southerly line of the J. R. S. Investment Company tract, being also the Northerly line of the tract of land conveyed in the Deed to the State of California, recorded July 14, 1960 in Book 1762, page 98 of Official Records; 5th, South 76°25'22" West 38.0 feet, more or less, to an angle point; 6th, South 5°28'44" West 60.00 feet to a point; 7th, North 77°40'43" West 125.90 feet to a point; 8th, North 81°39'31" West 300.38 feet to an angle point in chain link fence as shown on a Map filed in Book 66, page 34 of Record of Surveys; and 9th, North 58°25'53" West to a 2 inch iron pipe set in concrete at the Southeasterly corner of the tract of land given in the Lease to the Richfield Oil Corporation, recorded on May 15, 1963 in Book 1992, page 415 of Official Records; thence, 10th, along the Easterly line of said Richfield Oil Corporation Lease, North 1°34'23" East 195.35 feet

to a 2 inch iron pipe set in concrete on the Northerly line of said J. R. S. Investment Company tract; then for two (2) courses along the Northerly line of said J. R. S. Investment Company tract: 11th. South 83°16' East 133.00 feet to a 3 inch capped pipe (shown as a 2 inch monument - Goleta Post # 54 - in Book 25, page 41 of Record of Surveys); and 12th. North 82°52' East, at 440.06 feet a 1/2 inch pipe, at 526.26 feet a 1/2 inch pipe, 580.59 feet to the true point of beginning.

EXCEPTING THEREFROM all of the right, title and interest in and to any and all oil, gas, hydrocarbons, asphaltum and minerals lying and being below the depth of 500 feet beneath the surface of said land, but without the right of surface entry as previous reserved and/or conveyed by Deed recorded February 21, 1962 in Book 1905, page 53 of Official Records and Deed recorded January 21, 1963 in Book 1972, page 1076 of Official Records.

PARCEL TWO:

A strip of land sixty (60) feet in width, being a portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, said 60 foot strip lying northerly of, adjacent to and parallel with, measured at right angles to, the following described line:

Beginning at a 1/2 inch survey pipe set at the Easterly terminus of the 24th and last course of that tract of land described in the Deed to the Goleta Valley Development Co., a partnership, recorded December 21, 1962, as Instrument No. 54163, in Book 1968 page 1180 of Official Records, records of said County; thence along the Southerly line of said Goleta Valley Development Co. tract, South 82°52'20" West, 526.26 feet to a 2 inch survey pipe; thence North 83°14'20" West 283.22 feet, more or less, to a point on the Easterly line of the tract of land described in the Deed to the State of California, recorded April 7, 1959 as Instrument No. 10681 in Book 1612, page 562 of Official Records, records of said County, and the end of said line. The Northerly line of said 60 foot strip is to be prolonged or shortened, as the case may be, to terminate in the Westerly and Easterly lines of the grantor's land.

15. First Church of Christ. 1.71 acre parcel. metered, church and Sunday school use. parcel #069-511-11.

That portion of Lot Eight, Tract "A" of the Rancho La Coleta, in the County of Santa Barbara, State of California, partitioned to Josephine C. Hill Taylor, by Decree to the Probate Court of said County, February 1, 1868, in the matter of the Estate of Daniel A. Hill, deceased, as shown on the Map accompanying the Commissioners Report in said matter, described as follows:

Beginning at Post No. 36 at the Northwest corner of said lot as shown on said partition map; thence South along the Westerly line of said lot and the Westerly line of the tract of land described in the deed to Roy Rickard recorded October 29, 1962 as Instrument No. 7193 in Book 270, Page 416 of Official Records, 200 feet thence parallel with the Southerly line of said Rickard Tract of land South 85° East 400 feet; thence parallel with the Westerly line of said lot 8, North 200 feet; thence North 85° West 400 feet to the point of beginning.

EXCEPTING therefrom the interest in the Northerly 15 feet of said land for road purposes as reserved in the Deed dated September 18, 1874 and recorded in Book 3, Page 92 of Deeds. (Said roadway is shown on a record survey of this and other land filed in Book 25, Page 104 of Record of Surveys, in the Office of the County Recorder of said County)

16. John Forte, 40 acre parcel, water use 60 AF, farm house, storage sheds, avocados, parcel #059-140-07, 059-140-08.

Lot 2 of the Outside Pueblo Lands of the City of Santa Barbara, in the County of Santa Barbara, state of California, as shown on map approved by the Board of Trustees of the Town of Santa Barbara and known as Map No. 2, being the same premises as described in deed to William La Vies, recorded November 14, 1874 in Book N, page 217 of Deeds, records of Santa Barbara County .

In book 35 page 52 of Record of Surveys, appears a map by a licensed surveyor showing the property herein described.

17. Harold Frank, a two-thirds interest in a 4.95 acre parcel, meter/2 inactive well, flower use, parcel #067-200-08; and a two-thirds interest in a 1.12 acre parcel, meter/1 inactive well, vacant land, parcel #067-200-09.

PARCEL ONE:

That portion of Rancho La Goleta, as shown within Lot 5 of Tract C as partitioned to H. Hill by Decree of Probate Court of said County on February 1, 1868 in the Matter of the Estate of Daniel A. Hill, deceased, as shown on Map accompanying the Commissioner's Report in said matter, described as follows:

Beginning at a point in the Northerly line of the tract of land conveyed to the J. R. S. Investment Company, a partnership, recorded on January 21, 1963 in Book 1972, page 1076 of Official Records, at the Northwesterly corner of the tract of land conveyed in the Deed to W. H. Airey and others, recorded on September 18, 1964 in Book 2070, page 547 of Official Records: then for four (4) courses along the Westerly line of said W. H. Airey and others tract: 1st, South 16°30' West 80 feet, more or less, to a point: 2nd, North 61° West 41.0 feet to a point in the Maria Ygnacia Creek Channel (and for Two (2) courses down the channel): 3rd, South 16°25'22" West 58.0 feet, more or less, to a point, and 4th, South 1°34'38" East 255.00 feet to a point in the center line of said Channel, being a point on the Southerly line of the tract of land conveyed in the Deed to the J. R. S. Investment Company, a partnership, recorded on January 21, 1963 in Book 1972, page 1076 of Official Records; then for five (5) courses along said Southerly line of the J. R. S. Investment Company tract, being also the Northerly line of the tract of land conveyed in the Deed to the State of California, recorded July 14, 1960 in Book 1762, page 98 of Official Records: 5th, South 76°25'22" West 38.0 feet, more or less, to an angle point: 6th, South 5°28'44" West 60.00 feet to a point: 7th, North 77°40'43" West 125.90 feet to a point: 8th, North 81°39'31" West 300.38 feet to an angle point in chain link fence as shown on a Map filed in Book 66, page 34 of Record of Surveys: and 9th, North 58°25'53" West to a 2 inch iron pipe set in concrete at the Southeasterly corner of the tract of land given in the Lease to the Richfield Oil

Corporation, recorded on May 15, 1963 in Book 1992, page 415 of Official Records; thence, 10th, along the Easterly line of said Richfield Oil Corporation Lease, North 1°34'23" East 195.35 feet to a 2 inch iron pipe set in concrete on the Northerly line of said J. R. S. Investment Company tract; then for two courses along the Northerly line of said J. R. S. Investment Company tract; 11th, South 83°16' East 133.00 feet to a 3 inch capped pipe (shown as a 2 inch monument - Goleta Post # 54 - in Book 25, page 41 of Record of Surveys); and 12th, North 82°52' East, at 440.06 feet a 1/2 inch pipe, at 526.26 feet a 1/2 inch pipe, 580.59 feet to the true point of beginning.

EXCEPTING THEREFROM all of the right, title and interest in and to any and all oil, gas, hydrocarbons, asphaltum and minerals lying and being below the depth of 500 feet beneath the surface of said land, but without the right of surface entry as previous reserved and/or conveyed by Deed recorded February 21, 1962 in Book 1905, page 53 of Official Records and Deed recorded January 21, 1963 in Book 1972, page 1076 of Official Records.

PARCEL TWO:

A strip of land sixty (60) feet in width, being a portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, said 60 foot strip lying northerly of, adjacent to and parallel with, measured at right angles to, the following described line:

Beginning at a 1/2 inch survey pipe set at the Easterly terminus of the 24th and last course of the tract of land described in the Deed to the Goleta Valley Development Co., a partnership, recorded December 21, 1962, as instrument No. 54163, in Book 1968 page 1180 of Official Records, records of said County; thence along the Southerly line of said Goleta Valley Development Co. tract, South 82°52'20" West, 526.26 feet to a 2 inch survey pipe; thence North 83°14'20" West 283.22 feet, more or less, to a point on the Easterly line of the tract of land described in the Deed to the State of California, recorded April 7, 1959 as Instrument No. 10681 in Book 1612, page 562 of Official Records, records of said County, and the end of said line. The Northerly line of said 60 foot strip is to be prolonged or shortened, as the case may be, to terminate in the Westerly and Easterly lines of the grantor's land.

18. David E. Giorgi. 64.84 acres parcel. water use 89 AF well. 1 AF meter. lemons. parcel #71-140-64.

PARCEL ONE:

Those portions of the Rancho La Goleta in the County of Santa Barbara. State of California. described as follows:

Beginning at a 2 inch pipe survey monument with brass cap set at the Northeast corner of a 10.891 acre tract of land described in the Deed from John Faxon More. Administrator of the Estate of John F. More. Deceased. to Carlo Spezzi-Bottiani. dated July 2. 1924 and recorded in Book 42. Page 46 of Official Records. in the Office of the County Recorder of said County. said point of beginning being the Northwest corner of Lot 1. Orchard Tract. as shown on "Map of a portion of the John F. More Estate showing partition in accordance with the respective rights of the owners thereof. surveyed by F. F. Flournoy". recorded in Book 17. Pages 188 and 189 of Records of Surveys. in the Office of the County Recorder of said County: thence along the Northerly line of that portion of the John F. More Ranch known as the "Four Hundred Acre Tract". South 86°47'20" East 1109.71 feet to a 2-inch pipe survey monument with brass cap at the Northwest corner of Lot 3. Orchard Tract. as shown on said map: thence South 0°55" West 1413.18 feet to a 2 inch pipe survey monument with brass cap: thence North 86°47'20" West along a line parallel to and distant Southerly 1413.18 feet. measured at right angles. from the first course herein described to a point in the Westerly line of said Lot One of the Orchard Tract. from which the point of beginning bears North 0°51'10" East: thence North 0°51'10" East to the point of beginning.

Except that portion described as Parcel 8 in that certain final order of condemnation. Superior Court Case No. 61071. of Santa Barbara County to County of Santa Barbara. a political subdivision of the State of California. a certified copy of which was recorded September 25. 1961 as Instrument No. 34021 in Book 2028. Page 912 of Official Records.

Also except that portion described in Deed to the County of Santa Barbara. of the State of California. a body politic and corporate. recorded July 25. 1963 as Instrument No. 31772 in Book 2004. Page 892 of Official Records.

Also excepting that portion described in the Deed to the County of Santa Barbara recorded October 5, 1978 as Reel No. 78-46442 of Official Records.

PARCEL TWO:

Those portions of the Rancho La Goleta in the County of Santa Barbara, State of California, described as follows:

Beginning at a 2 inch pipe survey monument with brass cap set at the Northeast corner of a 10.891 acre tract of land described in the Deed from John Faxon More, Administrator of the Estate of John F. More, Deceased, to Carlo Spezzi-Bottiani, dated July 2, 1924 and recorded in Book 42, Page 46 of Official Records, in the Office of the County Recorder of said County, said point of beginning being the Northwest corner of Lot 1, Orchard Tract, as shown on "Map of a portion of the John F. More Estate showing partition, in accordance with the respective rights of the owners thereof, surveyed by F. F. Flournoy", recorded in Book 17, Pages 188 and 189 of Records of Surveys, in the Office of the County Recorder of said County; thence along the Northerly line of that portion of the John F. More Ranch known as the "Four Hundred Acre Tract", South 86°47'20" East 1109.71 feet to a 2 inch pipe survey monument with brass cap at the Northwest corner of Lot 3, Orchard Tract, as shown on said map; thence South 0°55' West 1413.18 feet to a 2 inch pipe survey monument with brass cap being the true point of beginning of the tract of land herein described; thence North 88°52' West 137.00 feet to a 2 inch pipe survey monument with brass cap; thence South 1°08' West 1436.24 feet to a 2 inch pipe survey monument with brass cap at the Southwest corner of Lot 3, Orchard Tract, as shown on said map; thence South 86°09' West 967.50 feet to a 2 inch pipe survey monument with brass cap set on the Easterly line of a 49.898 acre tract described in the Deed from John Faxon More, Administrator of the Estate of John F. More, Deceased, to County National Bank and Trust Company of Santa Barbara, dated July 2, 1924 and recorded in Book 38, Page 401 of Official Records, in the Office of the County Recorder of said County; thence North 0°53' East 769.40 feet to a pipe survey monument; thence North 0°51'10" East to a point from which the true point of beginning bears South 86°47'20" East; thence South 86°47'20" East to the true point of beginning.

PARCEL THREE:

That portion of Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at an iron pipe on the Westerly line of what is known as the "400 Acre Tract" on the John F. More Ranch, described in the Deed from Alexander S. More to John F. More, recorded in Book 16, Page 80 of Deeds, in the Office of the County Recorder of said County, said point of beginning, being South 0°53' West 1783.03 feet along the Westerly line of said tract from the Northwest corner thereof; thence along said Westerly line South 0°53' West 452.00 feet to an iron pipe; thence South 86°55'15" East 1038.31 feet, to an iron pipe; thence North 0°51'10" East 452.00 feet to an iron pipe; thence North 86°55'15" West 1038.07 feet to the place of beginning.

EXCEPT that portion thereof described as follows:

Beginning at an iron pipe on the Westerly line of what was known as the "400 Acre Tract" of the John F. More Ranch described in the Deed from Alexander S. More to John F. More recorded in Book 16, at Page 80 of Deeds in the Office of the County Recorder of said County, said point of beginning being South 0°53' West 1783.03 feet along the Westerly line of said tract from the Northwest corner thereof; thence along said Westerly line South 0°53' West 432.00 feet to an iron pipe; thence South 86°55'15" East 1038.31 feet to an iron pipe; thence North 0°51'10" East 432.00 feet to an iron pipe; thence North 86°55'15" West 1038.07 to the place of beginning.

19. David E. Giorgi, 8.74 acre parcel, meter/1 inactive well, avocados, parcel #069-525-20.

Parcel B of Parcel Map No. 10507 in the County of Santa Barbara, State of California as shown on Map filed in Book 1 Page 85 of Parcel Maps of the Santa Barbara County Recorder.

20. Coleta Business Park, 5.45 acre parcel, no meter, well: present use, industrial buildings; water use, 12 AF, parcel #71-130-48, 71-130-49, 71-130-50.1.

An undivided sixty percent (60%) interest in and to the following described real property:

Parcels A, B and C in the County of Santa Barbara, State of California, as shown on Parcel Map No. 12,317 filed in Book 19 at Pages 15 and 16 of Parcel Maps in the Office of the County Recorder of said County.

21. Wayne Graham, 2.36 acre parcel, water use 1.92 AF, office use, parcel #071-021-01, 071-021-44, 071-021-24.

PARCEL ONE:

That certain lot, piece or parcel of Lot 2, Tract "A" of the partition of the La Goleta Rancho located in the County of Santa Barbara, State of California, described as follows:

Commencing at Post No. 30 of the La Goleta Rancho, as shown on the partition map made by Edmund Pew and used in the partition to the heirs of the said La Goleta Rancho; thence South 85°29'30" East 219.91 feet to the Northwest corner of the tract of land described as Parcel 2 in the Deed to Harry May, recorded February 8, 1936 in Book 358, Page 180 of Official Records; thence South 0°20'30" West along the West line of said May Tract 95.66 feet, more or less, to the Northeast corner of Parcel 1 described in the above mentioned Deed to May, also being on the 9th course of the tract of land described in the Deed to A. J. Husselman, et ux., recorded October 27, 1947 in Book 736, Page 422 of Official Records; thence North 85°06' West along the 9th course of said Husselman Tract, 219.91 feet to a point on the West line of the La Goleta Rancho, from which a 1/2 inch survey pipe set on the East line of Fairview Avenue, bears South 85°06' East 15.08 feet; thence North 0°03' West along said West line 95.66 feet to the point of beginning.

EXCEPTING THEREFROM that certain parcel off the northwest corner thereof conveyed to the Southern Pacific Railroad Company.

In Book 25, Page 42 of Record of Surveys appears licensed surveyors map substantiating this and other land.

PARCEL TWO:

That certain lot, piece or parcel of lot 2, Tract "A" of the partition of the La Goleta Rancho

located in the County of Santa Barbara, State of California, described as follows:

Commencing at Post No. 30 of the La Goleta Rancho, as shown on the partition map made by Edmund Pew and used in the partition to the heirs of the said La Goleta Ranch; thence South 85°29'30" East 227.16 feet to a 3/4 inch survey pipe set at the true point of beginning of the following described parcel of land; thence 1st continuing South 85°29'30" East along the Northerly line of Lot 2, Tract "A", 172.84 feet to a 1/2 inch survey pipe; thence 2nd, South 4°26' West, 307.25 feet to a point on the Easterly line of the tract of land conveyed to Hilaria Alvarado and Inez Alvarado, by Deed dated January 9, 1946, recorded in Book 664, Page 461 of Official Records, from which a 1/2 inch survey pipe set on the Northerly line of the Frank E. Dow property, as shown on "Map of the Frank E. Dow Property" filed in Book 19, Page 24, of Maps and Surveys, in said Santa Barbara County records, bears South 4°26' West 50 feet; thence Westerly to a point on the Westerly line of the Southerly portion of said Alvarado Tract from which a 2 inch survey pipe with brass cap set on the Northerly line of said Frank E. Dow property, above referred to, bears South 0°47'30" West 50 feet; thence North 0°47'30" East 103.46 feet to a 1/2 inch survey pipe; thence 5th, North 84°05'30" West 65.18 feet to a 1/2 inch survey pipe; thence 6th, North 0°03' West 40.00 feet to a 1/2 inch survey pipe; thence 7th, North 84°05'30" West 160.00 feet to a point on the line between the Ranchos La Goleta and Los Dos Pueblos, from which a 1/2 inch survey pipe set on the Easterly side of Fairview Avenue, bears South 84°05'30" East 15.08 feet distant; thence 8th, North 0°03' West along the line between the two said Ranchos 60.37 feet to a point from which a 1/2 inch survey pipe set on the Easterly side of Fairview Avenue bears South 85°06' East 15.08 feet distant; thence 9th, South 85°06' East leaving said Ranchos' line and following along the Southerly line of the Antonio Souza lot, as shown on a licensed Surveyors Map filed in Book 25, Page 42, of Record of Surveys, 226.20 feet to a 1/2 inch survey pipe; thence 10th, North 0°20'30" East along the East line of aid Souza lot, as shown on said last mentioned map, 100.55 feet to the place of beginning.

In Book 25, Page 42 and Book 29, Page 12, of Record of Surveys appears licensed surveyors maps substantiating portions of this and other property.

PARCEL THREE:

That portion of Lot 2, Tract "A" of the Partition of the La Goleta Rancho located in the County of Santa Barbara, State of California, described as follows:

Beginning at the Northeast corner of the tract of land described as Parcel 1, in the Deed to Harry May recorded February 6, 1936, in Book 358, Page 180 of Official Records, said corner being on the 9th course of the Tract of land described in the Deed to A. J. Musselman, et ux., recorded October 27, 1947 in Book 736, Page 422 of Official Records; thence South 85°06' East along said 9th course 6.29 feet, more or less, to the Easterly end thereof; thence North 0°20'30" East along the 10th course of said Musselman Tract 100.55 feet, more or less, to a point on the Northerly line of Parcel 2 described in the above mentioned Deed to May; thence North 85°29'30" West along said North line 7.25 feet, more or less, to the Northwest corner of said Parcel 2 above mentioned; thence South 0°20'30" West along the West line of said Parcel 2, 100.05 feet to the point of beginning.

PARCEL FOUR:

That portion of the La Goleta Rancho situated in the County of Santa Barbara, State of California, described as follows:

Beginning at a point on the line between the Ranchos Los Dos Pueblos and La Goleta, distant South 0°03' East 196.05 feet from the point of intersection of said Ranchos line with the Southerly line of the southern Pacific Railroad Company's right of way, said point being on the prolongation of an old fence at the end of the first course described in that certain Judgment issued out of the Superior Court, in and for said County, in an action entitled "Antonio Souza, vs. E. G. Dodge, Administrator of the Estate of Ramon J. Hill, Deceased, et al.", a certified copy of which is recorded in Book 107, Page 421 of Official Records, in the said Santa Barbara County Recorder's office, and a 1/2 inch survey pipe bears South 84°05'30" East 15.08 feet; thence 1st, South 84°05'30" East along said old fence 160.00 feet to a 1/2 inch survey pipe set at the end of the 5th course of that certain tract of land conveyed to the Ambrose Mill and Lumber Co., a corporation, by Deed dated August 8, 1955 and recorded August 10, 1955 in Book 1329, Page 387 of Official Records; thence 2nd, North 0°03' West

parallel with said Rancho line, along the 6th course of said Lumber Company Tract 40 feet to a 1/2 inch survey pipe set at the end thereof; thence 3rd, North 84°05'30" West along the 7th course of said tract 160 feet to the end thereof and a point on said Ranchos line from which a 1/2 inch survey pipe bears South 84°05'30" East 15.08 feet; thence 4th, leaving said Lumber Co. Tract, South 0°03' East along said Ranchos Line 40 feet to the place of beginning.

PARCEL FIVE:

That certain lot, piece or parcel of Lot 3, Tract "A" of the partition of La Goleta Rancho, in the County of Santa Barbara, State of California, described as follows:

Beginning at the intersection of the Southerly line of the Southern Pacific Railroad Company's right of way and the southerly line of the said Lot 3, Tract "A", being also a point on the Northerly line of that certain tract of land, described in the Deed to Ambrose Mill and Lumber Company, a corporation, recorded August 10, 1955 as Instrument No. 14285 in Book 1329, Page 395 of Official Records, said part being distant South 85°29'30" East 16.47 feet from Post No. 30 of the La Goleta Rancho, as shown on the partition map made by Edmund Pew and used in the partition of the heirs of said La Goleta Rancho; thence following along the Northerly boundary of said Ambrose Mill and Lumber Company, South 85°29'30" East 210.69 feet to the Northeast corner of said tract, being also the Southwest corner of Parcel One of that certain tract of land, as described in the Deed to James H. Mc Afee, et ux., recorded March 22, 1939 in Book 460, Page 85 of Official Records; thence following along the Westerly boundary of said Mc Afee Tract, North 0°18'30" East 41.69 feet to a point on the Southerly boundary of said railroad right of way; thence following along said right of way, South 83°13'30" West 211.75 feet to the point of beginning.

PARCEL SIX:

That certain lot, piece or parcel of Lot 3 Tract "A" of the partition of La Goleta Rancho, in the County of Santa Barbara, State of California, described as follows:

Beginning at Post No. 30 of the La Goleta Rancho, as shown on the partition map made by Edmund Pew and used in the partition to the heirs of said La

Goleta Rancho, thence along the Southerly line of said Lot 3 of Tract "A", South 85°29'30" East 227.16 feet to a 3/4 inch survey pipe and the true point of beginning of the parcel of land herein described, said point being the most Northerly corner of that certain tract of land, as described in the Deed to Ambrose Mill and Lumber Company, a corporation, recorded August 10, 1955 as Instrument No. 14281 in Book 1329, Page 387 of Official Records, being also the Southwest corner of Parcel One of that certain tract of land as described in the Deed to James H. Mc Afee, et ux., recorded March 22, 1939 in Book 460, Page 85 of Official Records; thence 1st, following along the Northerly boundary of said lumber co. tract and the Southerly boundary of said Mc Afee Tract South 85°29'30" East 110.84 feet to a 3/4 inch survey pipe; thence 2nd, leaving said boundary lines North 0°18'30" East 63.54 feet to a 3/4 inch survey pipe set on the Southerly line of the Southern Pacific Railroad Company's right of way; thence 3rd, along said right of way line South 83°13'30" West 111.40 feet to a 3/4 inch survey pipe set at the Northwest corner of said Mc Afee Tract; thence 4th, leaving said right of way boundary and following along the Westerly boundary of said Mc Afee Tract, South 0°18'30" West 41.69 feet to the point of beginning.

In Book 29, Page 132 of Record of Surveys appears a map of a licensed survey substantiating portions of the property herein described.

PARCEL SEVEN:

A 2/30th interest in a parcel of land known as "Well Lot" and more fully described as follows:

Commencing at a point from which Post No. 30 of said La Goleta Rancho bears North 85°29'30" West 570.00 feet; thence South 85°29'30" East 133.10 feet; thence South 4°54'30" West 17.04 feet; thence North 85°32' West 132.95 feet to a point on the Northerly prolongation of the Easterly line of Orange Avenue, as said Avenue is shown on "Map of Frank E. Dow Property, Etc.", filed in Book 19, Page 24 of Record of Surveys; thence North 4°26' East along said Northerly prolongation line 17.13 feet to the point of beginning.

22. La Cumbre Mutual Water Company, water use 1000 AF appropriative right: 9 parcels totalling 7.5 acres; water

use 1.00 AF; meter/3 active wells, use riding rings, cathodic anode and water well sites, more particularly described as follows:

APN 61-220-11:

Beginning at the northwesterly corner of Lot 54-A of La Cumbre Estates Tract No. 1, a subdivision of a portion of Hope Ranch in the County of Santa Barbara, State of California, according to the Map thereof filed in Map book 15, pages 117 to 126, inclusive, in the office of the County Recorder of said County, on the center line of Nogal Drive as shown on said Map; thence 1st, Easterly along the Northerly line of said Lot 54-A on the arc of a curve to the right from a tangent which bears North 53°08'10" East, the radius of which is 989.49 feet and the central angle of which is 11°34'51", a distance of 200.00 feet; thence 2nd, South 25°16'59" East, a distance of 100.00 feet to the beginning of a curve to the left from a tangent which bears South 64°43'01" West; thence 3rd, Westerly along the arc of said curve, the radius of which is 889.49 feet and the central angle of which is 12°43'20", a distance of 197.51 feet to a point on the center line of said Nogal Drive on the arc of a curve to the right from a tangent which bears North 32°19'42" West, at said point; thence 4th, Northwesterly along the arc of said curve, the radius of which is 550.00 feet, through a central angle of 10°36'42", a distance of 101.86 feet to the point of beginning, containing 0.460 acres, more or less.

APN 61-201-01:

Beginning at the northwest corner of Lot 51 along Atascadero Creek as shown on Sheet No. 6 of that certain Map of Tract No. 1, La Cumbre Estates, being a subdivision of a portion of Hope Ranch, filed with the Recorder of Santa Barbara County, State of California, in Map Book 15 at pages 117 to 126, inclusive; thence 1st, along the center line of Nueces Drive, whose right of way is fifty feet in width S. 88°11'50" E. a distance of 48.68 feet; thence 2nd, leaving the center line of Nueces Drive S. 8°43'00" E. a distance of 88.79 feet; thence 3rd, S. 47°50'00" W. a distance of 39.00 feet; thence 4th, N. 87°44'50" W. a distance of 57.14 feet; thence 5th, N. 47°50'00" E. a distance of 58.30 feet; thence 6th, N. 8°43'00" W. a distance of 74.70 feet to the point of beginning, containing 0.120 acres.

APN 61-210-07:

Beginning at the most northerly corner of Lot 53 as shown on Sheet No. 6 of Map of Tract No. 1 La Cumbre Estates filed with the Recorder of Santa Barbara County, State of California, in Map Book 15 at pages 117 to 126 inclusive, said corner being on the center line of Nogal Drive along the arc of a curve concave to the northeast and having a tangent at said corner which bears S 21°43' E; thence 1st southerly along the center line of Nogal Drive and the arc of said curve whose radius is 550.00 feet and whose central angle is 13°34'28", a distance of 130.31 feet; thence 2nd leaving the center line of Nogal Drive N 83°12'40" W, a distance of 78.25 feet; thence 3rd S 47°10' W, a distance of 75.00 feet; thence 4th S 43°41' W, a distance of 126.33 feet; thence 5th S 38°19' W, a distance of 121.72 feet; thence 6th N 51°41' W, a distance of 70.00 feet to a point along the northerly boundary of said Lot 53; thence 7th along the northerly boundary of said Lot 53, N 38°19' E, a distance of 125.00 feet; thence 8th continuing along said northerly boundary N 43°41' E, a distance of 129.61 feet to the beginning of a tangent curve to the right; thence 9th continuing along said northerly boundary and along the arc of said curve whose radius is 984.00 feet and whose central angle is 9°27'10", a distance of 162.34 feet to the point of beginning, containing 0.687 acres.

APN 61-220-08:

PARCEL 3. WELL ACREAGE NO. 3

Commencing at stake No. 20 at angle point in the south line of Modoc Road as called for in deed from Delia Hope (a widow) to the Pacific Improvement Company, dated April 4, 1887, and recorded in Book 13 of Deeds, page 157, et seq., Santa Barbara County Records; thence south 82°15' east on line with a 4" x 4" redwood stake No. 19 as per deed, 435.6 feet to a 4 x 4 inch redwood stake; thence at right angles south 7°45' west 100 feet to a 4 x 4 inch redwood stake; thence north 82°15' west, parallel with the first above mentioned course, 435.6 feet to a 4 x 4 inch redwood stake; thence north 7°45' east 100 feet to place of beginning, containing one acre.

PARCEL 4. WELL ACREAGE NO. 4

Commencing at a 4 x 4 inch redwood stake on the southern line of the Modoc Road from which a 4 x 4 inch redwood stake being Stake No. 22 as mentioned in the description of land contained in that certain deed from Delia Hope (a widow) to the Pacific Improvement Company, dated April 4th, 1887, and recorded in Book

13, at page 157, Santa Barbara County Records, at angle point bears N. 61° W. 50 feet; thence 1st, S. 61° E. on line between redwood stakes 21 and 22 (according to said deed) 285.0 feet to a 4 x 4 inch redwood stake; thence 2nd, S. 29° W 152.84 feet to a 4" x 4" redwood stake; thence 3rd, N. 61° W. parallel with the 1st above mentioned course 285.0 feet to a 4 x 4 inch redwood stake; thence 4th, N. 29° E. 152.84 feet to the place of beginning, containing one acre.

PARCEL 7. WELL ACREAGE NO. 7

Commencing at a 4 x 4 inch redwood stake on the south line of Hollister Avenue, same being on the line between Pueblo Lot No. 4 and La Goleta Rancho as now fenced, from which a stake set at the southwest corner of said Pueblo Lot No. 4 bears south 0°14' east 23.84 feet; thence south 0°14' west 2187.9 feet to about center of slough from which a 4 x 4 inch redwood stake bears north 0°14' west 25 feet; thence north 52°48' east 125.16 feet to a point from which a 4 x 4 inch redwood stake bears north 0°14' west 25 feet; thence north 0°14' west, parallel with the first above mentioned line, 2135.5 feet to a 4 x 4 inch redwood stake on the south line of Hollister Avenue; thence south 76°51' west 102.6 feet to the place of beginning.

Excepting therefrom that portion included within the lines of the Tract No. 10,211 as per map recorded in Book 58 page 88 and 89 of Maps, and that portion included within the lines of Tract 10,016 as map recorded in Book 52 pages 21 and 22 of Maps in the Office of the County Recorder of said County.

APN 61-220-07:

PARCEL 5: That portion of the westerly portion of the so-called Hope Ranch as per recorded map thereof in Book 16 of Maps and Surveys, at page 143, in the office of the County Recorder of Santa Barbara County, more particularly described as follows:

Beginning at the intersection of the center line of Hollister Avenue and Modoc Road; thence S. 55°00' E. 741.62 feet to the point of true beginning; thence S. 1°47' W. 382.99 feet to a point; thence S. 88°13' E. 314.91 feet to a point; thence N. 60°53' W. 285.06 feet to a point; thence N. 29°06' E. 183.77 feet to a point in the center line of Modoc Road; thence along the center line of Modoc Road N. 61°27' W. 47.56 feet to a point; thence N. 55°00' W. 123.67 feet to the point of beginning, containing 1.10 acres.

APN 61-220-09:

Lot No. 62 as shown and designated on Sheet No. 7 of Map of Tract No. 1 of La Cumbre Estates, being a subdivision of a Portion of Hope Ranch as surveyed by George A. Miller, licensed surveyor, which map was recorded on August 10th, 1926, in Map Book 15, at pages 117 to 126 inclusive, in the office of the County Recorder of Santa Barbara County.

Together with a strip of land of a uniform width of 30 feet lying southerly of and adjacent to said Lot 62, lying between the most easterly line and the most southwesterly line thereof produced to the center line of Vieja Drive.

APN 061-050-29:

Beginning at the Southeast corner of Lot 17 of Tract No. 10,211 as per map recorded in Book 58 pages 88 and 89 of Maps in the Office of the County Recorder of said County thence North 01°58' East 112.12 feet to the Northeast corner of said Lot 17;

Thence, South 88°02'00" East 55.28 feet to the beginning of a curve to the right having a radius of 15.00 feet and a delta of 78°55'50";

Thence, Southeasterly along the arc of said curve 20.57 feet;

Thence, South 88°02' East 30.03 feet;

Thence, South 01°59'00" West 100.00 feet;

Thence, North 88°02'00" West 100.00 feet to the point of beginning.

23. Larkin Manor No. 3, 5.91 acre parcel, meter/2 inactive wells, no present use, parcel #065-472-07.

Lot 1 of Tract 11321 in the County of Santa Barbara, State of California as shown on the map thereof Recorded in Book 79 Pages 30, 31 and 32 of Maps in the Office of the County Recorder of said County.

24. Lowengart Trust and Austin Trust, 21.75 acres parcel, no well/metered, ornamentals and tomatoes, parcel #71-140-72.

Parcel "3" of Parcel Map No. 12,911 in the County of Santa Barbara, State of California as shown on the map thereof filed in Book 31 Pages 39 and 40

of Parcel Maps in the Office of the County Recorder of said County.

25. Manzo Investment, 1.5 acre parcel, water use 1.5 AF, commercial use, parcel #71-081-13, 71-081-14.

The land referred to in this report is situated in the State of California, County of Santa Barbara, and is described as follows:

PARCEL ONE:

All that certain land situated in the State of California in the unincorporated area of the County of Santa Barbara, described as follows:

That portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at a point which bears South 85°32" East 1862.05 feet distant from Post No. 28 of that Partition Survey of said Rancho, said point being the Southeast corner of the tract of land distributed to Horace A. Sexton in that certified copy of a decree of distribution entered in the Superior Court in the State of California, in and for said County, in the matter of the Estate of Joseph Saxton, deceased, recorded in Book 169, at Page 221 of Deeds, Records of said County; thence South 85°32' East 134.25 feet to the Southwesterly corner of the land described in the deed to Thomas Hirashima, et al., dated April 25, 1950 and recorded April 27, 1950 as File No. 5865 in Book 913 of Official Records at Page 414, records of said County; thence along the Westerly line of said land of Hirashima North 0°34'25" West 259.63 feet to the Northwesterly corner of said Land; thence North 85°42'50" West 134.21 feet to the Northeasterly corner of Lot 59 of Goleta Center, as shown on a map recorded in Book 15 of Maps at Page 163, Records of said County; thence along the Easterly line of said tract South 0°33' East 259.20 feet to the point of beginning.

PARCEL TWO:

That portion of La Rancho La Goleta in the County of Santa Barbara, State of California, described as follows:

Beginning at a point which bears South 85°32 East 1,996.85 feet from Post No. 28 of the Partition Survey of said Rancho, said point being on the

Southerly line of the tract of land distributed to Horace A. Sexton in that certified copy of a decree of distribution entered in the Superior Court of the State of California, in and for said County, in the matter of the Estate of Joseph Sexton, deceased, recorded in Book 169, at Page 221 of Deeds, records of said County; thence continuing along said Southerly line of the Sexton Tract South 85°32' East 50 feet; thence leaving said line North 0°34'25" West, parallel with the Easterly line of the tract of land known as Goleta Center, said tract being shown on a map recorded in Book 15, Page 163 of Maps, a distance of 260 feet, more or less, to a point in the Northerly line of the Tract of land conveyed to Thomas Hirashima, et al., by Deed dated April 25, 1950, recorded April 27, 1950, in Book 931, Page 414 of Official Records, as Instrument No. 5865; thence North 85°42'50" West 50 feet; thence South 0°34'25" East 259.63 feet to the point of beginning.

26. Gordon T. McCloskey, 7 acre parcel, 17 AF water use, avocados, flowers, greenhouse, and residential use, parcel #65-080-10, 65-080-11, 65-080-20.

That certain tract of land in the County of Santa Barbara, State of California, described as follows:

Beginning at a point in the Northerly line of State Highway as shown on a survey of a portion of Lot 4, Tract C, Partition of D. A. Hill Estate, filed in Book 23, Page 50 of Record of Surveys, records of said County;

Thence 1st, S. 77°02'30" W., along said Northerly line as shown on said map, 132.24 feet to the beginning of a curve in said line, concave Northerly, having a radius of 575.00 feet and a delta of 14°16';

Thence 2nd, Southwesterly, along the arc of said curve, 143.20 feet to the end thereof;

Thence 3rd, N. 88°41'30" W., continuing along said line, 162.97 feet to its point of intersection with the center line of the 20 Foot Private Road, as shown on said map;

Thence 4th, N. 1°27' E., along said center line, 751.90 feet to a 2 inch pipe set in said line, according to said map;

Thence 5th. S. 86°18' E., along the Southerly line of the C.S. Lane property, as shown on said map, 453.42 feet to the Southeasterly corner of said C. S. Lane property;

Thence 6th. S. 3'47' W., along the West line of the C. Emmens property, as shown on said map, 682.99 feet to the point of beginning.

That portion of Rancho La Goleta as shown on a map filed in Book 23, Page 58 of Record of Surveys, being:

Beginning on a 1/2 inch pipe in the Northerly line of Hollister Avenue, sixty feet (60.00') in width, at the Southeasterly corner of the tract of land conveyed by the "Order Settling Final Account And Decree of Final Distribution" "In the Matter of the Estate of Joseph H. Brown, Deceased" recorded on July 10, 1929 in Book 195, Page 41 of Official Records, to Minnie C. Brown, Jessie L. French, Mabel H. Brown, Jeanette Brown, and Muriel F. Brown, daughters of said decedent; then for two (2) courses along the boundary line of said Brown tract of land: 1st, North 0°45' East 747.78 feet, more or less, to the Northeasterly corner of the Brown tract of land; and 2nd, along the Northerly line of said Brown tract of land, North 87° West 10.0 feet, more or less, to the Easterly line of Tract 10,278 recorded in Book 72, Pages 98, 99 and 100 of Maps; thence 3rd, along the Easterly line of said tract, South 0°45' West 748 feet, more or less, to a point on the Northerly line of Hollister Avenue being the Southerly line of said Brown tract of land; thence 4th, along said road-boundary line, South 89°30' East 10.00 feet, more or less, to the point of beginning.

27. **Rudolph Mosel and Mr. and Mrs. Norman Bremer**, .011 acre parcel, water use .03 AF, residence, parcel #071-021-31.

PARCEL ONE:

That portion of Lot 2, Tract A, of the partition of the La Goleta Rancho, in the County of Santa Barbara, State of California, described as follows:

Commencing at Post No. 30 of the La Goleta Rancho as shown on the Partition Map made by Edmund Pew and used in the partition to the heirs of said La

Coleta Rancho: thence S. 85°29'30" E. along the line between Lots 2 and 3 of Tract A of said Rancho 520.00 feet to a point: thence S. 4°26' W. 307.17 feet along the Northwesterly side of a fifty (50) foot easement to the true point of beginning of the following described parcel of land: thence 1st. S. 4°26' W. continuing along the said Northwesterly side of said fifty (50) foot easement 50.00 feet to a 1/2 inch survey pipe set at the most Northwesterly corner of Orange Avenue as shown on "Map of the Frank E. Down Property Etc." made by George A. Miller, registered engineer, and filed in Book 19, Page 24 of Maps and Surveys in the Santa Barbara County Records: thence 2nd. N. 85°32' W. along the Northerly line of the said Frank E. Down Property 120.00 feet to a 1/2 inch survey pipe: thence 3rd. N. 4°26' E. leaving said Down Subdivision Property 50.00 feet to a 1/2 inch survey pipe: thence 4th. S. 85°32' E. 120.00 feet to the place of beginning.

EXCEPTING therefrom that portion of land described in the Deed to J. P. Beguhl, recorded June 29, 1944 as Instrument No. 6353, in Book 613, Page 99 of Official Records.

PARCEL TWO:

An easement for road and public utilities purposes for ingress or egress, over, under, upon or through a strip of land fifty (50) feet in width and more fully described as follows:

Commencing at the above mentioned Post No. 30 of said La Goleta Rancho, thence S. 85°29'30" E. 570.00 feet to a point: thence S. 4°26' W. 5.00 feet to the true point of beginning of the following described easement; thence 1st. S. 4°26' W. 352.13 feet to a point t the most Northeasterly corner of Orange Avenue as shown on "Map of the Frank E. Down Property Etc." and filed in Book 19, Page 24 of Maps and Surveys in the Santa Barbara County Records; thence 2nd. N. 85°32' W. along the Northerly side of said Orange Avenue 50.00 feet to a point at the Northwesterly corner of said avenue; thence 3rd. N. 4°26' E. 352.17 feet to a point; thence 4th. 85°29'30" E. 50.00 feet to the place of beginning.

28. **James F. and Fleeta McKone.** 3.06 acre parcel, water use 9.1 AF, house and pool use, parcel #067-030-36, 067-050-06, 067-050-09.

PARCEL ONE:

Parcel "A" in the County of Santa Barbara, State of California, as shown on the map of Parcel Map No. 10648 filed in Book 3, Page 2, of Parcel Maps, in the Office of the County Recorder of said County.

EXCEPTING THEREFROM 25% of all the oil, gas and minerals in, on and under said land, as reserved by Francis M. Sedgwick et ux., in the deed to Harriet F. Saperstein, a married woman, recorded November 8, 1957 as instrument number 23170 in book 1484 at page 392 of Official Records, records of said County.

PARCEL TWO:

An easement and right of way for ingress, egress and roadway purposes, over, upon and through a strip of land 40 feet in width, being a portion of Lot 10 in Tract "B" of the Rancho La Goleta, in the County of Santa Barbara, State of California, set apart to Jose Maria Hill, by Decree of Probate Court of said County on February 1, 1868 in the Matter of the Estate of Daniel A. Hill, deceased, as shown on the map accompanying the commissioner's report in said matter, said easement to lie 20 feet on each side of the following described center line:

Beginning at a 3/4 inch survey pipe set at the Northerly terminus of the most Easterly line of that tract of land described as "Parcel One" in the Deed to Michael B. Saperstein, a married man recorded February 24, 1959 as instrument no. 5913 in book 1598 at page 566 of official records, records of said County; thence North 89°58'40" West, along the Northerly line of said Saperstein Tract, "Parcel One" 35.89 feet to the true point of beginning, being also the beginning of a curve concave to the Southeast, having a radius of 80.00 feet, a delta of 46°46'19" and whose radial center bears South 45°49'09" East; thence Southerly, along the arc of said curve, 65.31 feet to the end thereof; thence South 2°35'26" East, 119.00 feet to the beginning of a curve to the right having a radius of 70.00 feet and a delta of 42°37'23"; thence Southerly, along the arc of said curve, 52.07 feet to the end thereof; thence South 40°01'55" West, 23.74 feet to the beginning of a curve to the left having a radius of 40.00 feet and a delta of 107°04'45"; thence Southerly, along the arc of said curve, 74.76 feet to the end thereof; thence South 67°02'50" East, 76.26 feet

to point on the most Easterly line of said Saperstein Tract, "Parcel One", from which a 3/4 inch survey pipe set at the southerly terminus thereof bears South 0°05'10" East, 33.44 feet.

NOTE: The side lines of said easement are to be prolonged or shortened as the case may be, so as to intersect and terminate in the Northerly and most Easterly lines of said Saperstein Tract, "Parcel One".

PARCEL THREE:

An easement for road and public utility purposes for use in common with others, in, on, over, under, along and through a strip of land 40 feet in width, being a portion of Lot 10, in Tract "B" of the Rancho La Goleta, in the County of Santa Barbara, State of California, set apart to Jose Maria Hill, by Decree of Probate Court of said County on February 1, 1868 in the Matter of the Estate of Daniel A. Hill, deceased, as shown on the Map accompanying the Commissioner's report in said matter, said easement to lie 20 feet on each side of the following described centerline:

Beginning at the intersection of the Southerly line of the tract of land described in deed to Francis M. Sedgwick, et ux., recorded February 26, 1932 in Book 262, Page 95 of Official Records, records of said county, being the center line of Cathedral Oaks Road with a line drawn parallel with and distant westerly 20 feet measured at right angles from the Easterly line of said Sedgwick tract of land: thence North 0°21' East parallel with said Easterly line of said Sedgwick tract of land 357.14 feet; thence North 24°23'20" West 196.17 feet; thence North 22°06' East, 89.70 feet; thence North 16°21'30" West 166.17 feet; thence North 27°14' East 180.50 feet; thence North 24°33'50" West 166.94 feet; thence North 22°08'10" East 229.91 feet, more or less, to intersect a line drawn parallel with and distant Westerly 20 feet, measured at right angles from the Easterly line of said Sedgwick tract hereinbefore referred to; thence North 0°21' East parallel with said Easterly line to intersect the Easterly prolongation of the most Northerly line of Parcel One above described.

EXCEPTING therefrom any portion thereof lying within the boundaries of Parcel One above described.

PARCEL FOUR:

An easement for public utilities, under a strip of land 5 feet in width, being a portion of Lot 10 in Tract "B" of the Rancho La Goleta, in the County of Santa Barbara, State of California, set apart to Jose Maria Hill, by Decree of Probate Court of said County on February 1, 1868 in the Matter of the Estate of Daniel A. Hill, deceased, as shown on the map accompanying the commissioner's report in said matter, said easement to lie 2-1/2 feet on each side of the following described center line:

Beginning at a 3/4 inch survey pipe in the Westerly line of the portion of said Lot 10 described in deed to Francis M. Sedgwick, et ux., recorded February 26, 1932 in Book 262, Page 95 of Official Records, records of said county, distant thereon South 0°35'00" West 1478.08 feet from the Northwest corner of said Sedgwick tract of land, said survey pipe marking the Southwesterly corner of the tract of land conveyed to Robert A. Gilcrest, et ux., recorded October 8, 1957 as instrument no. 23175 in book 1484, page 407 of Official Records; thence along the Southerly line of said Gilcrest tract, North 88°15'40" East 84.37 feet to a 3/4 inch survey pipe set at an angle point therein; thence North 80°11' East 142.30 feet to the true point of beginning of said center line; thence Southerly in a direct line to the most Northerly terminus of the fifth course of "Parcel One" described in the deed to James F. McKone, et ux., recorded December 5, 1958 as instrument no. 30310 in book 1575, page 540 of Official Records, records of said county.

The side lines of said strip to be lengthened or shortened to intersect the Northerly and Southerly boundaries of said McKone Tract, "Parcel One".

PARCEL FIVE:

An easement for road and public utility purposes, for use in common with others, in, on, over, under, along and through a strip of land 40 feet in width, being a portion of Lot 10 in Tract "B" of the Rancho La Goleta, in the County of Santa Barbara, State of California, set apart to Jose Maria Hill, by Decree of Probate Court of said County on February 1, 1868 in the Matter of the Estate of Daniel A. Hill, deceased, as shown on the map accompanying the commissioner's report in said matter, said easement to be 20 feet on each side of the following described center line:

Beginning at the intersection of the Southerly line of the tract of land described in deed to Francis M. Sedgwick, et ux., recorded in Book 262, Page 95 of Official Records, records of said County, being in the center line of Cathedral Road, with a line drawn parallel with and distant 20.00 feet Westerly, measured at right angles, from the Easterly line of said Sedgwick tract of land; thence North 0°30' East 355.12 feet, parallel with the Easterly line of said Sedgwick tract of land; thence North 24°23'20" West 198.39 feet; thence North 68°47'20" West 159.00 feet, more or less, to intersect the East line of the tract of land described as "Parcel One" in the deed to Earl V. Armstrong, a married man, recorded November 8, 1957 as Instrument No. 23172 in Book 1484, Page 398 of Official Records, records of said County, at the point of termination of the last course of Parcel Two above.

Excepting therefrom those portions thereof lying within the lines of Parcel Three hereinabove described.

The side lines of said easement are to be lengthened or shortened, as the case may be, so as to intersect and terminate in the East line of said Armstrong Tract, "Parcel One".

PARCEL SIX:

An easement for ingress and egress and public utility purposes in, on, over, under, along and across a strip of land 12 feet in width, being a portion of Lot 10 in Tract "B" of the Rancho La Goleta, in the County of Santa Barbara, State of California, set apart to Jose Maria Hill, by Decree of Probate Court of said County on February 1, 1868 in the Matter of the Estate of Daniel A. Hill, deceased, as shown on the map accompanying the commissioner's report in said matter, said easement to lie Northeasterly of and adjacent to the fifth course of "Parcel One" as described in the deed to James F. McKone et ux., recorded December 5, 1958 as instrument No. 30310 in Book 1575, Page 540 Official Records, records of said county. The Northeasterly line of said easement to be lengthened and/or shortened to interest the fourth course and the Northeasterly extension of the sixth course of said McKone tract, "Parcel One".

PARCEL SEVEN:

An undivided 1/4 interest in and to those portions of Lot 10 in Tract "B" of the Rancho La Goleta, in the County of Santa Barbara, State of California, set apart to Jose Maria Hill, by decree of Probate Court of said county on February 1, 1868, in the matter of the Estate of Daniel A. Hill, deceased, as shown on map accompanying the Commissioner's Report in said matter, described as follows:

A. Beginning at a point in the Easterly line of the tract of land described in deed to Helen Dean Bogan, recorded November 8, 1957 as Instrument No. 23173 in Book 1484, Page 401 of Official Records, records of said county, distant thereon North 0°30' East 67.66 feet from the Southeast corner of said last mentioned tract; thence North 89°39' West 61.64 feet to the true point of beginning; thence South 88°36'30" West 6.40 feet; thence North 1°23'30" West 11.95 feet; thence North 88°36'30" East 6.40 feet; thence South 1°23'30" East 11.95 feet to the true point of beginning.

B. Beginning at a point in the Easterly line of the tract of land described in deed to Helen Dean Bogan, recorded November 8, 1957 as Instrument No. 23173 in Book 1484, page 401 of Official Records, records of said county, distant thereon North 0°30' East 221.91 feet from the Southeast corner of said last mentioned tract; thence North 89°30' West 49.48 feet to the true point of beginning; thence South 89°30' West 7.6 feet; thence North 0°30' West 24.22 feet; thence North 89°30' East 7.6 feet; thence South 0°30' East 24.22 feet to the true point of beginning.

TOGETHER with water pipeline system extending from parcels Seven A and B above over and across lands of the Grantor to the respective lands of the Grantee and together with all necessary easements of ingress and egress to and from the well and pumping plant located on said parcels Seven A and B for such purposes and together with easements, not to exceed five feet in width for maintenance, repair, replacement and/or removal of said water pipe line system and appurtenances; including also, right-of-way for power and telephone lines as they now exist through the following described property:

That portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at a point in the Easterly line of the tract of land described in the deed to Helen Dean

Bogan, recorded November 8, 1957 as instrument No. 23173 in Book 1484, page 401 of Official Records, records of said county, distant thereon North 0°30' East 399.52 feet from the Southeast corner of said last mentioned tract; thence leaving said last mentioned line, North 77°24'50" West 238.77 feet to a 3/4 inch survey pipe; thence South 88°51'40" West 140.34 feet to a 3/4 inch survey pipe set at an angle point in the Westerly line of said Bogan tract hereinbefore referred to, as shown on map of survey filed in Book 39, page 69 of Record of Surveys, in the office of the County Recorder of said county; thence along said Westerly line of said Bogan tract, the following courses and distances: North 47°37'10" East 176.08 feet; North 0°06'10" West 370.35 feet; and North 2°06'30" East 363.55 feet to the most Northerly corner of said last mentioned tract; thence South 84°06'40" East 239.51 feet to the Northeast corner of said Bogan tract of land; thence South 0°03' West along the Easterly line of said last mentioned tract 876.93 feet to the point of beginning.

29. John E. and Amet Newland, 4 acre parcel, meter/1 inactive well, five dwellings, fruit trees, vegetable garden, parcel #071-090-36.

PARCEL ONE:

That portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, being a triangular tract of land, described as follows:

Bounded on the East by the Westerly line of the lands formerly of Joseph Sexton, and described in Deed to F. P. Newland, et ux., recorded June 13, 1929 in Book 186, Page 210 of Official Records, Records of said County; and bounded on the Northwest and Southwest by the Easterly line of Tract 5 of the subdivision of the Estate of P. E. Kellogg, as shown on Map thereof, recorded in Book 1, Page 90 of Maps and Surveys, in the Office of the County Recorder of said County.

PARCEL TWO:

That portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at the Northwest corner of the tract of land described in Deed to F. P. Newland, et ux., recorded June 13, 1929 in Book 166, Page 210 of Official Records, Records of said County; thence North 85°43' West to intersect the Easterly line of Tract 4 of the subdivision of the Estate of P. E. Kellogg, as shown on Map thereof, recorded in Book 1, Page 90 of Maps and Surveys in the Office of the County Recorder of said County; thence South 38°44' East along said last mentioned line to its intersection with the Westerly line of said tract of land described in Deed to Newland above referred to; thence North 13°43' East along said last mentioned line to the point of beginning.

PARCEL THREE:

That portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at a point on the North line of Hollister Avenue as the same existed prior to January 1, 1927 distant thereon Westerly 2792.83 feet from Post No. 47, as shown on partition Map of the subdivision of the lands of Daniel A. Hill, Deceased, filed in the Office of the Clerk of the Superior Court of said County in said matter; thence Westerly along said North line of Hollister Avenue, 264.22 feet to the Southwest corner of the lands formerly of Joseph Sexton, as described in Deed to said Joseph Sexton, recorded June 7, 1869 in Book "H", Page 193 of Deeds, Records of said County; thence North 13°43' East along the Westerly line of said Sexton tract of land 1075.5 feet to the Northwest corner of said tract; thence Easterly along the Northerly line of said Sexton tract of land 107.21 feet to intersect a line drawn North 5°20' East from the point of beginning; thence South 5°20' West 1056.56 feet to the point of beginning.

Excepting from said Parcel Three, those portions described as Parcel Two-A in final Order of Condemnation entered June 28, 1961 in Santa Barbara County Superior Court Action No. 60615, a certified copy of which Order is recorded July 5, 1961 as Instrument No. 23433 in Book 1857, Page 157 of Official Records, Records of said County.

Also excepting from said Parcel Three, that portion thereof described in Deed to County of Santa Barbara, recorded August 8, 1963 as Instrument No. 33978 in Book 2006, Page 1248 of Official Records, Records of said County.

Also excepting from said Parcel Three, that portion thereof described in Deed to County of Santa Barbara and Santa Barbara County Flood Control and Water Conservation District, recorded September 23, 1963 as Instrument No. 40433 in Book 2013, Page 752 of Official Records, Records of said County.

Also excepting from said Parcel Three, those portions included within the tract of land hereinafter described as that portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at the Northwest corner of the tract of land described in Deed to F. P. Newland, et ux., recorded June 13, 1929 in Book 186, Page 210 of Official Records, Records of said County; thence South 13°43' West along the Westerly line of said land, 40 feet, more or less, to its intersection with the Easterly line of Tract 4 of the subdivision of the Estate of P. E. Kellogg, as said line is shown on Map of said subdivision, recorded in Book 1, Page 90 of Maps and Surveys, in the Office of the County Recorder of said County, said point of intersection being the true point of beginning of the tract of land herein described; thence along said Easterly line of said Tract 4, South 38°44' East 15 feet, more or less, to an angle point therein; thence continuing along said Easterly line of said Tract 4, South 8°28' West 150.15 feet to an angle point therein; thence continuing along said Easterly line of said Tract 4, South 26°23' West 125 feet, more or less, to its intersection with said Westerly line of said Newland tract of land above referred to; thence North 13°43' East along said last mentioned line 185 feet, more or less, to the true point of beginning.

Also excepting that portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at the Southwest corner of the tract of land described in Deed to F. P. Newland, et ux., recorded June 13, 1929 in Book 186, Page 210 of Official Records, Records of said County; thence North 13°43' East along the Westerly line of said Newland tract of land, 45 feet, more or less, to its intersection with the Southeasterly line of Tract 5 of the subdivision of the Estate of P. E. Kellogg, as same is shown on map of said subdivision, recorded in Book 1, Page 90 of Maps

and Surveys, in the Office of the County Recorder of said County said point of intersection being the true point of beginning of the tract of land herein described; thence North 63°46' East along said Southeasterly line of said Tract 5, a distance of 30 feet, more or less, to an angle point therein; thence along the Easterly line of said Tract 5, North 1°24' East 125 feet, more or less, to its intersection with the Westerly line of said Newland tract of land, hereinbefore referred to; thence South 13°43' West along said last mentioned line 150 feet, more or less, to the true point of beginning. Excepting therefrom those portions included within the lines of the tract of La Goleta described in Deed to County of Santa Barbara, recorded August 8, 1963 in Book 2006, Page 1248 of Official Records, Records of said County, and in Deed to County of Santa Barbara, et al., recorded September 23, 1963 in Book 2013, Page 752 of Official Records, Records of said County.

30. Patco Properties West, 14.58 acre parcel, no current use, parcel #69-100-56.

Parcel B of Parcel Map No. 11503 in the County of Santa Barbara, State of California, as shown on Map recorded in Book 9, Page 98 of Parcel Maps, in the Office of the County Recorder of said Santa Barbara County.

31. Patterson Professional Plaza, parcel #65-050-33, and Petterson Professional Plaza No. 2, parcel #65-050-34, 3.8 acre parcel, water use 12 AF, commercial land.

Parcel One and Parcel Two of Parcel Map No. 13126 in the County of Santa Barbara, State of California, as per map Filed in Book 26 Pages 89 and 90 of Parcel Maps in the Office of the County Recorder of said County.

32. Esper A. Petersen, Trustee of the Petersen Trust, 2.85 acre parcel, meter, vacant land, parcel #067-230-43.

That portion of Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at the Northwest corner of the tract of land described in the Deed to Eldon M. Smith, et ux., recorded January 12, 1966, as Instrument No. 4012 in Book 1137, Page 12 of Official Records, records of said

County, and as shown on a Map filed in Book 67, Page 34 of Record of Surveys, records of said County, from which the Southwest corner of Lot 7 in Tract 10112 as shown on said Map bears North 88°54' West 67.41 feet; thence 1st, South 0°47' West along the Westerly line of said Smith Tract 20.41 feet to the most Northerly corner of the tract of land described in right of way Grant to the County of Santa Barbara, recorded August 2, 1967, as Instrument No. 22031 in Book 2199, Page 653 of Official Records, records of said County, said point also being the beginning of a curve concave to the Southeast (the radial center of which bears South 13°51'09" East), having a delta of 33°16'51" and a radius of 597.37 feet; thence 2nd, Southwesterly along the Northwesterly line of said right of way and the arc of said curve 346.99 feet to the end thereof; thence 3rd, South 42°52' West along the Northwesterly line of said right of way 297.60 feet to the beginning of a curve to the right, said curve having a delta of 18°57'15" and a radius of 570.00 feet; thence 4th, Southwesterly along the Northwesterly line of said right of way and the arc of said curve 188.56 feet to the end thereof and a point in the Westerly line of Parcel One of tract of land described in Deed to John A. Lucian, et ux., recorded as Instrument No. 1039 in book 2135, Page 1423 of Official Records, records of said County; thence 5th, North 1°88'17" East leaving the Northwesterly line of said right of way and along the Westerly line of said Parcel One of said Lucian Trct 539.07 feet to the Northwesterly corner of said Parcel One; thence 6th, South 88°54' East along the Northerly line of said Parcel One 635.62 feet to the point of beginning.

Excepting therefrom that portion described as follows:

Beginning at the Northwest corner of the tract of land described in the Deed to Eldon M. Smith, et ux., recorded January 12, 1966 as Instrument No. 4012 in Book 1137, Page 12 of Official Records, records of said County, and as shown on a map filed in Book 67, Page 34 of record of surveys, records of said County, from which the Southwest corner of Lot 7 in Tract 10112 as shown on said map bears North 88°54' West 67.41 feet; thence 1st, South 0°47' West along the Westerly line of said Smith Tract 20.41 feet to the most Northerly corner of the tract of land described in right of way grant to the County of Santa Barbara, recorded August 2, 1967 as Instrument No. 22031 in Book 2199, Page 653 of Official Records, records of said County, said point also being the beginning of a curve concave to the Southeast (the radial center of which bears South 13°51'09" East), having a delta of 31°40'29" and a radius of 597.37 feet; thence 2nd, Southwesterly along the Northwesterly line of said right of way and the arc

of said curve 330.24 feet; thence 3rd, North 33°26'55" West 149.91 feet; thence 4th, North 1°06' East 63.83 feet to the Southerly line of said Tract 1012 distant North 88°54' West 365.00 feet from the point of beginning; thence 5th, South 88°54' East 365.00 feet to the point of beginning.

Also excepting from a portion of said land 25% of all oil rights below a depth of 500 feet, excluding any right of entry as reserved in Deed from Terry H. Darborn to John A. Lucian, et al., recorded August 7, 1958, as Instrument No. 18784 in Book 1545, Page 200 of Official Records.

33. R. H. Pollard and John A. Langford/BFA, 4.29 acre parcel, meter, commercial and vacant lot, parcel #071-190-34.

That portion of the Rancho La Goleta in the County of Santa Barbara, State of California, described as follows:

Beginning at the most Northwesterly corner of the land described in Parcel A in the Deed to the County of Santa Barbara and the Santa Barbara County Flood Control and Water Conservation District recorded July 24, 1961 as Instrument No. 25744 in Book 1860, Page 759 of Official Records in the Office of the County Recorder of said County, said point being the most Easterly corner of the land conveyed to Frank Isaac et al., by Deed recorded February 14, 1964 as Instrument No. 6984 in Book 2035, Page 1406 of said Official Records; thence along the Northerly boundary line of said land of Isaac et al., North 89°10'40" West 135.00 feet to the true point of beginning; thence South 0°49'20" West 66.15 feet to the beginning of a tangent curve concave Westerly having a radius of 30.00 feet; thence Southerly along said curve through a central angle of 43°19'54" an arc distance of 22.69 feet; thence South 44°09'14" West 115.03 feet to the beginning of a non-tangent curve concave Southerly having a radius of 490.00 feet, a radial line of said curve at said point bears North 31°50'57" East; thence Westerly along said curve through a central angle of 27°56'24" an arc distance of 238.95 feet; thence North 57°26'49" West 108.00 feet to the beginning of a non-tangent curve concave Southeasterly having a radius of 550.00 feet, a radial line of said curve at said point bears North 6°00'52" West; thence Southwesterly along said curve through a central angle of 76°10'37" an arc distance of 731.25 feet; thence on the Westerly prolongation of a radial line of said curve, North 82°11'29" West 60.00 feet to the beginning of a non-

tangent curve concave Easterly having a radius of 610.00 feet, a radial line of said curve at said point bears North 82°11'29" West; thence Southerly along said curve through a central angle of 21°33'50" an arc distance of 229.58 feet to the intersection with the Southwesterly boundary line of the land described in Parcel One in the Deed to Tony W. Pacliotti et al., recorded April 9, 1954 as Instrument No. 6048 in Book 1230, Page 443 of said Official Records; thence along said Southwesterly line, North 46°23'10" West 145.93 feet to the Southwest corner of said land; thence along the Westerly boundary line of said land of Pagliotti et al., North 0°19'30" West 445.87 feet to the Southwest corner of the land described in the Deed to the City of Santa Barbara recorded March 18, 1965 as Instrument No. 9637 in Book 2096, Page 337 of said Official Records; thence along the Southerly and Easterly boundary lines of said last mentioned land, North 89°41'52" East 99.98 feet to the Southeast corner thereof and North 0°19'30" West 212.01 feet to the intersection with the Northerly boundary line of said land of Pagliotti et al.; thence along said Northerly line, South 89°10'40" East 569.78 feet to the Northwest corner of the land conveyed to the State of California by Deed recorded May 12, 1960 as Instrument No. 15179 in Book 1742, Page 248 of said Official Records; thence along the Westerly boundary line of said last mentioned land, South 0°49'20" West 15.00 feet to the Southwest corner thereof; thence along the Southerly boundary line of said land, to and along the Northerly boundary line of said land of Isaac et al., South 89°10'40" East 380.57 feet to the true point of beginning.

34. **Rehabilitation Institute at Santa Barbara.** 20.12 acre parcel, water use 36AF per year, agricultural farming: row crops land use, parcel #69-160-36-002-2.

That portion of Lot No. 9 of the subdivision of the land of J. D. Patterson in La Goleta Rancho in the County of Santa Barbara, State of California, as shown on the map filed in Book B, Page 500 of Miscellaneous Records in the Office of the County Recorder of said County, described as follows:

Beginning at an angle point on the Southerly boundary line of Parcel A of Tract 10124 Unit One, as shown on the map filed in Book 54, Page 21 of Maps in the Office of said County Recorder at the Northwest corner of said Lot 9; thence Easterly along said Southerly line to and along the Southerly boundary line of Tract No. 10734 filed in Book 76, Page 34 of said Maps, 1510 feet, more or less, to the Northwest corner of Parcel C of Parcel Map No. 10507 filed in Book 1, Page 85 of Parcel Maps

of said curve 330.24 feet; thence 3rd, North 33°26'55" West 149.91 feet; thence 4th, North 1°06' East 63.83 feet to the Southerly line of said Tract 10112 distant North 88°54' West 365.00 feet from the point of beginning; thence 5th, South 88°54' East 365.00 feet to the point of beginning.

Also excepting from a portion of said land 25% of all oil rights below a depth of 500 feet, excluding any right of entry as reserved in Deed from Terry H. Darborn to John A. Lucian, et al., recorded August 7, 1958, as Instrument No. 18784 in Book 1545, Page 200 of Official Records.

33. R. H. Pollard and John A. Langford/BFA, 4.29 acre parcel, meter, commercial and vacant lot, parcel #071-190-34.

That portion of the Rancho La Goleta in the County of Santa Barbara, State of California, described as follows:

Beginning at the most Northwesterly corner of the land described in Parcel A in the Deed to the County of Santa Barbara and the Santa Barbara County Flood Control and Water Conservation District recorded July 24, 1961 as Instrument No. 25744 in Book 1860, Page 759 of Official Records in the Office of the County Recorder of said County, said point being the most Easterly corner of the land conveyed to Frank Isaac et al., by Deed recorded February 14, 1964 as Instrument No. 6984 in Book 2035, Page 1406 of said Official Records; thence along the Northerly boundary line of said land of Isaac et al., North 89°10'40" West 135.00 feet to the true point of beginning; thence South 0°49'20" West 66.15 feet to the beginning of a tangent curve concave Westerly having a radius of 30.00 feet; thence Southerly along said curve through a central angle of 43°19'54" an arc distance of 22.69 feet; thence South 44°09'14" West 115.03 feet to the beginning of a non-tangent curve concave Southerly having a radius of 490.00 feet, a radial line of said curve at said point bears North 31°50'57" East; thence Westerly along said curve through a central angle of 27°56'24" an arc distance of 238.95 feet; thence North 57°26'49" West 108.00 feet to the beginning of a non-tangent curve concave Southeasterly having a radius of 550.00 feet, a radial line of said curve at said point bears North 6°00'52" West; thence Southwesterly along said curve through a central angle of 76°10'37" an arc distance of 731.25 feet; thence on the Westerly prolongation of a radial line of said curve, North 82°11'29" West 60.00 feet to the beginning of a non-

tangent curve concave Easterly having a radius of 610.00 feet, a radial line of said curve at said point bears North 82°11'29" West; thence Southerly along said curve through a central angle of 21°33'50" an arc distance of 229.58 feet to the intersection with the Southwesterly boundary line of the land described in Parcel One in the Deed to Tony W. Pacliotti et al., recorded April 9, 1954 as Instrument No. 6048 in Book 1230, Page 443 of said Official Records; thence along said Southwesterly line, North 46°23'10" West 145.93 feet to the Southwest corner of said land; thence along the Westerly boundary line of said land of Pagliotti et al., North 0°19'30" West 445.87 feet to the Southwest corner of the land described in the Deed to the City of Santa Barbara recorded March 18, 1965 as Instrument No. 9637 in Book 2096, Page 337 of said Official Records; thence along the Southerly and Easterly boundary lines of said last mentioned land, North 89°41'52" East 99.98 feet to the Southeast corner thereof and North 0°19'30" West 212.01 feet to the intersection with the Northerly boundary line of said land of Pagliotti et al.; thence along said Northerly line, South 89°10'40" East 569.78 feet to the Northwest corner of the land conveyed to the State of California by Deed recorded May 12, 1960 as Instrument No. 15179 in Book 1742, Page 248 of said Official Records; thence along the Westerly boundary line of said last mentioned land, South 0°49'20" West 15.00 feet to the Southwest corner thereof; thence along the Southerly boundary line of said land, to and along the Northerly boundary line of said land of Isaac et al., South 89°10'40" East 380.57 feet to the true point of beginning.

34. **Rehabilitation Institute at Santa Barbara**, 20.12 acre parcel, water use 36AF per year, agricultural farming: row crops land use, parcel #69-160-36-002-2.

That portion of Lot No. 9 of the subdivision of the land of J. D. Patterson in La Goleta Rancho in the County of Santa Barbara, State of California, as shown on the map filed in Book B, Page 500 of Miscellaneous Records in the Office of the County Recorder of said County, described as follows:

Beginning at an angle point on the Southerly boundary line of Parcel A of Tract 10124 Unit One, as shown on the map filed in Book 54, Page 21 of Maps in the Office of said County Recorder at the Northwest corner of said Lot 9; thence Easterly along said Southerly line to and along the Southerly boundary line of Tract No. 10734 filed in Book 76, Page 34 of said Maps, 1510 feet, more or less, to the Northwest corner of Parcel C of Parcel Map No. 10507 filed in Book 1, Page 85 of Parcel Maps

in the office of said County Recorder; thence Southerly along the Westerly boundary line of said Parcel C 319.05 feet to the intersection with the Northwesterly boundary line of Calle Real as described in the Deed to the State of California recorded May 29, 1959 as Instrument No. 17433 in Book 1630, Page 320 of Official Records in the Office of said County Recorder and in the Deed to the County of Santa Barbara recorded December 29, 1966 as Instrument No. 40775 in Book 2176, Page 667 of said Official Records; thence Southwesterly along said Northwesterly line of Calle Real to the intersection with the Southwesterly boundary line of said Lot No. 9; thence Northwesterly along said Southwesterly line and Northerly along the Westerly boundary line of said Lot 9 to the point of beginning.

35. San Lorenzo Nursery Co., 60 acre parcel, not using well/metered, greenhouse and crops use, parcel #71-190-36.

PARCEL ONE:

That certain real property located in the County of Santa Barbara, State of California, and more particularly described as follows:

Beginning at a 2-inch brass-capped survey monument set at the Southwest corner of Orchard Tract No. 1, as shown on "Map of a Portion of the John P. More Estate", recorded in Book 17 at pages 188 and 189 of Record of Surveys of Santa Barbara County, California; thence 1st, along the Southerly line of said Orchard Tract No. 1 and Orchard Tract No. 3, as shown on said map, North 86°09' East 1096.17 feet to a point on the center line of a 20 foot roadway; thence 2nd, leaving the Southerly line of Orchard Tract No. 3 and along the center line of said 20 foot roadway; South 0°04'30" West 476.53 feet; thence 3rd, leaving said roadway South 86°09' West 1102.89 feet to a point in the Easterly line of a 49.898 acre tract, as described in the deed recorded in Book 38 at page 401 of Official Records; thence 4th, along said Easterly line North 0°53' East 477.04 feet to the place of beginning.

PARCEL TWO:

That certain real property located in the County of Santa Barbara, State of California, and more particularly described as follows:

Beginning at a point in the Easterly line of a 49.898 acre tract of land described in the deed recorded in Book 38 at page 401 of Official

Records, distant thereon South 0°53' West 477.04 feet from the Southwest corner of Orchard Tract No. 1, as shown on "Map of a Portion of the John F. More Estate", recorded in Book 17 at pages 188 and 189 of Record of Surveys, of said County; thence 1st, leaving the Easterly line of said 49.898 acre tract, North 86°09' East 1102.89 feet to a point on the center line of a 20 foot roadway; thence 2nd, along said center line South 0°04'30" West 473.64 feet; thence 3rd, leaving said center line South 86°09' West 1109.57 feet to a point in the Easterly line of said 49.898 acre tract; thence 4th, along said Easterly line North 0°53' East 474.15 feet to the place of beginning.

PARCEL THREE:

That certain real property located in the County of Santa Barbara, State of California, and more particularly described as follows:

Beginning at a point in the Easterly line of a 49.898 acre tract of land as described in the deed recorded in Book 38 at page 401 of Official Records of Santa Barbara County, California, distant thereon South 0°53' West 951.19 feet from the Southwest corner of Orchard Tract No. 1 as shown on "Map of a portion of the John F. More Estate", recorded in Book 17 at page 188 and 189 of Record of Surveys of said County; thence 1st, leaving the Easterly line of said 49.898 acre tract, North 86°09' East 1109.57 feet to a point on the center line of a 20 foot roadway; thence 2nd, along said center line South 0°04'30" West 521.39 feet to a point in the Northerly line of the tract of land as shown on the map filed in Book 29 at page 164 of Record of Surveys; thence 3rd, along said Northerly line, South 77°09' West 201.86 feet to a 3/4 inch survey pipe, from which the Northwest corner of said last mentioned tract bears North 77°09' East 41.71 feet; thence 4th, South 84°38' West 113.68 feet to a 3/4 inch survey pipe; thence 5th, North 80°57' West 163.59 feet to a 3/4 inch survey pipe; thence 6th, South 86°36' West 666.10 feet to a 3/4 inch survey pipe from which a 2 inch brass-capped survey monument set at the Southeast corner of said 49.898 acre tract of land above described bears North 8°09' West 173.98 feet; thence 7th, South 89°42'30" West 1015.80 feet to a point in the Northwesterly line of Tract No. 1 of said Map of the John F. More Estate; thence 8th, along said Northwesterly line North 0°53' West 130.00 feet to a 2 inch brass-capped survey monument; thence 9th, North 87°23' East 1039.48 feet to a 2 inch brass-capped survey

monument set in the Northwesterly line of said Tract No. 1; thence 10th. along the Westerly line of Tract No. 1 North 0°53' East 343.91 feet to the place of beginning.

PARCEL FOUR:

That certain real property in the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Commencing at a 2" brass capped survey monument set at the Southwest corner of Orchard Tract No. 1 as shown on Map of a portion of the John F. More Estate, recorded in Book 17, Pages 188 and 189 of Record of Surveys, Santa Barbara County, California; thence along the Southerly line of Orchard Tract No. 1 and No. 3, as shown on said map, North 86°09' East 1096.17 feet to a 3/4 inch survey pipe set at the true point of beginning of the property herein described; thence, North 86°09' East, along the Southerly line of Orchard Tract No. 3, a distance of 341.01 feet to a 1/2 inch survey pipe set at the Northwest corner of a 100 foot square well site; thence South 3°51' East 100 feet to a 1/2" survey pipe set at the Southwest corner of said well site; thence North 86°09' East, along the Southerly line of said well site (at 100 feet a 3/4 inch survey pipe) 200 feet to a 1/2" survey pipe set at the most Southeast corner of another 100 foot square well site; thence, North 3°51' West, 100 feet to a 1/2 inch survey pipe set on the Southerly line of said Orchard Tract No. 3; thence North 86°09' East, and along said Southerly line of said Orchard Tract No. 3, a distance of 486.52 feet to a 1/2 inch survey pipe set at the Southeast corner of said Orchard Tract No. 3, being also a point on the centerline of a 40 foot right of way as shown on said map of said John F. More Estate, known as More Road; thence South 1°07' West and along said centerline of said road, being also the Westerly line of Tract No. 2 of the John F. More Estate 940.92 feet to a 2" brass capped survey monument; thence continuing along said centerline and said Westerly line, South 16°07' West 271.37 feet to a 3/4 inch survey pipe; thence leaving said center line South 67°17'30" West, along the Northwesterly line of said Tract No. 2 of said More Estate 723.64 feet to a 3/4" survey pipe; thence South 77°09' West 272.74 feet to a 3/4 inch survey pipe set at the Southeast corner of the tract of land described as Parcel One in the deed to LeRoy Youts, recorded May 22, 1951 as Instrument No. [illegible] in Book 992, page 74 of Official Records;

thence North 0°04'30" East, and along the Easterly line of said Youts Tract, and along the Easterly line of the tract of land described as Parcel One in the deed to Ebbo Dekema, recorded May 22, 1951 as Instrument No. 7888 in Book 992, page 67 of Official Records, and along the Easterly line of the tract of land described as Parcel One in the deed to Arthur L. Dettweiler et ux., recorded May 22, 1951 as Instrument No. 7885 in Book 992, page 59 of Official Records, 1471.56 feet to the true point of beginning.

EXCEPTING from Parcels Three and Four, that portion granted to the County of Santa Barbara and described as follows:

Beginning at the Southeasterly corner of Parcel One described in the Deed to Shinoda Brothers, Inc., recorded May 1, 1959 as Instrument Number 13817 in Book 1621, Page 175 of Official Records in the Santa Barbara County Recorder's Office; thence along the Southerly boundary of said Parcel One, the following courses and distances: (1) South 77°08'08" West, 201.86 feet; thence (2) South 84°37'08" West, 113.68 feet; thence (3) North 80°57'52" West, 163.59 feet; thence (4) South 86°35'08" West, 666.10 feet; thence (5) South 89°41'38" West, 1015.80 feet to a point in the Easterly boundary of the parcel of land designated Parcel C and shown on Map filed in Book 69, Page 66, Record of Surveys in said County Recorder's Office; thence (6) along said Easterly boundary North 0°52'08" East, 75.50 feet; thence (7) leaving said Easterly boundary North 89°18'05" East, 171.36 feet; thence (8) North 83°20'37" East, 98.25 feet; thence (9) North 79°08'18" East, 199.12 feet; thence (10) North 87°25'45" East, 201.00 feet; thence (11) North 88°17'03" East, 402.04 feet; thence (12) North 81°19'17" East, 100.26 feet; thence (13) South 89°52'07" East, 587.00 feet; thence (14) North 85°58'31" East, 197.06 feet; thence (15) North 76°30'54" East, 227.11 feet; thence (16) North 68°46'17" East, 487.63 feet; thence (17) North 65°31'48" East, 544.27 feet; thence (18) North 40°41'05" East, 60.09 feet to an angle point in the Easterly boundary of the Parcel of land described in the Deed to Shinoda Brothers, Inc., recorded May 1, 1959, as Instrument No. 13814, in Book 1621, Page 169 of Official Records in said County Recorder's Office; thence along the Easterly and Southerly boundaries of said last mentioned parcel of land, the following courses and distances: (19) South 16°06'08" West, 271.37 feet; thence (20) South 67°16'38" West, 723.64 feet; thence (21) South

77°08'08" West, 272.74 feet to the point of beginning.

ALSO EXCEPTING from Parcel One, Two, Three and Four all gas now or hereafter produced from area underlying said land lying between the lowest limits of the zone commonly known as the "Vaqueros Sand", and surface of the grounds and such oil as is now known to exist in development of gas from said "Vaqueros Sand", in said area above referred to, as described in the deed to Pacific Lighting Corporation, a Corporation, recorded in Book 510, at Page 269 of Official Records, records of said County. (Said deed provides production of said gas and oil is to be either by a vertically straight hole or by some method of directional or offset drilling from land that is West of the land herein described.)

ALSO EXCEPTING from Parcels One, Two, Three, and Four, six percent of all oil, gas or other hydrocarbon substances in and upon said land, as reserved in deed from First National Trust and Savings Bank of Santa Barbara, a National Banking Association, as Trustee, under will of Miriam E. More, deceased, dated March 9, 1945, and recorded March 20, 1945, in Book 634, Page 484 of Official Records, in the Office of the County Recorder of said County.

36. Santa Barbara Elks Lodge No. 613, 4.9 acre parcel, meter/2 inactive wells, building and vacant lot, parcel #069-160-13.

That portion of Tract 3 as shown upon the map entitled "Map of the Subdivision of the Estate of P. E. Kellogg, surveyed by Frank F. Flournoy, County Surveyor, December 1900" filed in Book 1 of Maps and Surveys at page 90, in the office of the County Recorder of said County, being a portion of the Rancho La Goleta in the County of Santa Barbara, State of California, described as follows:

Beginning at a stake on the Northerly line of the Estate of P. E. Kellogg, the same being the Northeast corner of Tract No. 2 of said Subdivision of the Estate of P. E. Kellogg; thence South 86°20' East along fence and Northerly line of said Estate of P. E. Kellogg, at 137.28 feet to a point on line with A.B. Stevens West line fence, at 422.40 feet to the corner of said San Jose Creek, 498.96 feet to the Northeast corner of said Estate of P. E. Kellogg; thence South 3° West 217.80 feet to the center of said San Jose Creek; thence down

the center of said San Jose Creek, following its meanderings: South 20° West 438.90 feet; South 64°50' East, 150.48 feet; South 54°18' East to the Northerly line of the State Highway as described in Deed to State of California, recorded May 7, 1946 in Book 689, page 87 of Official Records, records of said County; thence Westerly along the Northerly line of said State Highway to its intersection with the center line of Depot Road, being a point on West line of said Tract No. 3, distant North 0°02'30" West, 211.83 feet from a 1/2" pipe set for the intersection of said West line of Tract No. 3 and the Northern boundary line of the Southern Pacific Railroad Company's Goleta Station grounds and for the Southwest corner of said tract No. 3; thence along the center line of Depot Road and West line of said Tract No. 3, North 0°02'30" West, 880.80 feet to the point of beginning.

EXCEPTING therefrom the interest conveyed to the County of Santa Barbara, a body corporate and politic, recorded May 11, 1901, in Book 77, page 160 of Deeds, records of said County.

ALSO EXCEPTING therefrom any portion thereof lying within the lines of the tract of land described in the deed to Joseph D. Langman, et al., recorded April 29, 1910 in Book 126, page 519 of Deeds, records of said County.

ALSO EXCEPTING therefrom any portion thereof lying Northerly of the land described in the quitclaim deed to Minnie B. Coffey, et al., recorded September 12, 1929 in Book 194, page 291 of Official Records, records of said County.

ALSO EXCEPTING therefrom that portion thereof described in the Deed to State of California, recorded June 16, 1959 as Instrument Number 19381 in Book 1635, page 5 of Official Records, records of said County.

ALSO EXCEPTING therefrom that portion thereof described in the Deed to H. C. Elliott of Pasadena, a corporation, recorded April 14, 1960 as Instrument Number 12089 in Book 1733, page 478 of Official Records.

ALSO EXCEPTING therefrom that portion thereof, described as follows:

Beginning at a point in the Easterly line of Kellogg Avenue, (40 feet wide) from which the Northwesterly corner of the tract of land described in the Deed to the State of California, recorded June 16, 1959 as Instrument Number 19381 in Book 1636, page 5 of Official Records, records of said County, bears South

0°02'30" East, 200.00 feet; thence South 0°02'30" East along the Easterly line of said Kellogg Avenue, 86.06 feet to the true point of beginning; thence continuing South 0°02'30" East along the Easterly line of said Kellogg Avenue 113.94 feet to said Northwesterly corner; thence South 50°42'19" East along the Northerly line of said State of California tract of land, 111.98 feet to an angle point in said Northerly line; thence continuing along said Northerly line North 80°05'02" East 112.09 feet to a point on said line; thence North 0°02'30" West, 200.00 feet more or less, to a point from which the point of beginning bears South 80°05'02" West; thence South 80°05'20" West, 200.00 feet, more or less, to the true point of beginning.

37. Santa Barbara Metropolitan Transit District, 18.9 acre parcel, ag meter, parcel #59-140-04, 59-140-05, 59-140-06, 67-230-26.

All that certain land situated in the State of California in the unincorporated area of the County of Santa Barbara, described as follows:

PARCEL ONE:

The East 1/2 of Lot 3 of the Outside Pueblo Lands of the City of Santa Barbara, in the County of Santa Barbara, State of California, as shown on Survey Map No. 2, by W. H. Norway, approved by the Board of Trustees of the Town of Santa Barbara on November 16, 1867.

EXCEPT that portion thereof lying Southerly of the Northerly line of property conveyed to the State of California, by deed recorded December 29, 1958 as Instrument No. 32412 in Book 1581, Page 288 of Official Records.

ALSO EXCEPTING THEREFROM 50% of all oil, gas and other hydrocarbon substances lying 500 feet below the surface thereof, with no right of entry, as reserved in Deed from Antonio Cavalli, et al., recorded August 14, 1964 as Instrument No. 34895 in Book 2065, Page 237 of Official Records.

PARCEL TWO:

The Westerly 1/2 of Lot 3 of the Outside Pueblo Lands of the City of Santa Barbara, in the City of Santa Barbara, County of Santa Barbara, State of California.

EXCEPTING THEREFROM that portion thereof which lies Southerly of the Northerly line of the parcel of land

described in the Deed to the State of California recorded November 3, 1958 as Instrument No. 27043, in Book 1567, Page 208 of Official Records.

PARCEL THREE:

Parcel D of Parcel Map No. 10766 on file in Book 3 Page 87 of Parcel Maps, in the Office of the County Recorder of said County.

38. Sungate Associates. 11.89 acre parcel, water use 25AF. row crops..parcel #065-080-12.

That portion of Lot 2, Tract "C", of the Rancho La Goleta, in the County of Santa Barbara, State of California, partitioned to Lucretia Hill by Decree of the Probate Court of said County, February 1, 1868, in the Matter of the Estate of Daniel A. Hill, Deceased, as shown on the map accompanying the Commissioner's report in said matter, described as follows:

Beginning at the Southwesterly corner of said lot, and at Station No. 11 of said survey; and running thence along the Northerly line of Hollister Avenue North 77° East 550.44 feet to the center of a 40 foot road; thence along the center of said road North 3°48' East 981.06 feet; thence South 77° West 544.02 feet to the Westerly line of said lot; thence South 4°09' West along said line 984.2 feet to the point of beginning.

39. Turnpike Road Church of Christ, 3.57 acre parcel, water use 1.845 AF. church. parcel #067-130-15.

That portion of the tract marked "D. Hill 2" in Class or Division "B" of the Rancho La Goleta, in the unincorporated area of the County of Santa Barbara, State of California, partitioned to F. Daniel Hill, by Decree of Probate Court of said County on February 1, 1868, in the Matter of the State of Daniel A. Hill, deceased, as shown on the map accompanying the Commissioner's Report in said matter, described as follows:

Beginning at a 1/2 inch survey pipe set on the Northwesterly line of Turnpike Road, being of variable widths, at the most Southerly corner of the tract of land conveyed in the deed to Eric Childs and Ruby Childs, husband and wife, recorded April 30, 1962, as Instrument Number 17311 in Book 1923, page 122 of Official Records, records of said County; thence along the Northwesterly line of said Turnpike Road, South 41°17'29" West 155.78 feet to a 1-1/4 inch survey pipe marked "S.B. Co. Surveyor" set at the beginning of a

non-tangent curve, concave to the Southeast, having a delta of 26°17'45", a radius of 560.00 feet and a chord which bears South 24°27'47" West 254.76 feet; thence along the arc of said curve 257.01 feet to a 1/2 inch survey pipe set on the Southerly line of the tract of land conveyed in the deed to George H. Hughes and Zelda H. Hughes, husband and wife, recorded May 4, 1953, as Instrument Number 7235 in Book 1149, page 218 of Official Records, records of said County; thence along the Southerly line of said Hughes tract, North 89°24'20" West 223.00 feet to a 1/2 inch survey pipe set at the Southwest corner thereof; thence along the Westerly line of said Hughes Tract, North 0°50'20" West 238.62 feet to a 2 inch B. C. Monument; thence continuing along said Westerly line, North 2°16'07" East 208.90 feet to a 1/2 inch survey pipe; thence leaving said Westerly line, North 75°41'47" East 254.17 feet to a 1/2 inch survey pipe; thence South 86°20'43" East 61.38 feet to a lead plug and tag set in a boulder in San Antonio Creek at an angle point in the Westerly line of said Childs tract; thence along the West line of said Childs tract, South 9°13'40" West 37.32 feet to a 1/2 inch survey pipe set at an angle point therein; thence along the Southwesterly line of said Childs tract, South 45°11'20" East 175.14 feet to the point of beginning.

The land herein described is shown with other lands on a map of survey filed April 13, 1964, in Book 67, page 61 of Record of Surveys, in the office of the County Recorder of said County.

40. University Properties, 26.85 acre parcel, water use 4.49 AF, industrial buildings, auto crushing and processing, storage, contracting yard and landscaping, parcel #71-170-73.

PARCEL ONE A:

These portions of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at a 3/4 inch pipe survey monument set at the most Southwesterly corner of the tract of land described in Deed to Harry Pine Drake, et ux., as Parcel No. One, recorded in Book 429, page 498 of Official Records, records of said County; thence North 89°10'30" West at right angles with the West line of said last mentioned tract of land, 8771.12 feet to a point on the East line of the tract of land known as "Fairfield", more fully shown on a map of survey filed

in Book 21, pages 19 and 20, Record of Surveys, records of said County; thence North 0°20'30" West, along said East line of said "Fairfield", 818 feet; thence South 89°10'30" East, leaving said East line of said "Fairfield", 787 feet, more or less, to the Westerly line of the tract of land described as Parcel One in the deed to Harry Pine Drake, et ux., hereinabove referred to; thence along the Westerly line of said Drake Tract of land, South 0°49'30" West 818 feet, more or less, to the point of beginning.

EXCEPTING therefrom that portion described in the Deed to the State of California, recorded June 20, 1960 as Instrument No. 19398, in Book 1755, page 31 of Official Records, records of said County, being described as follows:

Beginning at the Southeasterly corner of Parcel One hereinabove described; thence along the Southerly line of said parcel, North 88°02'42" West 101.44 feet; thence Northerly at right angles to last described course, a distance of 45.00 feet; thence South 88°02'42" East 101.53 feet to a point on the Easterly line of said parcel; thence along last said line, South 2°04'34" West 45.00 feet to the point of beginning.

PARCEL ONE B:

Those portions of the Rancho La Goleta, in the County of Santa Barbara, State of California, described as follows:

Beginning at a 3/4 inch pipe survey monument set at the most Southwesterly corner of the tract of land described in Deed to Harry Pine Drake, et ux., as Parcel No. One, recorded in Book 429, page 498 of Official Records, records of said County; thence North 89°10'30" West at right angles with the West line of said last mentioned tract of land, 771.12 feet to a point on the East line of the tract of land known as "Fairfield", more fully shown on a map of a survey filed in Book 21, pages 19 and 20, Record of Surveys, records of said County; thence North 0°20'30" West, along said East line of said "Fairfield", 1410.94 feet to a 3/4 inch pipe survey monument set at the most Southeasterly corner of the tract of land shown as Lot 11 in Block "A" of said "Fairfield" on map above mentioned; thence North 71°25'40" East, leaving said East line of said "Fairfield", and following along the approximate center line of San Jose Creek, 246.93 feet to an angle point therein; thence North 60°38' East, continuing along said approximate center line of said creek, 611.34 feet to an angle point therein, from which a 1/2 inch pipe survey monument set on the North bank of said creek bears North 0°10' East 31.96 feet;

thence North 66°00' East, continuing along said approximate center line of said creek, 23.39 feet to the Northwest corner of the tract of land described in Deed to James Smith, et ux , recorded August 7, 1951 as Instrument No. 11732 in Book 1008, page 163 of Official Records, records of said County; thence along the Westerly line of said last mentioned tract of land, South 2°45'15" East 158.26 feet to the beginning of a curve to the right; thence continuing along said last mentioned line, along the arc of said curve which is tangent to last mentioned course, said curve having a delta of 02°24'54" and a radius of 3040.00 feet, a distance of 128.14 feet to end of said curve; thence continuing along said last mentioned line, South 0°29'21" East 37.40 feet to the Southwest corner of said Smith tract and the Northeasterly corner of the tract of land described as Parcel One in Deed to Harry Pine Drake, et ux., hereinabove referred to; thence along the Westerly line of said Drake Tract of land, South 0°49'30" West 1486.65 feet to the point of beginning.

EXCEPTING THEREFROM:

That portion described as follows:

Commencing at the intersection of the Southerly boundary of Thornwood Drive with the Easterly boundary of the 28.98 acre parcel of land as particularly shown on map filed in Book 67, page 45, Record of Surveys in the Santa Barbara County Recorder's Office; thence along the Easterly boundary of said 28.98 acre parcel of land, North 0°49'30" East, 284.84 feet to the true point of beginning; thence continuing along said Easterly boundary the following courses and distances: North 1°26'20" East, 38.10 feet to a point in the arc of a 3,040.00 foot radius curve, concave Westerly and whose radial center bears, South 89°25'25" West; thence Northerly along the arc of said curve, through a central angle of 2°24'54", a distance of 128.14 feet; thence tangent to said last described curve, North 2°59'29" West, 158.25 feet to the Northeasterly corner of said 28.98 acre parcel of land; thence along the Northerly boundary of said parcel of land the following courses and distances: South 65°58'13" West, 23.39 feet; thence South 60°36'18" West, 16.49 feet; thence leaving said Northerly boundary, South 2°59'15" East, 16.66 feet to the beginning of a 500.00 foot radius curve, concave Easterly and tangent to the last described course; thence Southerly along the arc of said curve, through a central angle of 14°18'49", a distance of 124.91 feet to the beginning of a 536.45 foot radius

reverse curve, concave Westerly and whose radial center bears South 72°41'56" West; thence Southerly along the arc of said reverse curve, through a central angle of 18°07'34", a distance of 169.71 feet; thence tangent to said last described curve, South 0°49'30" West, 0.07 feet to the true point of beginning.

PARCEL TWO:

A non-exclusive right of way for the purpose of ingress and egress and for the installation, maintenance and repair of public utilities, in, on, over, through, along and upon a strip of land 20 feet in width, being 10 feet on each side of the following described center line:

Beginning at a point from which the Easterly end of the 4th course described in Parcel One above bears South 89°50' east 10.00 feet; thence North 0°10' East 714.74 feet to a point in the Northerly line of Parcel One described in Deed to W. C. Oakley, Jr., et al., recorded in Book 186, page 1 of Deeds, records of said County, being also a point in the present Southerly line of Pine Avenue, as said Pine Avenue now exists, leading Southerly from the State Highway or Hollister Avenue.

PARCEL THREE:

That portion of Rancho La Goleta in the County of Santa Barbara, State of California, described as follows:

Beginning at a 3/4 inch survey pipe set at the Southeasterly corner of the tract of land shown as Lot 11 in Block "A" of the "Fairfield" tract as shown on a map of survey filed in Book 21, pages 19 and 20 of Record of Surveys in the office of the County Recorder of said County; thence North 71°25'40" East following the approximate center line of San Jose Creek 246.93 feet, more or less, to the Northerly line of the tract of land described as Parcel Three in the Deed to Leslie D. Oakley, recorded March 3, 1943 as Instrument No. 14422 in Book 567, page 30 of Official Records, records of said County; thence Westerly along said Northerly line to the Northwesterly corner of said Oakley tract of land; thence Southerly along the Westerly line of said Oakley tract of land to the point of beginning.

41. David D. Van Rees, Jr. and and Margit C. Van Rees, 2.23 acre parcel, water use 3.5 AF, 2 houses, lemons,

avocados and miscellaneous vegetables. parcel #65-180-51. 65-180-05.

All that certain land situated in the State of California in the unincorporated area of the County of Santa Barbara, described as follows:

The real property in the County of Santa Barbara, State of California, described as follows:

PARCEL ONE:

That portion of Lot 2 of the subdivision of the lands of A. C. Scull, deceased, in the Rancho La Goleta, in the County of Santa Barbara, State of California, as per map filed in Book One, Page 77 of Maps and Surveys, in the Office of the County Recorder of said County, described as follows:

Beginning at the Northwest corner of said Lot 2, said corner being a point in the center line of Hollister Avenue, as said avenue existed on March 10, 1989; thence North 77°02'30" East, along the Northerly line of said Lot 2, a distance of 297.92 feet to the Northeast corner of the tract of land described in Quitclaim Deed to David D. Van Rees, Jr., recorded January 28, 1960 as Instrument Number 2949, in Book 1709, Page 547 of the Official Records, records of said County; thence South 2°21'34" West along said Van Rees tract of land 522.60 feet to a 3/4 inch survey pipe set at the Northeast corner of Tract 10350, as shown on the map thereof recorded March 1, 1965, in Book 73, Page 66 of Maps, in the Office of the County Recorder, of said County; thence North 87°39'05" West, along the North line of said Tract 10350 and its Easterly prolongation, 287.66 feet to a point on the Westerly line of Lot 2; thence North 2°22'30" East along said Westerly line 412.91 feet to the point of beginning.

EXCEPTING THEREFROM the following described property:

That portion of Lot 2 of the subdivision of the lands of A. C. Scull, deceased, in the Rancho La Goleta, in the County of Santa Barbara, State of California, as per map filed in Book One, Page 77 of Maps and Surveys, in the Office of the County Recorder of said County described as follows:

Beginning at the Northwest corner of said Lot 2 and running thence South 2°22'30" West along the Westerly line of said Lot 2, 223.63 feet; thence North 77°42' East 223.02 feet to the true point of beginning; thence North 2°21' East 25 feet; thence North 77°42' East 50 feet; thence South 2°21' West 50 feet; thence South

77°42' West 50 feet; thence North 2°21' East 25 feet to the point of beginning.

Said Parcel One above described, is shown on the map recorded in Book 73, Page 67 of Maps in the Office of the County Recorder of said County.

PARCEL TWO:

An easement for the natural and artificial drainage and surplus irrigation waters, over the Northerly 18' of Lots 27 and 28, and the Southeasterly 5 feet of Lot 27 and the Northwesterly 5 feet of 26, all of Tract 10350 as per map recorded in Book 73, Pages 66 and 67 of the Maps in the Office of the County Recorder in the County of Santa Barbara, State of California.

DESCRIPTION:

All that certain land situated in the State of California in the unincorporated area of the County of Santa Barbara, described as follows:

PARCEL THREE:

An undivided 2/3 interest in and to the following described property:

That portion of Lot 2 of the Subdivision of the lands of A. C. Scull, deceased, in the Rancho La Goleta, in the County of Santa Barbara, State of California, as per map filed in Book One, Page 77 of Maps and Surveys, in the Office of the County Recorder of said County described as follows:

Beginning at the Northwest corner of said Lot 2 and running thence South 2°22'30" West along the Westerly line of said Lot 2, 223.63 feet; thence North 77°42' East 223.02 feet to the true point of beginning; thence North 2°21' East 25 feet; thence North 77°42' East 50 feet; thence South 2°21' West 50 feet; thence South 77°42' West 50 feet; thence North 2°21' East 25 feet to the point of beginning.

PARCEL FOUR:

The right to operate, maintain, repair and draw water from the pipe line as laid March 7, 1935, in and upon the land now owned by George and Margaret Northman. Said pipe line being located on a line beginning about 300 feet Southerly from the Northerly line of Lot 2 hereinafter referred to, and about 25 feet Easterly from the following line, to wit:

Beginning on the Northerly line of Lot 2 of the Subdivision of A. C. Scull's Estate, in the County of Santa Barbara, State of California, according to the map thereof recorded in Book 1 of Maps and Surveys at Page 77, records of said County, 297.92 feet North 77°02'30" East from the Northwest corner of said Lot 2; thence South 2°2)' West 1546.67 feet to the Southerly corner of said Lot 2.

42. Edward V. and Rose E. Waters, 2.8 acre parcel, meter, home and avocados, parcel #069-080-25.

Beginning at a 3/4 inch survey pipe set at the Northeasterly corner of the tract of land described in Deed to Earl C. Johnstone, Jr., et al., recorded February 8, 1955 as Instrument No. 2383 in Book 1296, page 129 of Official Records in the Santa Barbara County Records, from which a 2 inch survey monument bears South 89°45' East 133.94 feet; thence first, South 46°07' West 185.95 feet; thence second, South 24°26' West 174.78 feet; thence third, South 52°08' West 95.40 feet; thence fourth, South 22°23' West 148.53 feet to the Northerly line of the tract of land described in Deed to Carl W. Chandler, et ux., recorded October 1, 1954 as Instrument No. 16981 in Book 1271, page 139 of Official Records, records of said County; thence fifth, North 89°26' West along the Northerly line of said Chandler Tract, (at 205.14 feet to a 3/4 inch survey pipe set on the Easterly bank of a wash), 230.14 feet to a point in the center line of said wash; thence sixth, North 40°34'30" East 120.45 feet; thence seventh, North 18°04'30" East 183.73 feet; thence eighth, North 35°26' East 211.80 feet to the Northerly line of said tract of land described in the Deed to Johnstone, Jr., hereinabove mentioned; thence tenth, South 89°45' East along the Northerly line of said last mentioned trust, 232.49 feet to the point of beginning.

EXCEPTING THEREFROM an undivided one-half interest in and to all minerals, oil, petroleum and other hydrocarbon substances in and upon said land, as reserved by James C. Beber, et ux., in deed to W. Russell Redd, et ux., recorded October 30, 1951 as Instrument No. 16365 in Book 1025, Page 409 of Official Records.

PARCEL TWO:

An Easement for road and public utilities purposes, for ingress and egress over, under, upon or through the following described parcel of land:

Beginning at the point of beginning of the parcel of land hereinabove decribed, as Parcel One; thence first,

North 89°45' West along the tenth course of said Parcel One hereinabove described, 28.24 feet; thence second, North 45°10' East 39.86 feet; thence third, South 0°05' West 28.24 feet to the point of beginning.

PARCEL THREE.

An Easement for road and public utilitiy purposes, over, under, upon and through a strip of land 20 feet wide, lying within that certain parcel of land shown as Parcel "A" on the subdivision map of Tract 10,232, in the County of Santa Barbara, State of California, recorded in Book 71, page 70 of Maps, in the Office of the County Recorder of said County, said strip lying Easterly of and adjacent to the following described lines:

Beginning at an angle point in the Southerly line of said Parcel "A" (said angle point bears along said Southerly line, North 89°45' West 232.49 feet from the most Westerly line of said Parcel "A"); thence North 35°26' East 28.89 feet to a point in the curve of the Southerly line of Via Salermo, said point lies Westerly along the arc of said curve (having a radius of 173.00 feet), through a delta of 3°30'20", a distance of 10.58 feet from the Easterly and thereof.

43. David R. and Mable R. Wells. 4.7 acre parcel, water use .126 AF, avocados, pasture, landscape use, parcel #069-620-44.

Those portions of Lot 10 partitioned to J. Ramon M. Hill and of Lot 8 partitioned to Ada Hill, in Tract "C" of the Rancho La Goleta, in the County of Santa Barbara, State of California, as partitioned by the Probate Court of said County on February 1, 1868, in the matter of the Estate of Daniel A. Hill, deceased, as shown on the map accompanying the Commissioner's Report in said matter, described as follows:

Beginning at Post No. 60 of the partition survey of the Rancho La Goleta as shown on the map above referred to, said post No. 60 being the most Northwesterly corner of the land set off in partition to the heirs of J. J. Hill, said point being also on the Northern boundary of said Rancho La Goleta; thence South 0°21' West along the Westerly line of the land so set off in partition to the heirs of J. J. Hill, 1537.80 feet, more or less, to a 1-1/2 inch survey pipe set for Post No. 59 of said Rancho La Goleta, and the most Southwesterly corner of the land so set off in partition to the heirs of J. J. Hill; thence South 81°01' East along the Southerly line of said land so set off to the heirs of J. J. Hill and

the line between Lots No. 8 and 9 of Tract "C", as shown on said partition map, 100.00 feet to a 1-1/2 inch survey pipe; thence South 2°00' West 50.26 feet to a 3/4 inch survey pipe; thence North 80°52' West 140.03 feet to a 3/4 inch survey pipe set by the side of an old fence post; thence North 2°00' East along an old fence 50.00 feet to an iron spike driven into the top of an old fence post from which Post No. 59 of said partition survey bears South 80°52' East 40.00 feet; thence North 80°52' West along an old fence line 526.58 feet to a point set on the center line of a 20 foot private road, from which a 3/4 inch survey pipe bears South 80°52' East 12.00 feet; thence North 0°21' East along the center line of said private road 3.00 feet to a 3/4 inch survey pipe from which a spike driven into a 30 inch live oak tree bears North 82°43' East 58.09 feet and a two inch survey pipe with brass cap bears North 89°45' West 45.00 feet; thence North 89°45' West along an old fence line and the Southerly side of said 20.00 foot road 178.94 feet to a point from which a 3/4 inch survey pipe bears South 89°45' East 10.00 feet; thence North 0°05' East along an old fence line and the Westerly side of said 20.00 foot private road, 1373.12 feet, more or less, to said Northern line of the Rancho La Goleta, from which a 1/2 inch survey pipe bears North 84°34' East 10.05 feet; thence North 84°34' East along the Northern line of said Rancho La Goleta 749.00 feet to the point of beginning.

EXCEPTING THEREFROM that portion conveyed by William Graham and Ella F. K. Graham, his wife, to E. Catlett, et al., by deed dated June 26, 1913 and recorded June 26, 1913 in Book 141, page 132 of Deeds, records of said County.

ALSO EXCEPTING THEREFROM that portion conveyed by David R. Wells and Mabel Rathbun Wells, husband and wife, to Paul J. Wiener, a single man, by Deed dated December 14, 1972, and recorded December 18, 1972, as Instrument No. 49424, in Book 2435, Page 1068, of Deeds, records of said County.

44. Barbara McGillivray, 41 acre parcel, meter, avocados, mobile home rental, parcel #067-030-05. 33 acre parcel, meter, avocados, residence, and limes, parcel #077-060-38.

5 Public Overlying Owners

The following identifies each Public Overlying Owner who is a participating party, the property to which the overlying right has attached, and the current use for each such parcel.

City of Santa Barbara:

Location: Santa Barbara Airport

That certain real property sometimes known as the "Santa Barbara Airport", in the City of Santa Barbara, County of Santa Barbara, State of California, and more particularly described as follows:

PARCEL A (APN 71-154-09)

That real property described in the deed from Leopoldo E. Lopez, et ux, recorded April 14, 1960 as Instrument No. 11986 in Book 1733 at Page 295 of Official Records in the office of the County Recorder of said County.

PARCEL B (APN 71-154-10)

That real property described in the deed from Jack Thomas Daniels, et ux, recorded August 31, 1962 as Instrument No. 36611 in Book 1949 at Page 967 of Official Records in the office of the County Recorder of said County.

PARCEL C (APN 71-154-11)

That real property described in the deed from Byron Thornburgh, et ux, recorded December 23, 1960 as Instrument No. 39674 in Book 1810 at Page 220 of Official Records in the office of the County Recorder of said County.

PARCEL D (APN 71-190-18)

That real property described in the deed from Frank Isaac, et ux, recorded March 18, 1965 as Instrument No. 9637 in Book 2096 at Page 337 of Official Records in the office of the County Recorder of said County.

PARCEL E (APN 71-160-02)

That real property described in the deed from Salvador E. Reveles, et ux, recorded August 18, 1961 as Instrument No. 28934 in Book 1865 at Page 693 of

Official Records in the office of the County Recorder of said County.

PARCEL F (APN 71-160-03)

That real property described in the deed from the County of Santa Barbara, recorded May 20, 1960 as Instrument No. 16122 in Book 1744 at Page 546 of Official Records in the office of the County Recorder of said County.

PARCEL G (APN 71-160-05)

That real property described in the deed from Walter F. Fittinger, et ux, recorded December 28, 1961 as Instrument No. 46398 in Book 1893 at Page 476 of Official Records in the office of the County Recorder of said County.

PARCEL H (APN 71-160-07, 09 & 11)

That real property described in the deed from Frank C. Villalba, et ux, recorded September 18, 1962 as Instrument No. 38966 in Book 1952 at Page 447 of Official Records in the office of the County Recorder of said County.

PARCEL I (APN 71-160-08)

That real property described in the deed from Douglas E. Parshall, recorded June 5, 1958 as Instrument No. 12805 in Book 1529 at Page 173 of Official Records in the office of the County Recorder of said County.

PARCEL J (APN 71-160-10)

That real property acquired from Calvin W. Cloer, et ux, described by Decree of Condemnation, recorded November 27, 1963 as Instrument No. 50287 in Book 2023 at Page 596 of Official Records in the office of the County Recorder of said County.

PARCEL K (APN 71-160-12)

That real property described in the deed from Frank P. Villalba, recorded October 14, 1963 as Instrument No. 43626 in Book 2016 at Page 1168 of Official Records in the office of the County Recorder of said County.

PARCEL L (APN 71-160-13)

That real property described in the deed from Victoriano Medina Rojas, recorded September 4, 1958 as Instrument No. 21378 in Book 1552 at Page 207 of

Official Records in the office of the County Recorder of said County.

PARCEL M (APN 73-080-03)

That real property described in the instrument recorded as Reel No. 78-52423 of Official Records in the office of the County Recorder of said County.

PARCEL N (APN 73-080-35, 36 & 37)

That real property described in the following recorded instruments:

1) That real property described in the instrument recorded in Book 521 at Page 326 of Official Records in the office of the County Recorder of said County.

2) That real property described in the instrument recorded in Book 522 at Page 53 of Official Records in the office of the County Recorder of said County.

3) That real property described in the instrument recorded in Book 861 at Page 33 of Official Records in the office of the County Recorder of said County.

PARCEL O (APN 71-160-04)

That real property described in the following recorded instruments:

1) That real property described in the deed recorded October 15, 1958 as Instrument No. 25041 in Book 1562 at Page 52 of Official Records in the office of the County Recorder of said County.

2) That real property described in the deed recorded July 21, 1959 as Instrument No. 23179 in Book 1645 at Page 426 of Official Records in the office of the County Recorder of said County.

3) That real property described in the deed recorded September 30, 1958 as Instrument No. 23706 in Book 1558 at Page 246 of Official Records in the office of the County Recorder of said County.

4) That real property described in the deed recorded April 18, 1958 as Instrument No. 8842 in Book 1517 at Page 569 of Official Records in the office of the County Recorder of said County.

5) That real property described in the deed recorded June 5, 1958 as Instrument No. 12810 in Book 1529 at Page 180 of Official Records in the office of the County Recorder of said County.

PARCEL P (APN 71-160-06)

That real property described in the following recorded instruments:

1) That real property described in the deed recorded May 24, 1958 as Instrument No. 11899 in Book 1526 at Page 483 of Official Records in the office of the County Recorder of said County.

2) That real property described in the deed recorded February 25, 1959 as Instrument No. 5950 in Book 1597 at Page 26 of Official Records in the office of the County Recorder of said County.

3) That real property described in the deed recorded December 29, 1960 as Instrument No. 40097 in Book 1811 at Page 326 of Official Records in the office of the County Recorder of said County.

4) That real property described in the deed recorded November 18, 1960 as Instrument No. 35797 in Book 1799 at Page 236 of Official Records in the office of the County Recorder of said County.

5) That real property described in the deed recorded June 4, 1959 as Instrument No. 17961 in Book 1632 at Page 2 of Official Records in the office of the County Recorder of said County.

PARCEL Q (APN 71-181-12)

That real property described in the following recorded instruments:

1) That real property described in the deed recorded August 18, 1961 as Instrument No. 28923 in Book 1865 at Page 673 of Official Records in the office of the County Recorder of said County.

2) That real property described in the deed recorded November 8, 1962 as Instrument No. 47456 in Book 1450 at Page 116 of Official Records in the office of the County Recorder of said County.

3) That real property described in the deed recorded April 29, 1960 as Instrument No. 13722 in Book 1738 at Page 121 of Official Records in the office of the County Recorder of said County.

4) That real property described in the deed recorded August 25, 1961 as Instrument No. 29940 in Book 1867 at Page 406 of Official Records in the office of the County Recorder of said County.

5) That real property described in the deed recorded as Instrument No. 8392 in Book 1833 at Page 664 of Official Records in the office of the County Recorder of said County.

6) That real property described in the deed recorded November 2, 1960 as Instrument No. 34146 in Book 1794 at Page 596 of Official Records in the office of the County Recorder of said County.

7) That real property described in the deed recorded June 24, 1960 as Instrument No. 20034 in Book 1756 at Page 474 of Official Records in the office of the County Recorder of said County.

8) That real property described in the deed recorded November 15, 1960 as Instrument No. 35307 in Book 1798 at Page 22 of Official Records in the office of the County Recorder of said County.

9) That real property described in the deed recorded August 15, 1961 as Instrument No. 28426 in Book 1864 at Page 891 of Official Records in the office of the County Recorder of said County.

10) That real property described in the deed recorded October 7, 1960 as Instrument No. 34137 in Book 1794 at Page 578 of Official Records in the office of the County Recorder of said County.

11) That real property described in the deed recorded September 19, 1960 as Instrument No. 29008 in Book 1780 at Page 463 of Official Records in the office of the County Recorder of said County.

12) That real property described in the deed recorded November 15, 1960 as Instrument No. 35306 in Book 1798 at Page 41 of Official Records in the office of the County Recorder of said County.

13) That real property described in the deed recorded May 13, 1960 as Instrument No. 15339 in Book 1742 at Page 492 of Official Records in the office of the County Recorder of said County.

PARCEL B (APN 71-160-01)

That real property described in the following recorded instruments:

1) That real property described in the deed recorded August 5, 1960 as Instrument No. 24397 in Book 1768 at Page 175 of Official Records in the office of the County Recorder of said County.

2) That real property described in the deed recorded May 26, 1958 as Instrument No. 11898 in Book 1526 at Page 481 of Official Records in the office of the County Recorder of said County.

3) That real property described in the deed recorded September 20, 1958 as Instrument No. 23705 in Book 1558 at Page 244 of Official Records in the office of the County Recorder of said County.

4) That real property described in the deed recorded July 1, 1959 as Instrument No. 21024 in Book 1640 at Page 51 of Official Records in the office of the County Recorder of said County.

5) That real property described in the deed recorded May 26, 1958 as Instrument No. 11900 in Book 1526 at Page 485 of Official Records in the office of the County Recorder of said County.

6) That real property described in the deed recorded June 17, 1958 as Instrument No. 13686 in Book 1531 at Page 303 of Official Records in the office of the County Recorder of said County.

7) That real property described in the deed recorded April 18, 1958 as Instrument No. 8842 in Book 1517 at Page 568 of Official Records in the office of the County Recorder of said County.

8) That real property described in the deed recorded April 28, 1959 as Instrument No. 13273 in Book 1619 at Page 501 of Official Records in the office of the County Recorder of said County.

9) That real property described in the deed recorded September 4, 1958 as Instrument No. 21392 in Book 1552 at Page 227 of Official Records in the office of the County Recorder of said County.

10) That real property described in the deed recorded June 5, 1958 as Instrument No. 12809 in Book 1529 at Page 178 of Official Records in the office of the County Recorder of said County.

11) That real property described in the deed recorded May 26, 1958 as Instrument No. 11897 in Book 1526 at Page 479 of Official Records in the office of the County Recorder of said County.

County of Santa Barbara:

County lands overlying the North-Central basin are used for Fire facilities: Jail, Honor Farm, and Juvenile Hall facilities: Social Services: Sheriff's Office: Transfer Station: Road Yard: Health Care Services and Mental Health facilities: sports fields, Goleta library: Goleta open spaces and Parks: and County and School Administration offices. All these facilities are used for governmental or public recreation purposes. The County also owns various road rights-of-ways and open space areas that require a small amount of water for landscaping. The Santa Barbara County Flood Control District and Water Conservation Agency, which is not a party to this case, also owns several parcels in Goleta: the Flood District's water use is minimal. The 5-year average usage for the North-Central Basin is 180 AFY. The County's existing average total Goleta water use, including Parks, Public Works, and Fire Department, is 267 AFY. Future use for the entire basin is 115 AFY (1988-93) and 68 AFY (1993-98), most of which is expected to occur in the West Basin. County's total existing and proposed average Goleta water use for the entire Goleta Groundwater Basin through the year 2008 is 584 AFY.

MAP NUMBER	APN	USE
1.	59-010-52	Park (San Antonio)
2.	59-010-77	Park (San Antonio)
3.	59-010-78	Park (San Antonio)
4.	59-010-86	Park (San Antonio)
5.	59-040-10	Park (San Antonio)
6.	59-040-21	Park (San Antonio)
7.	59-120-02	Fire Administration/County School Administration

8.	59-140-23	Public Works/Roads/Parks/ Garage/Solid Waste/Jail
9.	59-140-24	Health Care Services Campus (General Hospital)
10	59-221-20	Public Works/Roads/Parks/ Garage/Solid Waste/Jail
11.	59-260-07	Open Space
12.	59-290-12	Open Space
13	59-313-09	Open Space
14.	59-320-01	Open Space
15.	59-332-01	Open Space
16	61-040-11	Juvenile Hall Grounds
17.	61-040-12	Juvenile Hall Grounds
18.	61-040-15	Hollister Property
19	61-040-16	Hollister Property
20.	61-040-18	Hollister Property
21.	61-040-19	Hollister Property
22.	61-040-20	Hollister Property
23.	61-040-21	Hollister Property
24.	61-040-22	Hollister Property
25.	61-040-23	Hollister Property
26.	61-040-24	Hollister Property
27.	61-271-05	Lot
28.	61-361-01	Open Space
29.	61-363-01	Open Space
30.	65-061-12	Flood Control
31.	65-223-34	Lot
32.	65-371-06	Open Space
33.	65-373-07	Open Space
34.	65-441-01	Open Space
35.	65-461-05	Open Space
36.	65-505-21	Flood Control
37.	65-522-03	Lot
38.	65-525-01	Open Space
39.	65-540-45	Open Space
40.	65-540-47	Open Space
41.	65-550-56	Flood Control
42.	65-560-35	Open Space
43.	65-570-40	Open Space
44.	67-090-08	Lot (Old Well Site)
45.	67-100-01	Park (Tucker's Grove)
46.	67-100-10	Park (Tucker's Grove)
47.	67-100-11	Park (Tucker's Grove)
48.	67-100-12	Park (Tucker's Grove)
49.	67-100-13	Park (Tucker's Grove)
50.	67-120-20	Open Space
51.	67-120-21	Open Space
52.	67-153-07	Open Space
53.	67-251-01	Open Space
54.	67-261-21	Open Space
55.	67-285-08	Open Space
56.	67-201-03	Open Space
57.	67-301-01	Open Space
58.	67-312-01	Open Space
59.	67-330-05	Open Space

60.	67-351-05	Open Space
61.	67-393-01	Open Space
62.	67-400-21	Open Space
63.	67-412-25	Open Space
64.	67-420-01	Open Space
65.	67-480-78	Open Space
66.	69-060-26	Open Space
67.	69-090-56	Goleta Library
68.	69-142-38	Open Space
69.	69-142-39	Open Space
70.	69-153-01	Open Space
71.	69-173-14	Lot
72.	69-240-07	Road (Portion of)
73.	69-251-01	Lot
74.	69-291-01	Open Space
75.	69-311-01	Open Space
76.	69-315-01	Open Space
77.	69-321-02	Open Space
78.	69-322-11	Open Space
79.	69-323-20	Open Space
80.	69-344-01	Open Space
81.	69-350-30	Open Space
82.	69-350-31	Open Space
83.	69-362-01	Open Space
84.	69-380-01	Open Space
85.	69-380-11	Open Space
86.	69-391-01	Open Space
87.	69-392-08	Open Space
88.	69-401-01	Open Space
89.	69-413-10	Open Space
90.	69-431-01	Open Space
91.	69-442-03	Open Space
92.	69-442-07	Open Space
93.	69-463-03	Open Space
94.	69-501-01	Open Space
95.	69-505-01	Open Space
96.	69-530-58	Open Space
97.	69-530-59	Open Space
98.	69-540-39	Open Space
99.	69-550-52	Open Space
100.	69-570-53	Open Space
101.	69-570-54	Open Space
102.	69-580-37	Open Space
103.	69-590-54	Open Space
104.	69-590-55	Open Space
105.	71-061-23	Park (Lot)
106.	71-220-32	Animal Control
107.	71-220-09	Park (Goleta Beach)
108.	71-200-17	Park (Goleta Beach)
119.	75-010-21	Lot
123.	77-060-33	Lot (Flood Control)
133.	77-294-19	Open Space
134.	77-302-08	Open Space
135.	77-305-02	Open Space
136.	77-321-00	Walkway

137.	77-331-17	Open Space
138.	77-331-23	Open Space
140.	77-361-11	Open Space
144.	77-470-51	Open Space
145.	77-470-52	Open Space
146.	77-480-62	Open Space
147.	77-480-64	Open Space
148	61-220-18	Flood Control
149.	65-320-11	Flood Control
150.	65-590-84	Flood Control
151.	69-550-55	Road (Island)
152.	69-570-55	Open Space
153.	71-090-37	Flood Control
154.	71-090-48	Flood Control
155.	71-130-17	Road (Portion of)
156.	71-140-40	Road (Road)
157.	71-140-60	Road (Road)
158.	71-170-36	Road (Lot Strip)
159.	71-190-17	Road (Lot Strip)
160.	71-190-28	Flood Control
161.	71-190-30	Flood Control
162.	71-200-18	Road (Lot Strip)
163.	77-271-06	Flood Control
164.	77-272-04	Flood Control
165.	77-294-20	Flood Control
166.	61-051-30	Flood Control
167.	61-160-27	Flood Control
168.	61-160-29	Flood Control
169.	61-160-31	Flood Control
170.	67-060-09	Flood Control
171.	67-281-01	Flood Control
172.	67-285-09	Flood Control
173.	67-291-01	Flood Control
174.	71-140-55	Flood Control

Santa Barbara High School District:

SAN MARCOS HIGH SCHOOL:

Exceptions:

1. The right of the public to use for road purposes any portion of the lands herein described lying within the lines of any public road or highway, and including a right of way and incidents thereto for a public highway over a portion of said land as granted to state of California by deed recorded December 18, 1938.

NOTE:

By a deed dated March 29, 1950 and recorded April 3, 1950 in Book 909, page 308 of Official Records Yee M. Wing acquired the following interest from Todmorten Water Company.

PARCEL ONE: A right in and to that tract of land situated near La Goleta, in the county of Santa Barbara, state of California, to be used and developed as a well site for water to be used for domestic and irrigation purposes, described as follows:

Commencing at a point on the center line of Turnpike Road from which the most southeasterly corner of the tract of land conveyed by Joseph J. Perkins to Philip H Rice and recorded in Book 34, page 129 of Deeds, in Santa Barbara County Recorder's office, bears south 0°42' west 459.47 feet and a 1/2 inch survey pipe set on the westerly side of the said Turnpike Road, bears north 89°18' west 30.00 feet; thence 1st, north 0°42' east following along the center line of said Turnpike Road, 75.00 feet to a point from which a 1/2 inch survey pipe set on the westerly side of the said Turnpike Road, bears north 89°18' west at right angles 108.50 feet to a 1/2 inch survey pipe; thence 3rd, south 0°42' west at right angles 25.00 feet to a 1/2 inch survey pipe; thence 4th, south 54°40' east 25.00 feet to a 1/2 inch survey pipe; thence 5th, south 33°00' east 43.10 feet to a 1/2 inch survey pipe; thence 6th, south 89°18' east 64.00 feet to the point of beginning.

PARCEL TWO: A right of way over a strip of land from said well site, hereinabove described as XParcel One, 2 feet in width, to place and maintain therein at depth below plow depth, a water pipe line, said right of way to be 2 feet in width measured 1 foot on each side of the following described line, to-wit:

Commencing at a point in the above-mentioned third course of the well site from which end of the above-mentioned second course bears north 0°42' east 1.74 feet; thence 1st, north 64°45' west along the present pipe line 161.47 feet to a point; thence 2nd, north 59°39' west along the present pipe line 311.86 feet to a point; thence 3rd, north 23°14' west along the present pipe line 54.83 feet to a point; thence 4th, north 4°29' west along the present pipe line 173.76 feet to a point; thence 5th, north 2-17' east along the present pipe line 147.05 feet to a point; thence 6th, north 5°43' west along the present pipe line 64.47 feet to a point; thence 7th, north 0°31' east along the present pipe line 417.17 feet to a point; thence 8th, north 1°20' west along the present pipe line 133.78 feet to a point on the southerly line of Southern Pacific Railroad Company's right of way from which a 1/2 inch survey pipe bears south 87°58' west 10.00 feet and another 1/2 inch survey pipe set on the center line of the above mentioned Turnpike Road at the intersection point of the southerly line of the said

Southern Pacific Railroad Company's right of way bears north 87°58' east 574.33 feet.

In view of the fact that it is the intent of the parties to transfer this interest to Santa Barbara High School District, it is suggested that the deed to the grantee include such interest.

DESCRIPTION:

That portion of the Rancho La Goleta, in the county of Santa Barbara, state of California, according to the partition survey and map of said Rancho made by Edmund Pew, on file in the office of the County Clerk of said county and state in the matter of the estate of Daniel A. Hill, Deceased, Case No. 8989, described as follows:

Beginning at Post Number 13 of said partition map and survey at the intersection of the easterly line of said Rancho with the center line of Hollister Avenue; thence north along said Rancho line, 1550 feet, more or less, to its intersection with the southerly line of the tract of land granted to Southern Pacific Railroad Company, a corporation, by deed recorded in Book 69, page 446 of Deeds, records of said County; thence westerly along said last mentioned line, 920 feet, more or less, to its intersection with the center line of a public road leading from Hollister Avenue to "Cathedral Oaks"; thence south along said last mentioned center line, 1820 feet, more or less, to its intersection with the center line of said Hollister Avenue; thence along said last mentioned line, north 75°45 east 990.66 feet to the point of beginning.

EXCEPTING THEREFROM that portion thereof included within the lines of the land conveyed to the county of Santa Barbara by deed recorded December 3,1877 in Book S, page 314 of Deeds, records of said County.

YEE M. WING:

PARCEL ONE: That portion of the Rancho La Goleta, in the said county of Santa Barbara, according to the partition survey and map of said Rancho made by Edmund Pew on file in the office of the County Clerk of said county and state, in the matter of the Estate of Daniel A. Hill, Deceased, Case No. 8989, described as follows:

Beginning at Post Number 13 of said partition map and survey, at the intersection of the easterly line of said Rancho with the center line of Hollister Avenue; thence north, along said Rancho line, 1550 feet, more or less, to its intersection with the southerly line of the tract of land granted to Southern Pacific Railroad Company, a corporation, by deed recorded in Book 69,

page 446 of Deeds, records of said county; thence westerly, along said last mentioned line, 920 feet, more or less, to its intersection with the center line of a public road leading from Hollister Avenue to "Cathedral Oaks"; thence south, along said last mentioned center line, 1620 feet, more or less, to its intersection with the center line of said Hollister Avenue; thence along said last mentioned line north 75°45' east 990.66 feet to the point of beginning.

EXCEPTING THEREFROM that portion thereof included within the lines of the land conveyed to the County of Santa Barbara by deed recorded December 3, 1877 in Book S, page 314 of Deeds, records of said county.

PARCEL TWO: A right in and to that tract of land situated near La Goleta, in the said county of Santa Barbara, to be used and developed as a well site for water to be used for domestic and irrigation purposes, as acquired by grantor herein by deed from Todmorten Water Company, dated March 29, 1950 and recorded in Book 909, page 308 of Official Records, records of said county, described as follows:

Commencing at a point on the center line of Turnpike road from which the most southeasterly corner of the tract of land conveyed by Joseph J. Perkins to Philip H. Rice and recorded in Book 34, page 129 of Deeds, records of said county, bears south 0°42' west 459.47 feet and a 1/2 inch survey pipe set on the westerly side of the said Turnpike Road bears north 89°18' west 30.00 feet; thence north 0°42' east, following along the center line of said Turnpike Road, 75.00 feet to a point from which a 1/2 inch survey pipe set on the westerly side of the said Turnpike Road bears north 89°18' west 30.00 feet; thence north 89°18' west, at right angles, 108.50 feet to a 1/2 inch survey pipe; thence south 0°42' west at right angles 25.00 feet to a 1/2 inch survey pipe; thence south 54°40' east 25.00 feet to a 1/2 inch survey pipe; thence south 33°00' east 43.10 feet to a 1/2 inch survey pipe; thence south 89°18' east 64.00 feet to the point of beginning.

PARCEL THREE: A right of way over a strip of land from said well site, hereinabove described as Parcel Two, 2 feet in width, to place and maintain therein at depth below plow depth, a water pipe line, said right of way to be 2 feet in width, measured 1 foot on each side of the following described line:

Commencing at a point in the above mentioned third course of the well site from which end of the above mentioned second course bears north 0°42' east 1.74 feet; thence north 64°45' west, along the present pipe line, 161.47 feet to a point; thence north 59°39' west,

along the present pipe line, 311.86 feet, to a point, thence north 23°14' west, along the present pipe line, 54.83 feet to a point; thence north 4°29' west along the present pipe line 173.76 feet to a point; thence north 2°17' east along the present pipe line 147.05 feet to a point; thence north 5°43' west along the present pipe line, 64.47 feet to a point; thence north 0°31' east along the present pipe line 417.17 feet to a point; thence north 1°20' west along the present pipe line, 133.78 feet to a point on the southerly line of Southern Pacific Railroad Company's right of way, from which a 1/2 inch survey pipe bears south 87°58' west 10.00 feet and another 1/2 inch survey pipe set on the center line of the above mentioned Turnpike road at the intersection point of the southerly line of the said southern Pacific Railroad Company's right of way bears north 87°58' east 574.33 feet.

SECONDARY SCHOOL-GOLETA VALLEY:

That portion of the Rancho La Goleta, in the County of Santa Barbara, State of California, according to the partition survey and map of said Rancho made by Edmund Pew, on file in the office of the County Clerk of said county and state in the matter of the estate of Daniel A. Hill, deceased, Case No. 8989, described as follows:

Beginning at Post Number 13 of said partition map and survey, at the intersection of the easterly line of said Rancho with the center line of Hollister Avenue; thence north along said Rancho line, 1550 feet, more or less, to its intersection with the southerly line of the tract of land granted to Southern Pacific Railroad Company, a corporation, by deed recorded in Book 69, page 446 of Deeds, records of said County; thence westerly along said last mentioned line, 920 feet, more or less, to its intersection with the center line of a public road leading from Hollister Avenue to "Cathedral Oaks"; thence south along said last mentioned center line 1820 feet, more or less, to its intersection with the center line of said Hollister Avenue; thence along said last mentioned line, north 75°45' east 990.66 feet to the point of beginning.

EXCEPTING therefrom that portion thereof included within the lines of the land conveyed to the County of Santa Barbara, by deed recorded December 3, 1877 in Book S, page 314 of Deeds, records of said County.

EDWARD FONG:

That portion of Lot 4 of the Outside Pueblo Lands of the City of Santa Barbara, in the County of Santa Barbara, State of California, described as follows:

Beginning at the southwest corner of said lot and running thence east along the south line of the lot, 21 rods and 11 feet; thence at right angles north 74 rods; thence at right angles west 21 rods and 11 feet; thence at right angles south 74 rods to the point of beginning.

EXCEPTING therefrom that portion thereof conveyed by the deed to Robert Main, et al, recorded October 16, 1903 in Book 90, page 436 of Deeds, records of said County.

DURBIANO:

All that certain real property lying Westerly and Southerly of the existing fence line along the Westerly side of the property occupied by Michele Durbiano et ux., being a portion of lots 3 and 4 of the Outside Pueblo Lands of the City of Santa Barbara and a portion of the Pueblo Road lying between said Lots 3 and 4 now abandoned, and a portion of Rancho La Goleta, in the County of Santa Barbara, State of California, the line of said existing fence is described as follows:

Beginning at a 1/2 inch survey pipe set on the Northerly line of Hollister Avenue from which the intersection of the said Northerly line of Hollister Avenue with the centerline of San Antonio Road bears North 77°23'15" East a distance of 993.82 feet; thence 1st, North 0°29'22" East leaving the Northerly line of said Hollister Avenue along said fence line 1017.64 feet to a 1/2 inch survey pipe set at an angle point in said fence line; thence 2nd, North 89°35'05" West along said fence line 368.56 feet to a 1/2 inch survey pipe set at an angle point in said fence line; thence 3rd, North 0°19'15" East along said fence line 419.37 feet to a 1/2 inch survey pipe set on the Southerly line of the tract of land described in the deed to the Southern Pacific Railroad Company, recorded in Book 69 at page 446 of Deeds, records of said County.

COLETA VALLEY JR. HIGH:

That portion of the Los Dos Pueblos Rancho, in the County of Santa Barbara, State of California, described as follows:

Beginning at a point in the northerly prolongation of the westerly line of the tract of land described in the Deed to J. Solon Maguire, a married man, recorded May 17, 1956, as instrument no. 9598, in book 1379, page 390 of official records, records of said county, said point being distant northerly 50.00 feet, measured along said westerly line from the northwesterly corner of said tract of land; thence south 0°48'37" west

915.81 feet along said westerly line to a point in the southerly line of the tract of land described in the Deed to Walter Scott Franklin, et ux., dated June 24, 1920 and recorded November 10, 1920 in book 188, page 327 of Deeds, records of said County; thence north 89°48'50" west 1108.59 feet along said southerly line to the southwesterly corner of said Franklin tract of land; thence north 0°17'54" west 848.27 feet along the westerly line of said last mentioned tract of land; thence north 86°17'40" east 929.18 feet to the beginning of a tangent curve, concave to the southeast, having a radius of 2000.00 feet, a radial line through said beginning bearing south 03°42'20" east; thence, along said tangent curve through a central angle of 4°02'44" a distance of 141.22 feet; thence south 89°39'36" east 57.59 feet to the point of beginning.

EXCEPTING THEREFROM that portion thereof, described as follows:

Beginning at a point in the northerly prolongation of the westerly line of the tract of land described in the Deed to J. Solon Maguire, a married man, recorded May 17, 1956, as Instrument No. 9598, in Book 1379, page 390 of official records, records of said county, said point being distant northerly 50.00 feet, measured along said westerly line from the northwesterly corner of said tract of land; thence south 0°48'37" west 50.00 feet along said westerly line to the northwesterly corner of said tract of land; thence north 89°39'36" west 834.75 feet along the westerly prolongation of the northerly line of said tract of land; thence north 86°17'40" east 638.06 feet to the beginning of a tangent curve, concave to the southeast having a radius of 2000.00 feet, a radial line through said beginning bearing south 3°42'20" east thence along said tangent curve through a central angle of 4°02'44" a distance of 141.22 feet; thence south 89°39'36" east 57.59 feet to the point of beginning.

ALSO EXCEPTING THEREFROM 1/2 interest in and to all minerals, oil, natural gas, asphaltum and other hydrocarbons by whatever name known, lying and being more than five hundred (500) feet beneath the surface of said land, together with the rights and provisions excepted and reserved by Laura Baldwin Franklin in deed recorded October 30, 1962 as Instrument No. 45857 in Book 1959 at Page 1449 of Official Records, records of said County.

ALSO EXCEPTING, THEREFROM 1/2 interest in and to all minerals, oil, natural gas, asphaltum and other hydrocarbons by whatever name, known lying and being more than five hundred (500) feet beneath the surface of said land, without the right to use said surface of

said land or any portion of the subsurface of said land to a depth of 500 feet below the surface of said land, as reserved in the Deed from Mound Investment Company, a corporation recorded April 8, 1963.

SCHEDULE C:

That portion of the Los Dos Pueblos Rancho, in the County of Santa Barbara, State of California, described as follows:

Beginning at a point in the northerly prolongation of the westerly line of the tract of land described in the deed to J. Solon Maguire, a married man, recorded May 17, 1956 as Instrument No. 9598 in Book 1379 at Page 390 of Official Records, records of said County, said point being distant northerly 50.00 feet, measured along said westerly line from the northwesterly corner of said tract of land; thence south 0°48'37" west, 50.00 feet along said westerly line to the northwesterly corner of said land; thence north 89°39'36" west, 834.75 feet along the westerly prolongation of the northerly line of said tract of land; thence north 86°17'40" east, 638.06 feet to the beginning of a tangent curve, concave to the southeast, having a radius of 2000.00 feet, a radial line through said beginning bearing south 3°42'20" east; thence along said tangent curve through a central angle of 4°02'44", a distance of 141.22 feet; thence south 89°39'36" east, 57.59 feet to the point of beginning.

EXCEPTING THEREFROM 1/2 interest in and to all minerals, oil, natural gas, asphaltum and other hydrocarbons by whatever name known, lying and being more than five hundred (500) feet beneath the surface of said land, together with the rights and provisions excepted and reserved by Laura Baldwin Franklin in deed recorded October 30, 1962 as Instrument No. 45857 in Book 1959 at Page 1449 of Official Records, records of said County.

EXCEPTING THEREFROM 1/2 interest in and to all minerals, oil, natural gas, asphaltum and other hydrocarbons by whatever name known, lying and being more than five hundred (500) feet beneath the surface of said land, without any right to use said surface of said land or any portion of the subsurface of said land to a depth of 500 feet below the surface of said land, as reserved in the deed from R.L. Hertel and Carolyn W. Hertel, husband and wife, Donald P. Woolsey and Mary M. Woolsey, husband and wife, and C. D. Woolsey and Hazel P. Woolsey, husband and wife, recorded April 8, 1963.

DOS PUEBLOS HIGH SCHOOL:

PARCEL ONE:

Beginning at a 1/2 inch survey pipe set on the Southerly line of said Tract 2 and the Northerly line of Lot "A" of El Encanto Heights No 2, according to the map thereof recorded in Book 50, Page 32, Et seq., Of Maps, in the Office of the County Recorder of said County Recorder of said County, from which a 1/2 inch survey pipe set at the Northeast Corner of Lot 45 of said Tract bears South 89°49' West 27.00 feet; thence 1st, leaving the Northerly line of El Encanto Heights No. 2, North 0°11' West 1440.50 feet to a 1/2 inch survey pipe; thence 2nd, at right angles North 89°49' East 1662 feet, more or less, to the Easterly line of said Tract 2 as described in the partition Deed to Augustus H. Den recorded April 28, 1892 in Book 33, Page 305 of Deeds, also being the Westerly line of Tract 3 as described in the partition Deed to Maria Den More recorded April 28, 1892 in Book 33, Page 294 of Deeds; Thence 3rd, Southerly along the common boundary line of said Tracts 2 and 3 as described in said Deeds to intersect the Easterly prolongation of the Northerly line of El Encanto Heights according to the map thereof recorded in Book 40, Pages 91 to 94, inclusive of maps, from which a 1/2 inch survey pipe set at the Northerly common corner of Lots 15 and 16 in Block "B" of said El Encanto Heights bears South 89°50'30" West 178.99 feet, more or less; thence 4th, along said prolongation and the Northerly line of said El Encanto Heights South 89°50'30" West 1905.15 feet to a 1-1/4 inch survey pipe set at the Northwest corner of said El Encanto Heights and the Northwest corner of El Encanto Heights No. 2 Herein referred to; thence 5th, along the Northerly line of said El Encanto Heights No. 2, South 89°49' West 584.00 feet to the point of beginning.

EXCEPTING THEREFROM those portions conveyed to the County of Santa Barbara by the Deed recorded June 2, 1966 as Instrument No. 18239 in Book 2153, page 790 of Official Records in the office of the Santa Barbara County, Recorder and Re-Recorded July 18, 1969 as Instrument No. 20406 in Book 2278, page 347 of said Official Records and by the deed recorded June 6, 1969 as Instrument No. 15712 in Book 2273 page 1193 of said Official Records.

PARCEL TWO:

Commencing at the most Southerly corner of the Parcel of land described in the Deed from Dominic E. Pomatto to the County of Santa Barbara recorded August 30, 1968, as Instrument No. 27349 in Book 2244, page 24, of Official Records in the Santa Barbara County Recorder's Office; thence along the Westerly boundary of said Parcel of land the following courses and distances: N.

26°19'15", W. 165.00 feet, thence N 53°56'15" W 17.44 feet; thence N 43°58'15" W 37.64 feet to the true point of beginning; thence from true point of beginning continuing along said Westerly boundary of said Parcel of land described in said Deed to the County of Santa Barbara the following courses and distances N 43°58'15" W 153.18 feet; thence N 31°35'15" W 256.85 feet; thence N. 10°32'15" W 255.68 feet; thence leaving said Westerly boundary, S 27°17'20" E. 507.24 feet to the beginning of a 948.00 Foot radius curve, concave Westerly and tangent to the last described course; thence Southerly along the arc of said curve, through a central angle of 8°31'13", a distance 140.97 Feet to the true point of beginning.

PARCEL THREE:

Commencing at the most Southerly corner of the parcel of land described in the Deed from Dominic E. Pomatto to the County of Santa Barbara recorded August 30, 1968, as Instrument No. 27349 In Book 2244, page 24, of Official Records in the Santa Barbara County Recorder's Office; thence along the Westerly boundary of said parcel of land the following courses and distances: N 26°19'15" W. 165.00 Feet; thence N. 53°56'15" W. 17.44 feet; thence N. 43°58'15" W. 190.82 feet; thence N. 31°36'15" W. 256.85 feet; thence N. 10°32'15" W. 256.00 feet; thence N. 22°21'15" W., 302.65 feet; thence N. 29°41'15" W. 241.45 feet; thence N. 54°00'15" W. 35.64 feet to the true point of beginning; thence from said true point of beginning, continuing along said Westerly boundary of said parcel of land described in said Deed to County of Santa Barbara the following courses and distances: N 54°00'15" W. 394.66 feet; thence N. 0°50'15" W. 102.78 feet to a point in the arc of a 8,055.00 Foot radius curve, concave Northerly and whose radial center bears, N 5°25'29", W; thence leaving said Westerly boundary Easterly along the arc of said curve, through a central angle of 2°30'34" a distance of 133.80 feet to the beginning of a 15.00 foot radius reverse curve, concave Southerly and whose radial center bears, S 7°56'03" E; thence Easterly and Southerly along the arc of said reverse curve, through a central angle of 74°58'18", a distance of 19.63 feet to the beginning of a 1,252.00 foot radius reverse curve, concave Easterly and whose radial center bears, N. 67°02'15" E; thence Southerly along the arc of said reverse curve, through a central angle of 4°19'35", a distance of 94.54 feet; thence tangent to said last described curve, S 27°17'20" E. 287.71 feet to the true point of beginning.

PROPERTY NEAR SAN MARCOS HIGH SCHOOL:

That portion of La Goleta Rancho in the County of Santa Barbara, State of California, described as follows:

Beginning at the Northeast corner of the tract of land described in the Deed from Nelson W. Willard to Donn B. Tatum, recorded March 8, 1961, in Book 1832 at page 966 of Official Records of said County, being the Northwest corner of a 17.57 Acre Parcel of land, shown on a map of a portion of Rancho La Goleta, filed in Book 66, page 77, record of surveys of said county, being also a point on the Southerly right-of-way line of the Southern Pacific Railroad Company; thence, along said Southerly right-of-way line, South 88°10' West, 1066.05 feet to a point from which the Northeast corner of Tract 10,257, as said Tract is shown on a map filed in Map Book 72, page 53, records of said county, bears South 88°10' West 560.05 feet; thence, South 4°18' West parallel with the Easterly boundary of said Tract 10.257 736.40 feet to a point on a curve concave to the Southwest, from the radial center of said curve bears South 12°48' West, 625.00 feet; thence Southeasterly, along the arc of said curve, (having a delta of 17°09'55", a radius of 625.00 feet, and a chord bearing, South 68°37'02" East, 186.54 feet) 187.25 feet to the end thereof; thence, South 60°02'05" East, 154.12 feet to the beginning of a curve to the left, said curve having a delta of 29°02'20", a radius of 435.00 feet; thence Easterly along the arc of said curve, 220.47 feet to the end thereof; thence South 89°04'25" East, 587.34 feet to the Southwest corner of the above-mentioned 17.57 Acre Parcel, shown on page 77 in Book 66, Record of Survey of said county, being a point on the Easterly line of the above mentioned Tatum Tract; thence, North 0°56' East, along said Easterly line of said Tatum Tract; being also the westerly line of said 17.57 Acre parcel, 981.15 feet to the point of beginning.

Excepting therefrom all oil, oil rights, minerals, mineral rights, natural gas, natural gas rights, and other hydrocarbons by whatsoever name known that may be within or under the parcel of land hereinabove described, together with the perpetual right of drilling, mining, exploring and operating therefor and removing the same from said land of any other land, including the right to whipstock or directionally drill and mine from lands other than those hereinabove described, oil or gas wells tunnels and shafts into, through or across the subsurface of the land hereinabove described, and to bottom such whipstocked or directionally drilled wells, tunnels and shafts under and beneath or beyond the exterior limits thereof, and to redrill, retunnel, equip, maintain,

repair, deepen and operate any such wells or mines, without, however, the right to drill, mine, explore and operate through the surface or the upper 500 feet of the subsurface of the land hereinabove described or otherwise in such manner as to endanger the safety of any public improvement that may be constructed on said land, as provided in the Deed from Donn B. Tatum, Trustees, to Santa Barbara High School District recorded January 8, 1965, as Instrument No. 779 in Book 2086 at page 1295, of Official Records.

Goleta Union School District

ELLWOOD UNION SCHOOL PROPERTY:

5-Acre parcel - Surrounding Present Site

That certain lot, piece or parcel of real property located in the County of Santa Barbara, State of California, described as follows:

Commencing at a two inch survey pipe set in the northerly line of Hollister Avenue at the most southwesterly corner of the property conveyed by Joseph Archambeault, et al, to the Ellwood Union School District as Instrument No. 1046 by Deed recorded February 13, 1932 in Book 260, page 34 of Official Records in the Santa Barbara County Records and more fully shown on a map entitled "Record of Survey of a portion of Rancho Los Dos Pueblos" filed in Book 39, Page 96 of Records of Surveys in the said Santa Barbara County Records.

Thence 1st, N 1°07'27" W along the westerly side of said property, 501.43 feet to a two inch survey pipe set at the most northwesterly corner of same.

Thence 2nd, N 89°36'03" E along the northerly side of said property, 436.94 feet to a two inch survey pipe set at the most northwesterly corner of same.

Thence 3rd, S 1°07'27" E along the easterly side of said property, 495.80 feet to a two inch survey pipe set at the most south-easterly corner of same in the northerly line of the said Hollister Avenue.

Thence 4th, N 88°51'45" E along the northerly line of the said Hollister Avenue, 218.32 feet.

Thence 5th, N 1°07'27" W leaving said Hollister Avenue parallel with and easterly of the third (3rd) course hereinabove described, 638.86 feet to a point in the southerly line of the Southern Pacific Railroad Company right-of-way.

Thence 6th, S 89°38'22" W along the southerly line of the said Southern Pacific Railroad Company right-of-way 677.30 feet to a 1/2 inch survey pipe.

Thence 7th, S 1°07'27" E parallel with the above-mentioned first (1st) course, 648.05 feet to a 1/2 inch survey pipe set on the northerly line of said Hollister Avenue.

Thence 8th, N 88°51'45" E along the northerly line of said Hollister Avenue, 22.00 feet to the place of beginning, containing 5.00 acres.

EL RANCHO:

Being a portion of the Rancho Los Dos Pueblos, County of Santa Barbara, State of California, described as follows:

Beginning at the Northwesterly corner of "Parcel 1" as described in the deed from Ralph C. Day, et.ux., to the Security First National Bank, recorded in Book 2092, Page 1208, of Official Records, on February 24, 1965 in the office of the County Recorder of said County:

Thence proceeding along the northerly line of said "Parcel 1" the following courses:

1. North 88°55'10" East, a distance of 179.95 feet;

2. Thence South 45°53'50" East, a distance of 141.75 feet;

3. Thence South 70°37'50" East, a distance of 166.41 feet;

4. Thence leaving said Northerly line of "Parcel 1" and proceeding along a curve with a radius of 800 feet, concave to the East, the radial center of which bears South 83°42'59" East from the Easterly terminus of the last-mentioned course, through an angle of 18°04'34" and an arc length of 252.39 feet to the Northerly terminus of the centerline of that particular 60 foot right-of-way granted to the County of Santa Barbara as "Parcel 2" in a deed recorded in Book 2148, Page 556, of Official Records, on April 20, 1966, in the office of the County Recorder of said County:

5. Thence along the centerline of the said 60 foot right-of-way, South 11°47'33" East, a distance of 138.94 feet to the beginning of a curve with a radius of 800 feet, concave to

the West, the radial center of which bears South 78°12'27" West from the point of curvature;

6. Thence continuing along the centerline of the said 60 foot right-of-way along the arc of the said 800 foot radius curve, through an angle of 25°20'20" and an arc distance of 353.80 feet to a point of reverse curvature;

7. Thence continuing along the said centerline, along the arc of a curve with a radius of 500 feet, concave to the Southeast, the radial center of which bears South 76°27'13" East from the point of reverse curvature, through an angle of 6°07'25" and an arc length of 53.44 feet to a point on the centerline of the above-mentioned 60 foot right-of-way;

8. Thence, leaving said centerline of the said 60 foot right-of-way, North 85°05'34" West, a distance of 377.51 feet;

9. Thence North 88°54'40" West, a distance of 72.98 feet to a point on the Westerly line of the above-mentioned "Parcel 1";

10. Thence North 00°56'50" West, along said Westerly line, a distance of 907.36 feet to the point of beginning, containing 9.094 acres.

11. Except that portion lying within the Easterly 30' of the above described property.

BUTLER HARBOUR:

PARCEL ONE:

That portion of Rancho Los Dos Pueblos, in the County of Santa Barbara, State of California, described as follows:

Beginning at the southwest corner of Lot 82, Tract 10.223, Unit Two, as shown on a map thereof recorded in Book 71, Page 75 of Maps, in the office of the County Recorder of said County;

Thence 1st, N. 88°51'45" E., along the south line of Lots 82 through 89, inclusive, of said Tract 10.223, Unit Two, 520.00 feet to the southeast corner of said Lot 89, being also a point in the west line of Lot 91 of said Tract 10.223, Unit Two;

Thence 2nd. S. 1°08'15" E., along said west line, 32.50 feet to the southwest corner of said Lot 91;

Thence 3rd. N. 89°54'03" E., along the south line of said Lot 91, a distance of 106.00 feet to the southeast corner of said Lot 91, being also a point in the west line of Coronado Drive as shown on a map of Tract 10,358, Unit Three, recorded in Book 74, Page 93 of Maps, in the office of said County Recorder;

Thence 4th. S. 0°05'57" E. along said west line of Coronado Drive, 541.31 feet to the beginning of a curve in said line;

Thence 5th, N. 89°11'09" W., leaving said line, 106.83 feet to the most easterly corner of Lot 81, Tract 10,358, Unit Two, as shown on a map thereof recorded in Book 74, Page 48 of Maps, in the office of said County Recorder;

Thence 6th. S. 89°00'00" W., along the northerly line of said Lot 81, a distance of 247.00 feet to an angle point in said line, being also the most easterly corner of Lot 45, Tract 10,358, Unit One, shown on a map thereof recorded in Book 73, Page 85 of Maps, in the office of said County Recorder;

Thence 7th. N. 40°23'34" W., along northeasterly line of said Lot 45, 99.93 feet to an angle point in said line;

Thence 8th. N. 26°05'26" W., continuing along said northeasterly line, 128.37 feet to the northeasterly corner of said Lot 45, being also the southeasterly corner of Parcel "E", Tract 10,223, Unit Two, as shown on a map thereof recorded in Book 71, Page 76 of Maps, in the office of said county Recorder;

Thence 9th, N. 26°05'26" W., along the easterly line of said Parcel "E", 59.76 feet to an angle point in said line;

Thence 10th. N. 41°35'04" W., continuing along said easterly line, 145.00 feet to another angle point therein;

Thence 11th. N. 8°01'33" W., continuing along said easterly line, 214.66 feet to the point of beginning.

PARCEL TWO:

That portion of Rancho Los Dos Pueblos, in the County of Santa Barbara, State of California, described as follows:

Beginning at the most westerly corner of Parcel "E", Tract 10,233, Unit Two, as shown on a map thereof recorded in Book 71, Page 76 of Maps, in the office of the County Recorder of said County;

Thence 1st, S. 55°07'07" E., along the westerly line of said Parcel "E", 121.91 feet to an angle point in said line;

Thence 2nd, S. 0°03'50" E., continuing along said line to and along the westerly line of Lot 45, Tract 10,358, Unit One, as shown on a map thereof, recorded in Book 73, Page 85 of Maps, in the office of said County Recorder, a distance of 425.00 feet to the southwesterly corner of said Lot 45;

Thence 3rd, S. 89°56'10" W. a distance of 108.00 feet;

Thence 4th, N. 0°03'50" W. a distance of 438.60 feet to the beginning of a curve concave easterly, having a radius of 200.00 feet and a delta of 16°19'45";

Thence 5th, Northerly, along the arc of said curve, 57.00 feet to the point of beginning.

PARCEL THREE:

That portion of the Rancho Los Dos Pueblos, in the County of Santa Barbara, State of California, described as follows:

Commencing at the southwesterly corner of the 90.0046 Ac. net parcel of land shown on a survey map filed in Book 63, Page 50 of Record of Surveys, in the office of the County Recorder of said County;

Thence, N. 0°03'50" W., along the westerly line of said 90.0046 Ac. net parcel of land, 348.92 feet to the true point of beginning;

Thence 1st, N. 84°05'21" E., leaving said line and into said parcel of land, 494.96 feet;

Thence 2nd, N. 8°13'23" W. a distance of 109.41 feet;

Thence 3rd, N. 70°46'10" E. a distance of 19.76 feet;

Thence 4th, N. 32°26'10" E. a distance of 84.40 feet to the southwesterly corner of Lot 81 of Tract 10,358, Unit Two, according to the map thereof recorded in Book 74, Page 48 of Maps, in the office of said County Recorder;

Thence 5th. N. 89°00'00" E., along the southerly line of said Lot 81, a distance of 311.68 feet to the southeasterly corner thereof;

Thence 6th. S. 13°03'20" W., leaving said parcel of land, 72.32 feet to the northwesterly corner of Lot 121 of Tract 10,358, Unit Three, according to the map thereof recorded in Book 74, Page 93 of Maps, in the office of said County Recorder;

Thence 7th. S. 7°25'37" E., along the westerly line of said Lot 121, a distance of 90.68 feet to the southwesterly corner thereof;

Thence 8th. S. 80°38'00" E., along the southerly line of said Lot 121, a distance of 160.23 feet to an angle point therein;

Thence 9th. N. 89°43'09" E., Continuing along said line, 440.00 feet to the southeasterly corner of said Lot 121, being also a point in the easterly line of said hereinbefore referred to 90.0046 Ac. net parcel of land;

Thence 10th. S. 0°09'05" E., leaving said Lot 121 and along the easterly line of said 90.0046 Ac. net parcel of land, 5.99 feet;

Thence 11th. S. 89°43'09" W., leaving said line and into said last mentioned parcel of land, 440.49 feet;

Thence 12th. N. 80°38'00" W. a distance of 224.81 feet;

Thence 13th. S. 81°46'37" W. a distance of 283.74;

Thence 14th. S. 84°05'21" W. a distance of 505.29 feet to a point in the westerly line of said last mentioned parcel of land;

Thence 15th. N. 0°03'50" W., along said westerly line, 6.02 feet to the true point of beginning.

KELLOGG:

That certain portion of Lot 10, Tract "C" of Rancho La Goleta partitioned to J. Raymond M. Hill by decree of probate court of Santa Barbara County, February 1, 1868, in the matter of the Estate of Daniel A. Hill, deceased, as shown on the map accompanying the Commissioners report in said matter, in the County of Santa Barbara, State of California, described as follows:

Beginning at the Southwest corner of the Tract of land described in the Deed to Chester R. Rich, et ux.,

recorded December 17, 1959 in Book 1695 at Page 427 of Official Records of said County; thence North 0°39'30" West, along the Westerly line of said Rich Tract, 398.27 feet; thence South 85°56' East, 1065.94 feet to a point on the Northerly prolongation of the centerline of Cambridge Drive, as said Drive is shown on the map of Tract 10111, Unit One, filed in Map Book 53 at Page 67, records of said County; thence South 0°42'25" West along said centerline prolongation, 13.82 feet to a point in said centerline prolongation; thence North 85°01' West, 535.85 feet; thence South 2°27'30" West, 407.40 feet to a point on the Southerly line of the above mentioned Rich Tract; thence North 84°11' West, along said Southerly line, 509.84 feet to the point of beginning.

RESERVING unto grantors, their heirs and assigns an easement for sewer line purposes in, on, over, under and through a strip of land 10 feet in width, lying parallel with, adjacent to and Easterly of the Westerly line of the property hereinabove described.

That certain portion of Lot 10, Tract "C" of Rancho La Goleta partitioned to J. Raymond H. Hill by decree of probate court of Santa Barbara County, February 1, 1868, in the matter of the Estate of Daniel A. Hill, deceased, as shown on the map accompanying the Commissioners report in said matter, in the County of Santa Barbara, State of California, described as follows:

Beginning at a point on the Southerly line of the Tract of land described in the Deed to Louis J. Wolff, recorded April 23, 1951 in Book 986 at Page 200 of Official Records of said County, at its intersection with the Northerly prolongation of the centerline of Cambridge Drive, as said Drive is shown on a map of Tract 10111, Unit One, filed in Map Book 53 at Page 67, records of said County; thence North 86°14' West, along the Southerly line of said Wolff Tract, 385.99 feet; thence, North 84°11 West, continuing along the Southerly line of said Wolff Tract, 162.00 feet to the Southwest corner thereof; thence, North 2°27'30" East, along the Westerly line of said Wolff Tract 407.40 feet to the Northwest corner thereof; thence South 85°01' East, along the Northerly line of said Wolff Tract 535.85 feet to a point on the Northerly prolongation of the centerline of the aforementioned Cambridge Drive; thence, South 0°42'25" West, along the Northerly prolongation of the centerline of the aforementioned Cambridge Drive, 402.30 feet to the point of beginning.

FAIRVIEW:

That portion of the Rancho Los Dos Pueblos, in the County of Santa Barbara, State of California, described as follows:

Beginning at the Northeasterly corner of the property of Harley Barling as said property is recorded in Book 1379, Page 233 of Official Records, said point lying on the centerline of Fairview Avenue and on the Easterly line of the Charles Sexton property as said property is recorded in Book 649, Page 486 of Official Records; thence along the Northerly line of said Harley Barling property South 89°51'30" West 345.90 feet to the true point of beginning; thence continuing along said Northerely line South 89°51'30" West 519.10 feet to a point in the second course as described in the Deed to Harley Barling, a married man, by Deed dated May 3, 1956, recorded May 16, 1956, as Instrument No. 9527 in Book 1379, Page 264 of Official Records, said course having a bearing of North 0°04'30" West; thence North 0°04'30" West 503.73 feet to the point of intersection with the Westerly prolongation of the Northerly line of the real estate described in the Deed to the Goleta Union School District, Santa Barbara County, State of California, dated September 1, 1960, recorded October 10, 1960, as Instrument No. 31452 in Book 1787, Page 177 of Official Records; thence North 89°51'30" East, along said Westerly projection of the Northerly line above referred to 518.60 feet to the Northwest corner of said School District property; thence South 0°08'30" East along the West line of said last mentioned tract, 503.73 feet to the true point of beginning.

A portion of the Rancho Los Dos Pueblos in the County of Santa Barbara State of California, described as follows:

Commencing at the Northeasterly corner of the property of Harley Barling, as said property is recorded in Book 1379, page 233, Official Records, records of said County, said point being on the center line of Fairview Avenue and on the Easterly line of the Charles Sexton property, as said property is recorded in Book 649, Page 486, Official Records, records of said County; thence along the Northerly line of said Harley Barling property, South 89°51'30" West 172.95 feet to the true point of beginning; thence at right angles North 0°08'30" West 503.73 feet; thence at right angles South 89°51'30" West 172.95 feet; thence at right angles South 0°08'30" East 503.73 feet to the common boundary line of said Barling and Sexton properties; thence along said line North 89°51'30" East 172.95 feet to the true point of beginning.

FOOTHILL

Beginning at the Northwest corner of the Albert J. Haverland property as said is described in the matter of the petition of Albert J. Haverland to terminate joint tenancy estate, as recorded in Book 265 at Page 241, Official Records of said County; said point of beginning being also the Northwest corner of the A. J. Haverland property as shown on map thereof filed in Book 24 at Page 100, Records of Surveys of said County; thence South 88°40'30" East, along the center line of Cathedral Oaks Road, 655.51 feet; thence, leaving Cathedral Oaks Road and into above mentioned Haverland property, South 1°19'30" West, 707.00 feet; thence South 89°49'50" West, 484.31 feet to a point in the Westerly line of the above mentioned Haverland property, being a point in the center line of Maria Ygnacia Creek, thence, Northerly along the center line of said Creek the following courses and distances: North 56°05'30" West, 85.00 feet; North 2°48'10" East, 194.91 feet; North 41°41'30" West, 70.00 feet.

HOLLISTER:

That portion of Lot 2 of the subdivision of the A. C. Scull's Estate, in the County of Santa Barbara, State of California, according to the map recorded in Book 1, page 77 of Maps and Surveys, described as follows:

Commencing at the Northwest corner of said Lot 2; thence South 2°22'30" West along the Westerly line of said Lot 2, 1558.48 feet to the Southerly Line of said Lot 2; thence North 74°54'30" East, along said Southerly line 301.94 feet to the point of beginning of the property herein described, said point being the Southwesterly corner of a tract of land described in the Deed to George Northman, et us., recorded January 9, 1948 as Instrument No. 432 in Book 767, page 64 of Official Records, records of said County, as shown on map filed in Book 23, page 50, Record of Surveys, records of said County; thence 1st, North 2°21' east along the Westerly line of said Northman tract 939.67 feet; thence leaving said Westerly line and into said Northman tract; 2nd, north 77°02'30" East parallel with the Northerly line of said tract 408.69 feet to a point in the Easterly line thereof; thence along the Easterly line of said Northman tract the two following courses and distances; 3rd, South 12°26' East 278.61 feet, and 4th, South 1°28' East 620.40 feet to the Southeasterly corner thereof; thence 5th, South 74°54'30" West along the Southerly line of said Northman tract 530.98 feet to the point of beginning.

EL CAMINO:

That portion of the Rancho La Goleta, situated in the County of Santa Barbara, State of Caljfornia, described as follows·

All that certain real property described in the deed from Frances Ripley Willard to Jeanne Ann Troup, recorded November 25, 1927, in Book 35 at Page 250 of Official Records of said County and being described as follows:

Beginning at the intersection of the south line of the Southern Pacific Railroad Company right-of-way and the westerly line of San Marcos Road: thence South 3°49' west along the westerly boundary of San Marcos Road 20.10 feet: thence south 88°11' west parallel to the south boundary of said Southern Pacific Company right-of-way 505.38 feet to point on the westerly boundary of the property described in the Deed from Nelson W. Willard to Donn B. Tatum, recorded March 8, 1961, in Book 1832, at Page 966 of Official records of said County: thence North 4°18' east 20.12 feet to the south line of said Southern Pacific Railroad Company right-of-way: thence North 88°11' east along said right-of-way, 505.00 feet to the point of beginning.

BAY CANYON:

That portion of the Rancho La Goleta, situate in the county of Santa Barbara, state of California, described as follows:

Beginning at a 3/4-inch survey pipe set at the most northerly corner of Tract 10,269, Unit No. 1, according to the official map thereof, recorded in book 71 pages 7 to 11 inclusive, in the office of the county recorder of said county: thence along the easterly line of said Tract 10,269, Unit No. 1, the following courses and distances: South 12°04'05" East 123.26 feet to a 1/2-inch survey pipe: and South 21°06'35" East 372.00 feet to a 1/2-inch survey pipe set at the most easterly corner of said tract, and a point on southerly line of that tract of land described as "Parcel One" in the deed to Santa Barbara Mutual Building and Loan Association, a corporation, recorded February 7, 1963 as instrument no 5529 in book 1975 page 604 of Official Records, records of said county: thence leaving said Tract 10,269, Unit No. 1, and along the southerly, easterly, and northerly lines of said Santa Barbara Mutual Building and Loan Association tract, the following courses and distances: North 71°19'05" East 498.01 feet, more or less, to an angle point therein: North 60°32'50" East 1031.45 feet to a point in the easterly line of a tract of land described as Parcel One in deed to Walter D. Wilson, et al., recorded June 10, 1957 as instrument no. 11079 in book 1452 page 22

of Official Records, records of said county, said point also being in the westerly line of Ladera Vista, as shown on map recorded in book 45 page 64 of Maps, in the office of the county recorder of said county, from which the most southerly corner of the tract of land described as Parcel One in deed to Delia Dunn, recorded in book 120 page 175 of Official Records.

BISHOP RANCH:

That certain parcel of land in the County of Santa Barbara, State of California, described as follows:

Commencing at a point in the westerly line of Tract 10,387, Unit One, as shown on a map thereof recorded in Book 74, Page 20, et seq., of Maps, in the office of the County Recorder of said County, said point being also the most northerly corner of Lot 80 in said tract;

Thence, N. 60°02'16" W., leaving said line, 135.00 feet to the beginning of a curve concave northeasterly, having a radius of 630.00 feet and a delta of 21°50'16";

Thence, Northwesterly, along the arc of said curve, 240.12 feet to the end thereof and the beginning of a reverse curve concave southwesterly, having a radius of 170.00 feet and a delta of 40°59'57";

Thence, Northwesterly, along the arc of said curve, 121.65 feet to the end thereof and the beginning of a compound curve concave southerly, having a radius of 1,400.00 feet and a delta of 16°02'15";

Thence, Westerly, along the arc of said curve, 391.87 feet to the end thereof;

Thence, N. 5°14'12" W. a distance of 30.00 feet to the true point of beginning;

Thence 1st, Continuing N. 5°14'12" W. a distance of 30.00 feet;

Thence 2nd, N. 2°50'42" E. a distance of 91.33 feet;

Thence 3rd, N. 8°11'16" E. a distance of 70.00 feet;

Thence 4th, N. 13°23'57" E. a distance of 196.00 feet;

Thence 5th, S. 86°37'06" E. a distance of 112.16 feet to the beginning of a non-tangent curve concave easterly, having a radius of 1,027.00 feet and a delta of 1°37'10". The radial to the beginning of said curve bears N. 68°25'07" W.;

Thence 6th. Northeasterly, along the arc of said curve, 29.03 feet to the end thereof and the beginning of a reverse curve concave Westerly, having a radius of 45.00 feet and a delta of 36°56'45";

Thence 7th. Northerly, along the arc of said curve, 29.02 feet to the end thereof and the beginning of a reverse curve concave Easterly, having a radius of 45.00 feet and a delta of 6°13'44";

Thence eighth, Northerly, along the arc of said curve, 4.89 feet to the end thereof;

Thence ninth, South 82°29'02" West a distance of 100.00 feet;

Thence tenth, North 12°07'46" West a distance of 119.19 feet;

Thence eleventh, North 21°14'56" West a distance of 52.08 feet;

Thence twelfth, South 74°29'33" West a distance of 534.01 feet to the beginning of a curve concave Southeasterly, having a radius of 2,858.00 feet and a delta of 5°01'37";

Thence thirteenth, Southwesterly along the arc of said curve, 250.75 feet to the end thereof;

Thence fourteenth, South 20°32'04" East a distance of 42.00 feet;

Thence fifteenth, South 22°38'41" East a distance of 208.73 feet;

Thence sixteenth, South 21°09'05" East a distance of 69.61 feet;

Thence seventeenth, South 17°38'12" East a distance of 69.61 feet;

Thence eighteenth, South 14°07'22" East a distance of 69.60 feet;

Thence nineteenth, South 10°43'07" East a distance of 82.45 feet;

Thence twentieth, South 2°37'56" East a distance of 30.00 feet to the beginning of a non-tangent curve concave Southerly, having a radius of 930.00 feet and a delta of 16°27'26". The radial to the beginning of said curve bears North 2°37'56" West;

Thence twentifirst, Easterly along the arc of said curve 267.13 feet to the end thereof and the beginning of a non-tangent curve concave Southeasterly, having a radius of 330.00 feet and a delta of 62°06'26". The radial to the beginning of said curve bears North 67°20'38" West;

Thence twentisecond, Northeasterly and Easterly, along the arc of said curve 357.51 feet to the true point of beginning.

CAVELETTO:

That portion of Tract "C" of the Rancho La Goleta, in the County of Santa Barbara, State of California, partitioned by Decree of the Probate Court of said County, February 1, 1868, in the Matter of the Estate of Daniel A. Hill, deceased, as shown on map Accompanying the Commissioner's report in said matter, described as follows:

Beginning at a 3/4 inch iron pipe monument set 12 inches below the finish grade with a spike and tag marked "R.C.E. 7704" set over said monument on the finish surface, at the most Northerly terminus of the center line of Las Perlas Drive, as said street is so designated and delineated on the Official Map of Tract No. 10,197, recorded in Book 57, at Page 96 et seq., in the Office of the County Recorder of said County; thence, North 0°17'10" West, along the Northerly prolongation of the center line of said Las Perlas Drive, 271.00 feet to the true point of beginning; thence,

North 0°17'10" West, continuing along the prolongation of the centerline of Las Perlas Drive, 516.04 feet; thence,

North 89°42'50" East, 815.32 feet to a point on the center line of Patterson Avenue, as said avenue is shown on a map of survey of the division of the Caterina Cavaletto, et al., property, filed in Book 25, at Page 82, Record of Surveys of said County; thence,

Along the center line of Patterson Avenue, South 3°05'50" West, 161.98 feet to an angle point therein; thence,

Continuing along said center line, South 17°09'10" East, 370.27 feet; thence,

Leaving said center line South 89°42'50" West, 913.19 feet to the True Point of Beginning.

PAGLIOTTI:

That portion of Lot Four of Asa Adams Subdivision of a portion of La Goleta Rancho, in the County of Santa Barbara, State of California, according to the map thereof, recorded February 9, 1877, in Book "B", at Page 341 of Miscellaneous Records, in the Office of the County Recorder of said County, described as follows:

Beginning at the Southwest corner of said Lot 4, being the Northwest corner of the Goleta Sunshine Homes Subdivision as shown on a map of said subdivision filed in Map Book 45, at Page 43, records of said County, thence,

South 89°21'35" East, along the Southerly line of said Lot 4, being along the Northerly line of said Goleta Sunshine Homes Subdivision, 558.68 feet to the Southeast corner of said lot; thence North 1°10'25" East, along the Easterly line of said lot, 778.33 feet to a point in said Easterly line; thence,

Leaving said Easterly line, and into said Lot 4, North 89°21'35" West, 560.71 feet to a point on the Westerly line of said lot from which the Southwest corner thereof bears South 1°01'25" West, 778.31 feet; thence,

South 1°01'25" West, along said Westerly line, 778.31 feet to said corner and the Point of Beginning.

MT. VIEW:

That portion of Lot 9, Tract "C" of Rancho La Goleta, in the County of Santa Barbara, State of California, described as a whole, as follows:

Beginning at a point on the Southwesterly line of a 63.29 acre tract of land as shown on Map filed in Book 28, Page 50, Records of Survey, records of said County from which the Southwesterly corner thereof bears North 81°02'20" West 216.00 feet, said point being in the centerline of a proposed 60.00 foot road at the beginning of a curve concave to the West, having a delta of 29°58'16", the radial center of which bears North 81°02'20" West 300.00 feet; thence along the centerline of said proposed 60.00 foot road, the following course and distances: 1st, Northeasterly, Northerly, and Northwesterly along the arc of said curve concave to the West, having a delta of 29°58'16" and a radius of 300.00 feet, 156.93 feet to the end thereof and the beginning of a reverse curve to the right, having a delta of 24°30'23" and a radius of 648.00 feet; 2nd, Along the arc of said reverse curve to the right, 277.16 feet to the end thereof; 3rd, North 3°29'47" East 29.26 feet; 4th, South 81°02'20" East 667.00 feet to the beginning of a curve to the

left having a delta of 10°20'26" and a radius of 860.00 feet; 5th. Along the arc of said curve to the left, 155.21 feet to the end thereof and 6th. North 88°37'14" East 138.00 feet; thence at right angles, leaving the centerline of said proposed 60.00 foot road; 7th. South 1°22'46" East 30.00 feet to the Southerly line thereof; thence 8th. South 12°46'04" East 163.66 feet; thence 9th. South 6°08'33" East 144.74 feet; thence 10th. 4°12'54" West 159.00 feet to a point on the Southwesterly line of said 63.29 acre tract of land; thence along the Southwesterly line thereof; 11th. North 81°02'20" West 947.36 feet to the point of beginning.

EXCEPTING therefrom any portion thereof lying within the lines of Tract No. 10316, Unit No. 1, as shown on a map recorded in Book 72, pages 47 through 51, inclusive, of Maps, in the office of the County Recorder of said County.

LA PATERA:

That certain real property, being a portion of Rancho Los Dos Pueblos, in the County of Santa Barbara, State of California, described as follows:

Commencing at a 1/2 inch survey pipe set on the Westerly line of La Patera Lane at the Northwesterly corner of Tract No. 10116, recorded in Book 54 at Page 78, et seq., of Maps, records of said County; thence North 31°48'00" West 838.06 feet to the true point of beginning; thence 1st, South 72°52'30" West 748.90 feet; thence second, at right angles, North 17°07'30" West 547.52 feet; thence 3rd, at right angles, North 72°52'30" East 610.45 feet to the beginning of a curve to the right, having a delta of 11°03'37" and a radius of 500.00 feet; thence 4th. Northeasterly along the arc of said curve, 96.52 feet to the end thereof; thence 5th. North 83°56'07" East 145.00 feet; thence 6th, at right angles, South 6°03'53" East 520.07 feet to the true point of beginning.

RESERVING an easement for road and public utilities and sewer purposes, for ingress or egress, over, under, upon or through the following described parcel of land:

Beginning at the Southeasterly corner of the tract of land hereinabove described; thence South 72°52'30" West 30.57 feet; thence North 6°03'53" West 480.93 feet to the beginning of a curve to the left, having a delta of 90°00' and a radius of 15.00 feet; thence Northwesterly and Westerly along the arc of said curve, 23.56 feet to the end thereof; thence South 83°56'07" West 100.00 feet to the beginning of a curve to the left, having a delta of 11°03'37" and a radius of 470.00 feet; thence

Southwesterly along the arc of said curve, 90.73 feet to the end thereof; thence South 72°52'30" West 610.45 feet to a point in the Westerly line of the tract of land hereinabove described; thence North 17°07'30" West 30.00 feet to the Northwesterly corner of said tract; thence North 72°52'30" West 30.00 feet to the Northwesterly corner of said tract; thence North 72°52'30" East 610.45 feet to the beginning of a curve to the right, having a delta of 11°03'37" and a radius of 500.00 feet; thence Northeasterly along the arc of said curve, 96.52 feet to the end thereof; thence North 83°56'07" East 145.00 feet; thence at right angles, South 6°03'53" East 520.07 feet to the point of beginning.

Southern California Gas Company, 248.95 acres, meter/one active well, active well for emergency and fire use at an average of 1 AF for maintenance and construction of gas storage wells and related facilities, parcel nos. 071-200-08, 071-200-11, 071-200-0-12, 071-200-13, 071-200-23, 071-200-25 and 071-210-01.

The surface and upper five hundred (500) feet of the following described property:

Beginning at U.S. Monument marked G.5-5.20 being Post No. 5 of the Rancho Goleta per map recorded in Book 17, Pages 188 and 189, Office of the County Recorder of Santa Barbara County, California; thence South 76° 45' 00" East, 1,263.54 feet; thence South 82° 04' 00" East, 739.17 feet; thence North 89° 30' 00" East, 301.78 feet; thence South 87°14'00" East, 302.00 feet; thence South 88°25'00" East, 1.488 feet; thence South 79°12' 00" East, 29.57 feet; thence North 01°08' 00" East, 1,800.00 feet; thence North 88° 52' 00" West, 66.00 feet; thence North 01° 08' 00" East, 443.75 feet; thence South 77° 09' 00" West, 41.71 feet; thence South 84° 38' 00" West, 113.68 feet; thence North 80° 57' 00" West, 163.59 feet; thence South 86° 36' 00" West, 666.10 feet; thence South 89°42'30" West, 1,015.80 feet; thence South 0° 53' 00" West, 154.92 feet; thence South 85° 59' 00" West, 395.65 feet; thence South 68° 25' 00" West, 613.19 feet; thence North 46° 30' 00" West, 2,294.05 feet; thence South 66° 44' 30" West, 43.45 feet; thence South 67° 08' 30" West,928.18 feet; thence South 89° 57' 00" West, 480.00 feet; thence South 0° 00' 29" West, 2,570.41 feet; thence due East 1,888.92 feet to T.P.O.B. (G-5); EXCEPTING that portion of the surface of the above described property sold to

the Goleta Sanitary District described by the following documents:

A. APN 071-200-03-9
INST. NO. 50-0007541
RECORDED 5/31/50
BOOK 920, PAGE 176, O.R.;

B APN 071-200-19-4
INST. NO. 66-0037493
RECORDED 11/25/66
BOOK 2173, PAGE 183, O.R.;

C. APN 071-200-22-5
INST. NO. 81-0003565
RECORDED 1-27-81;

D. APN 071-200-24-1
INST. NO. 81-0003565
RECORDED 1-27-81

Also excepting those portions of the surface of the above described property sold to the County of Santa Barbara described as APN 071-200-18-6, recorded 4/64 as Inst. No. 64-0017083 and to the State of California described as Ward Memorial Freeway (State Hwy No. 217).

6. Nonparticipating Parties

Nonparticipating Parties have the collective right to extract no more water than they were extracting during Water Year 1973-74. Upon motion, the Court shall exercise its continuing jurisdiction to determine the amount of the right of a Nonparticipating Party. Nonparticipating Parties and the legal description of properties to which this Judgment attaches are shown on Exhibit C attached hereto and hereby incorporated by this reference.

7. Defaulted Parties

The extraction of water from the Basin by the following Defaulted Parties was, is, and in the future will be, unreasonable and not for beneficial uses. Accordingly, Defaulted Parties, collectively and individually, have no

right to use or take water from the Basin. The Water District's, its customer's and the Participating Parties' rights under this Judgment are superior and paramount to any claimed water rights of the Defaulted Parties. Defaulted Parties and the properties to which this Judgment attaches are shown on Exhibit D attached hereto and hereby incorporated by this reference.

8. **Nonparties**

A Nonparty has no right under this Judgment to extract water from the Basin. The court shall determine whether to exercise its continuing jurisdiction with respect to a Nonparty after due notice and opportunity to be heard. The court shall establish the rights of a Nonparty under the terms of this Judgment but in no event shall the court authorize a Nonparty to export water from the Basin Watershed.

9. **Overlying Rights**

The lands overlying the Basin owned by the Overlying Owners have primary, paramount and superior, present and future rights, correlative with all other Overlying Owners, to any right of the Water District, La Cumbre or any other appropriator to extract the water of the Basin.

10. **Appropriators**

Water District and La Cumbre are appropriators when they extract and take the waters from the Basin, with La Cumbre having the senior right, and as appropriators, they are limited and restricted to extracting and only taking

surplus waters over and above the amount of water taken now and to be taken in the future by the Overlying Owners for their reasonable and beneficial uses. As of the date of the Judgment, La Cumbre has the appropriative right to extract up to 1,000 acre feet per year. As of the date of the Judgment, Water District has the appropriative right to extract up to 2,000 acre feet per year.

11. Storage

(a) Except as provided in Section 25, the Water District has appropriated the exclusive right to store imported water in the Basin. Overlying Owners and appropriators other than La Cumbre may store water only with the permission of the Water District. Currently, no water is stored in the Basin by the Water District.

(b) In addition to the appropriative rights referred to in Section 10 above, La Cumbre and the Water District have the right to extract any Temporary Surplus in accordance with the terms of this Judgment, provided the Water District is in compliance with the court approved Water Plan.

FINDINGS

12. Reasonable Use

The quantities of water taken by the Overlying Owners, La Cumbre and the Water District have been, and are, used for reasonable and beneficial purposes as of the date of this Judgment.

13. Hydrologic Balance

The Safe Yield of the Basin is 3,410 acre feet per year. The perennial yield of the Basin, including 350 acre feet per year for Water District's injection well system and 100 acre feet per year for return flow is approximately 3,700 acre feet per year. The average Overdraft for the last 10 years is approximately 900 acre feet per year. The current Overdraft is approximately 2,300 acre feet. The implementation of the Water Plan will eliminate the Overdraft and return the Basin to Hydrologic Balance by December 31, 1998. In addition to the appropriative rights referred to in Section 10 above, the Water District and La Cumbre may use the Temporary Surplus of the Basin to satisfy interim demands without damaging the Basin, provided the Water District complies with the court approved Water Plan.

14. Physical Solution

This Judgment represents a fair and equitable "Physical Solution" which is compelled by the facts and circumstances of this case and the mandates of Article 10, Section 2 of the California Constitution. The water delivered by the Water District or pumped by the Overlying Owners shall be considered management of the ground water resource by the Water District for the benefit of the Overlying Owners. As such, the Overlying Owners' conditional offer to transfer ground water rights to the Water District is given in consideration of the Water District's conditional offer to manage the ground water resources on behalf of the respective Overlying Owners. However, this conditional

offer to transfer is not intended to and shall not be construed to result in a severance of the overlying water rights. With respect to the Public Overlying Owners and La Cumbre the specific provisions of Sections 25, 27, 28, 29 and 30 of this Judgment concerning the rights of the Public Overlying Owners and La Cumbre to extract and use water shall govern with respect to their existing and future uses.

15. Quantities

The total quantity of water extracted by the Private Overlying Owners as of the date of Judgment is approximately 351.411 AFY. The quantified right for each Private Overlying Owner may be increased, without court approval, only if there is no Change of Use. The court shall include such additional extractions to a Private Overlying Owner's quantified right in the court's next annual order. La Cumbre and Water District may appropriate Safe Yield and Temporary Surplus, if any, in excess of that amount.

16. Voter Approval

Entry of this Judgment by the court does not require voter approval under Water District's Responsible Water Policy Initiative Ordinance or any other Water District ordinance. But actions by the Water District to implement the Plan may require voter approval. If voter approval is required, the Water District shall solicit voter approval expeditiously.

17. Environmental Review

The entry of the Judgment by the court does not require review under the California Environmental Quality Act ("CEQA"), but the act or actions to implement this Physical Solution and Judgment may have the potential for creating a physical change in the environment as defined by Public Resources Code Section 21065 and Title 15, California Administrative Code Section 15378. Subsequent environmental review may be required.

18. West Basin

The West Basin is located adjacent to the North-Central Basin. Two suits are pending with respect to the West Basin. (**West Basin Association v. Goleta Water District** (SBSC No. 152435 and **County of Santa Barbara v. Goleta Water District** (SBSC No. 163979). This Judgment does not affect those cases but nothing herein precludes the joint management of the two Basins.

PHYSICAL SOLUTION

19. **Court Approved Water Plan Annual Review**

(a) Water District's continuing right to extract water from the Basin and to exercise the water rights of Overlying Owners transferred to it under this Judgment is dependent each year upon the court's annual orders following Judgment finding that the Water District is currently and is likely during the following year to be in compliance with the Water Plan, which annual orders are to be issued no later than

August 1, 1990, and on or before August 1 of each succeeding year.

(b) On or before August 1, 1989, Water District shall file with the court and serve on all parties a report entitled "The First Annual Report" setting forth: (1) how it has, or has not, complied with the Water Plan since entry of Judgment and how it intends to comply with the Water Plan for succeeding years; (2) the amount of water imported to the Basin by the Water District; (3) the amount of water extracted from the Basin by the Water District; (4) the amount of water which the Water District intends to import; (5) the amount of water which the Water District intends to extract; (6) evaluation of the integrity of the Basin with respect to salt water intrusion and subsidence and levels of unreasonable well interference; (7) effects on water quality; and (8) such other and further information as the court or Water District may deem necessary or appropriate. On or before September 30, 1989, the court shall conduct a hearing to review Water District's First Annual Report.

(c) Beginning on June 15, 1990, and continuing on June 15 of each succeeding year, Water District shall file with the court and serve on all parties an additional annual status report containing the information described in subparagraph (b).

(d) Any party objecting to any portion of any annual status report shall within thirty (30) days after the same

was mailed by Water District file its objections as a Law and Motion matter.

(e) On or before July 31, 1990 and on or before each subsequent July 31, the court will conduct a hearing on the annual report.

(f) On or before August 1, 1990, and on or before each subsequent August 1, the court will issue its order with respect to the annual report.

(g) An appropriate hearing on objections filed pursuant to subparagraph (d) above shall be expeditiously heard on the court's calendar giving priority only to cases entitled to statutory preference.

(h) Regardless of whether a hearing is requested, the court shall review every Water District status report, and shall reach and reduce its conclusions to annual orders made pursuant to this Judgment which the court shall cause to be served on the parties specifying whether Water District is in compliance with this Judgment and previous orders of the court designed to bring the Basin into Hydrologic Balance by December 31, 1998.

(i) If the court determines that due to Water District's bad faith or its negligence its actions will not achieve Hydrologic Balance by December 31, 1998, the court shall ensure compliance by court order, including but not limited to injunctive relief and its power of contempt.

(j) Any reduced delivery of water to customers shall be shared equally by all Water District customers, including

those who receive Exchange or Augmented Service as set forth below. This provision shall not apply to Private Overlying Owners receiving Managed Service.

(k) Water District shall provide verified monthly water production statistics from all sources to the Court and the parties.

20. Water Plan

The court will ensure that the Water District shall reduce the amount which it extracts from the Basin and/or supply additional water in amounts adequate to achieve Hydrologic Balance and provide water to Public and Private Overlying Owners for Exchange and/or Augmented Service on the terms and conditions set forth in this Judgment. The Water Plan also addresses future water demand, but this Judgment only compels the Water District to achieve Hydrologic Balance and provide water to Overlying Owners as stated herein.

21. Transfer of Rights

(a) Each Private Overlying Owner, in exchange for water service from the Water District and the payments and other consideration provided hereinafter, shall, within ninety (90) days from this date, execute Exhibit E attached hereto, subject to the review and approval of the attorney for each Private Overlying Owner, which conditionally and irrevocably offers to transfer and assign to Water District all present right, title and interest to and for: (1) Basin water, (2) an access easement to maintain and operate or

seal the well, (3) its existing wells, and (4) a license for reasonable access to the well during daylight hours, emergencies excepted and a pipeline easement to connect the well to the Water District's water system. These easements and licenses shall be reconveyed to the Private Overlying Owner when and if the Water District determines that the wells are surplus to Water District needs. The form to be used for this offer of dedication for the transfer of rights is attached hereto as Exhibit E.

(b) The Water District shall accept in writing each Private Overlying Owner's offer to transfer upon providing Augmented or Exchange Service on or before December 31, 1998, or pay permanent damages pursuant to the terms of this Judgment. The Water District cannot require a Private Overlying Owner who is receiving Managed Service to transfer water rights.

(c) From and after the acceptance of the offer to transfer, the Private Overlying Owner shall not extract water from the Basin and Water District shall provide service to the property.

22. Exchange Service

(a) A Private Overlying Owner who has a quantified right greater than zero may request Exchange Service from the Water District under this section if there is no increase in the amount of water to be consumed or, if additional amounts are anticipated, there is no Change of Use. At the election of a Private Overlying Owner the Water

District shall within 30 days of the receipt of such request for Exchange Service provide Managed Service or regular metered service through the community system as may be consistent with this Judgment. A Party who wishes service on any other basis shall request Augmented Service as set forth below. When the Water District provides Managed Service, "Back-up Service" shall be guaranteed. "Back-up Service" means that if a well fails for any reason (such as dropping water levels, old age, etc.) Water District will provide an equal amount of water at the same cost as set forth in this Judgment.

(b) When the Private Overlying Owner receives Exchange Service, Water District shall bear all maintenance and operation costs, including all utility charges, and Water District shall assume all liability arising out of management of said well and it agrees to indemnify the Private Overlying Owner against any liability regarding said well. Private Overlying Owners shall pay regular Water District rates, and terms and conditions of water use shall be in accordance with Section 24 of this Judgment.

(c) The Water District shall not require a Private Overlying Owner to accept service from or through an agricultural meter. If Water District provides service through the community system, the Overlying Owner shall bear the actual costs for installing connections from the Water District's pipeline system to, and including, the meter and any capital facilities charge levied by the Water District.

(d) The conveyance of the water well described in Section 22(a) and (b) herein shall be deemed to be in complete payment of the capital facility charge, unless the Water District shows that the Party's well(s) has a useful life less than 10 years as of the date of Judgment for the amount of water quantified for its use in which event the Party shall pay the difference between the value of the well and the cost of the water system installation. If the value of the well as of the date of Judgment exceeds the value of the capital facility charge as of the date of connection to community system, the Water District will within 60 days of the date of connection pay the Party the fair market value of the well less the cost of the capital facility charge.

(e) In consideration of the transfer of agricultural wells and water rights, licenses and easements specified above, the Water District shall provide agricultural water users during the amortized life of the well with a credit against the water rates charged by the Water District so that the cost of agricultural water delivered by the Water District under this Judgment does not exceed the cost of producing water from the well.

(f) In order to effectuate the physical solution, no vote is required under the Responsible Water Policy Initiative Ordinance or other Water District law for this Exchange Service, for replacement of Exchange Service facilities, or for any back-up service for Exchange Service. If Water District provides Measure G temporary water service

to any Private Overlying Owners. said Private Overlying Owners are deemed to have wells registered in compliance with Measure C in the course of this litigation and as a component of the physical solution.

(g) County Health Services will approve Exchange Service water as if it were a Water District distribution system water supply, so long as Water District agrees to satisfy and pay for County Health Services' requirements.

(h) Water District will provide for fire service connections as requested by Private Overlying Owners, but at no greater expense to Private Overlying Owners than if Private Overlying Owners had metered service issued before the adoption of Water District Ordinance No. 72-2.

(i) If there is an affirmative vote on Augmented Service (including conversion of Exchange Service to Water District regular metered service through the community system) Private Overlying Owners may convert to Water District's regular metered service without a further or additional vote. If there is a negative vote on Augmented Service, a Private Overlying Owner: (a) who is receiving Managed Service shall be entitled to damages paid in accordance with the procedures set forth in Section 32 of the Judgment, but measured for temporary damages purposes only, by the difference between the fair market value of the lands with regular metered service and the fair market value of the lands with Managed Service, during the period of noncompliance; (b) who is denied Augmented Service or other

Exchange Service shall be entitled to damages as set forth in Section 32 herein.

23. Augmented Service

(a) On or before the Trigger Date, the Water District shall provide to Private Overlying Owners up to 500 acre feet per year of Augmented Service upon a filing by said owner showing as follows: (1) entitlement under the Judgment; (2) reasonableness of quantity of water desired as measured by custom and habit of like uses within the region or community; and (3) uses and methods of use to which such water will be devoted.

(b) Upon the occurrence of the following three additional conditions, Augmented Service will be provided, even if they occur before Trigger Date:

(1) Cachuma reservoir reaches 100,000 AF in storage;

(2) Water District produces new sources of water in compliance with Section 31(a)(4) herein; and

(3) A vote authorizes Augmented Service, if legally required (i.e., not required if moratorium lifted by Water District). Water District shall hold the Augmented Service vote on or before the primary election of June, 1990, and may conduct any other required vote at any time within its discretion.

If such vote is to deny Augmented Service, Water District shall pay damages as set forth in Section 32 commensurate with the amount of available New Sources of Water.

(c) If the Water District approves the validity of the information provided in section 23(a), and if the conditions of Section 23(b) are met, and if the Water District is in compliance with the Water Plan, the Water District shall promptly provide Augmented Service. From and after the commencement of such service, the Private Overlying Owner shall not extract water from the Basin.

(d) If there is a dispute as to whether the Private Overlying Owner is entitled to Augmented Service, the matter shall be resolved by the court as a Law and Motion Matter.

(e) The Private Overlying Owner shall bear all costs of installing the meter for Augmented Service and the pro rata costs of the capital facilities necessary to deliver the additional water to the property, which capital facilities costs shall not exceed $20,000.

(f) If Water District approves the application for Augmented Service, the Water District shall issue a can and will serve letter. The letter shall include the following, or equivalent, statement:

"By this correspondence the Water District has expressed its determination that water supplies are adequate to serve the applicant's needs and that the Water District is willing to provide water service to

the applicant. The Water District's position will remain unchanged except by action of its Board of Directors. If the Board changes the Water District's position with respect to this application, the Board will only do so in writing executed by the Board's presiding officer. No other correspondence, written or oral, should be relied upon in determining the Water District's position with respect to the Water District's ability and willingness to serve the applicant."

(g) If the Water District denies Augmented Service after the Trigger Date for any reason, including a negative vote on Augmented Service, damages shall be paid in accordance with Section 32.

24. Non-Discrimination

Any Exchange Service, other than Managed Service, or Augmented Service provided to any Overlying Owner by the Water District shall be on an equal basis with all other Water District customers and applicants for service insofar as rates, terms and conditions of water use are concerned, including any reduced extraction and customer consumption required to bring the Basin into Hydrologic Balance. In no event shall an Overlying Owner pay more than the rate paid by persons of like class who were customers of the Water District as of October 3, 1973.

SPECIAL OBLIGATIONS

25. La Cumbre

(a) La Cumbre, as senior and prior appropriator, shall have the right to continue to extract an average of One Thousand (1,000) acre feet of water from the Basin, calculated on a ten year running average.

(b) All water delivered by La Cumbre to its customers is used on land located within the Water District's boundaries and inside and outside of the Basin Watershed but some of La Cumbre's customers do not overlie the Basin. The water extracted from the Basin by La Cumbre is used to provide water to its customers through its distribution system for public use inside and outside the Basin Watershed for domestic and irrigation purposes.

(c) Assignments of water rights to the Water District by its customers or by any Overlying Owner (including, but not limited to, the assignments referred to in Paragraph 21 above) shall not affect, limit, diminish, or restrict La Cumbre's right to extract water as herein provided, and shall not change the status or priority of La Cumbre and/or the Water District with respect to water rights in the Basin.

(d) In any water year in which La Cumbre's average extractions from the Basin exceed 1000 acre feet (calculated on a ten year running average), La Cumbre's cumulative Water Credit under that certain agreement to supply water between Water District and La Cumbre dated December 1, 1962, as

amended January 20, 1966 and May 24, 1977 shall be reduced by the amount of water La Cumbre extracts from the Basin in excess of the following amounts for the following water years:

1989-90	1265 AFY
1990-91	1215 AFY
1991-92	1165 AFY
1992-93	1115 AFY
1993-94	1065 AFY
1994-95	1015 AFY
Thereafter	1000 AFY

(e) Until December 31, 1998, Water District shall deliver "spill water", from Lake Cachuma to the maximum extent feasible through the Water District's system and La Cumbre shall purchase such water from the Water District at the Water District's actual cost. After December 31, 1998, Water District shall offer to deliver 20% of the treated spill water from Lake Cachuma through the Water District's system at the Water District's actual cost but if the offer is not accepted, Water District may use La Cumbre's wells for injection of water into the Basin.

(f) La Cumbre may store water in the Basin after December 31, 1998. Until December 31, 1998, Water District may use La Cumbre's wells for injection of water into the Basin when such injection can occur without interfering with La Cumbre's service to La Cumbre's customers. Injection by the Water District shall not occur elsewhere unless the volume of spill water available for the injection cannot be injected into La Cumbre wells. After December 31, 1998, La Cumbre may store water in the Basin and the Water District

is not entitled to use La Cumbre's wells for injection of water under this provision.

26. County (Police Power)

(a) The Parties acknowledge that the County is responsible for determining the rate and extent of land development within the Water District service area. The Parties acknowledge that the Water District is responsible for developing such additional water supplies as provided for under this Judgment consistent with the County General and Specific Plans. The County and the Water District shall cooperate and avoid interference with each other in the performance of each of their respective responsibilities.

(b) Except as provided in Section 31, nothing in this Judgment shall be interpreted to alter or diminish the authority and duties of the County under federal, state and local law to protect the public health, safety and welfare by implementing legal mandates or exercising discretionary powers, including but not limited to:

(1) Adoption, review, amendment, and interpretation of legislation, including but not limited to General Plan elements, zoning and growth management ordinances, other police power measures of general or community application, and administrative guidelines for implementation of laws or policies. This Judgment shall not be construed to alter or diminish the duty of the County to submit measures to the voters in accordance with California law.

(2) Processing, consideration, approval, denial, and conditioning of applications for development approval, including but not limited to zoning approvals, subdivision maps, development plans, use permits, as well as findings of consistency with all applicable laws and plans and other findings required or authorized by law in connection with such approvals.

(3) Environmental review of programs and projects subject to the California Environmental Quality Act (CEQA) and implementing State and County guidelines, including identification and analysis of a project's environmental impacts and mitigation thereof, certification of the adequacy of environmental documents, and findings as to mitigation or overriding considerations regarding impacts related to water use.

27. School Districts

(a) Water District acknowledges that the responsibility for providing public school educational facilities, including all school-related buildings and facilities, within the Basin Watershed, lies with the School Districts. The Goleta Union School District has responsibility for primary school facilities within that area, and the Santa Barbara High School District has responsibility for junior high school and high school facilities within that area. (As used herein the term "school-related buildings and facilities" includes not only the schools themselves but also include such related and

support facilities as auditoriums, playfields, warehouses, central kitchens, maintenance and operation facilities and employee housing.) The School Districts acknowledge that the Water District is responsible for providing water supplies as are needed to meet the present and future needs for public school educational facilities for the area within the Water District. The School Districts and the Water District shall cooperate with each other and avoid interference with each other in the performance of each of their respective responsibilities.

(b) The School Districts' authority and duties are fulfilled by implementing constitutional, statutory and case law mandates and exercising discretionary powers, including but not limited to:

(1) Determining the nature, extent and geographic location of all school-related buildings and facilities; and

(2) Buying, selling, or leasing (as either lessor or lessee) land, buildings and facilities, as the governing boards of the School Districts determine, in their discretion, is necessary or appropriate to fulfill their educational functions.

(c) Due to short-term demographic changes, the school populations in the primary, junior high and high schools within the Basin are presently diminishing. All school buildings and other school-related facilities within the subject geographic area are now being served by the Water District through existing meters. Two essentially

undeveloped parcels owned by Goleta Union School District are now served by small wells and that School District now leases two larger wells to the Water District. Either or both of the School Districts may, in their discretion, elect to rent or lease to third parties, for uses other than public school uses, some of the school-related buildings and facilities (or portions of such buildings and facilities) as the School Districts may determine are appropriate, and that such renting or leasing to third parties shall not jeopardize the right of the School Districts or their tenants or lessees to continue to receive service to those leased or rented facilities, through the existing Water District meters.

(d) The School Districts may, in their discretion, sell or lease to third parties any lands now owned by them which are surplus and not required for schools and school-related facilities. Upon any sale or lease of surplus property by a School District to a private person, the buyer or lessee shall have the same rights as Private Overlying Owners. If a School District leases or sells surplus land to another school district, the buyer or lessee shall stand in precisely the same position as seller or lessor with respect to groundwater rights.

(e) Except as provided in subparagraph (i) below, Water District may utilize the groundwater underlying the School Districts' lands, together with all existing water production and transmission facilities, so long as the Water

District is delivering water to the School District's school-related buildings and facilities on their existing land. School Districts shall not extract water from the Basin so long as Water District is satisfying the School Districts' water service needs to their existing properties. If the Water District at any time fails to deliver water to existing and future schools and school-related facilities located on lands now owned by the School Districts pursuant to the provisions of this section, the School Districts may not only recover the water production and transmission facilities which the Water District has been using pursuant to this subparagraph, but may also then develop and use the groundwater lying beneath their respective lands.

(f) The Court recognizes that the School Districts may be compelled by future demographic changes to develop new schools or school-related buildings and facilities in geographic areas in which the School Districts do not now own land.

(g) The Water District further acknowledges that, depending upon future population changes, either or both of the School Districts may in the future find it necessary or appropriate to acquire new sites for schools and school-related buildings and facilities, to build such new buildings and facilities, or to expand presently existing buildings and facilities. If and when such new, relocated or expanded buildings and facilities are required, the School Districts will need additional water service for such

purposes. A School District shall have the following rights with respect to any lands which it determines, in its discretion, are necessary to be acquired by it in the future for school or school-related buildings or facilities. The School District acquiring the land shall be subject to the same showings as would be required if it were proposing to develop land which it had owned as of the date of this Judgment. That is, the acquiring School District shall:

(1) Be subject to the California Environmental Quality Act, to the same extent as it would have been if it had owned the land as of the date hereof; and

(2) The School District's right to groundwater for or on the acquired parcel, if any, shall be supported by whatever rights are appurtenant to the acquired parcel under this Judgment; and

(3) The School District shall be entitled to assert, and to litigate at that time if appropriate, the question as to whether it is entitled to any "super-priority" with respect to use of groundwater, on any basis including but not limited to the authorities previously relied on in the School Districts' September 13, 1988 motion herein;

(4) The School Districts shall in all events be entitled to assert their power of condemnation to acquire water supplies for any such newly acquired lands, in the event they are unable to establish on any of the foregoing grounds a right to develop and use water on the newly

acquired lands without asserting any right of condemnation. The School Districts' powers of condemnation are not intended to be either expanded or contracted by the provisions of this Judgment.

(h) By its motion and authorities filed herein on September 13, 1988 the School Districts asserted a "super-priority" right to groundwater. The other parties to this action have not agreed to the existence of any such School District "super-priority" right. No determination is made herein, nor has any determination been made in this action, regarding the existence or non-existence of a water use special priority ("super-priority") in favor of the School Districts in the subject Basin. The School Districts' claim to such "super-priority" is not yet ripe for judicial determination, in that all of the School Districts' present water needs are now being met through existing Water District meters. Accordingly, no provision of this Judgment shall constitute or be construed as either a recognition, relinquishment, waiver, or diminution of any such claim of special priority ("super-priority") on the part of the School Districts. That issue is specifically reserved for future determination, as provided below. The School Districts accordingly shall not be required to either assert or defend the claimed existence or non-existence of any such special priority right unless and until such future time, if any, as either of said School Districts asserts that it has a current, beneficial entitlement to water in

the subject Basin, based on failure of the Water District to provide full water service to the respective School Districts for both their present and future school-related buildings and facilities located on lands presently owned by the School Districts. In light of the provisions of this paragraph, no statute of limitations shall begin to run against any such claim of special priority ("super-priority") on the part of the School Districts, unless and until it is asserted in the future in this or some other action.

(i) Nothing in the foregoing provisions of this paragraph shall affect the existing rights of the parties with respect to the two existing wells which are now under lease or license by the Goleta Union School District to the Water District (being the El Camino well site and the Handelmann well located on the Foothill School site).

28. **City of Santa Barbara**

(a) Water service to City Land shall be provided pursuant to that certain Joint Powers Overlap Agreement between the City and the Water District dated February 11, 1982, as it may be amended from time to time. Upon termination of that agreement, the Water District shall serve the City Land with water as follows:

(1) Land used for public, municipal or governmental purposes shall be furnished water in the amounts needed for those purposes. For purposes of this provision, land is not considered "used for public,

municipal, or governmental purposes" unless it is either occupied by a public, municipal or governmental entity, or is used to generate revenue which directly supports public, municipal and governmental activities.

(2) Land used for any purpose other than a public, municipal or governmental purpose shall be treated as if that land were owned by a Private Overlying Owner and subject to this Judgment.

If at any time the District fails to deliver water to City Land in accordance with the provisions of this Judgment, the City shall have the right to recover all water production and transmission facilities located upon City Land and to extract water from the Basin to serve City Land.

Nothing in this paragraph shall be deemed or construed a relinquishment, waiver or diminution of any right of water use or extraction which the City owns or enjoys by virtue of its status as a public, municipal and governmental entity.

(b) No determination is made herein, nor has any determination been made in this action, regarding the existence or non-existence of a pueblo right in favor of City in the Basin. No provision of this Judgment shall constitute or be construed a recognition, relinquishment, waiver or diminution of any such pueblo right, and City shall be required neither to assert nor to defend the claimed existence or non-existence of a pueblo right in favor of the City unless and until such time, if any, as

City asserts that it has a current, beneficial entitlement to water in the Basin based on a pueblo right.

29. Southern California Gas Company

The Southern California Gas Company shall be entitled to Exchange Service and Augmented Service on the same basis as the Private Overlying Owners, with the exception that it will be allowed to maintain a well for emergency fire protection and cool-down purposes and maintenance and construction of its gas storage wells and related facilities. Nothing in this paragraph shall be deemed or construed a relinquishment, waiver or diminution of any right of water use or extraction which Southern California Gas Co. owns or enjoys by virtue of its status as a public utility. If Southern California Gas Company sells or leases property subject to the Judgment to a private person, the buyer or lessee shall have the same rights as a Private Overlying Owner.

30. County (Overlying Owner)

The Water District shall operate, maintain and replace all water production, storage and transmission facilities within the Basin Watershed now owned by the County and shall supply water for the public, municipal and governmental purposes of the County. If the Water District fails to deliver water under this Judgment, the County may recover the facilities and commence again to supply County property from the Basin. As long as the Water District provides such service the County will not extract water from the Basin.

Nothing in this paragraph shall be deemed or construed a relinquishment, waiver or diminution of any right of water use or extraction which the County owns or enjoys by virtue of its status as a public and governmental entity. If the County sells or leases property subject to this Judgment to be used for public purposes, the buyer or lessee shall stand in precisely the same position as the County with respect to groundwater rights.

If the County sells or leases property subject to this Judgment to a private person for private purposes, the buyer or lessee shall have the same rights as Private Overlying Owners.

ENFORCEMENT AND IMPLEMENTATION

31. Recognition of Water Supply

(a) In order to implement the Physical Solution and promote the orderly and objective quantification or allocation of water in the Basin, the Private Overlying Owners and La Cumbre have adjudicated water rights in the quantity and to the extent specified in this Judgment and implementing orders. As related to land use policy decisions, County will allow development on Quantified Right/Exchange Service. The County shall, in connection with reviewing and acting on applications for development of a Private Overlying Owner's land, recognize a "can and will serve letter" from the Water District and/or La Cumbre to furnish metered water supply in compliance with this Judgment, as proof that public water supply to the extent

specified in said letter and consistent with this Judgment is available to serve the project, if, at the time of such review or action:

(1) the court has approved Water District's Water Plan to bring the Basin into balance by December 31, 1998 and issued its order under this Judgment; and

(2) the court has found within the preceding 12 months that Water District is in compliance with the Water Plan; and

(3) the Water District is in compliance with all orders of the court pursuant to the Judgment; and

(4) the Water District has acquired or developed a firm, adequate, and available supply of water in an amount sufficient to provide service to Overlying Owners seeking development approval or other Augmented Service based on water supplied pursuant to this Judgment, which need not exceed an annual supply of 500 AF. County need not recognize a "can and will serve letter" for Augmented Service before the conditions specified in Section 23(b) have been met or the Trigger Date, whichever occurs first. Such water supply shall be considered "firm", "adequate" and "available" only if:

(i) Any new water supply project by which Water District proposes to provide Augmented Service is designed, approved, funded, and scheduled for timely implementation; and

(ii) New or augmented water service or well use would not contribute to increased groundwater overdraft.

Prior to voter approval of a permanent, long-term supply, designed to achieve long-term Hydrologic Balance, the County may refuse to honor a can and will serve letter on the grounds of non-compliance with this subsection [31(a)(4)], but any party may request the court to exercise its continuing jurisdiction to review the County's decision, provided, the Water District shall indemnify and defend the County from liability for damages due to lack of water for a project which the County has disapproved on the grounds of non-compliance with this subsection.

(b) Upon entry of Judgment, a Private Overlying Owner may present an application for approval of development to be supplied with water pursuant to this Judgment and the County will process the Application. However, in no event shall the Private Overlying Owner be entitled to receive land use clearance based on Augmented Service before the conditions specified in Section 23(b) have been met or the Trigger Date, whichever occurs first.

(1) Nothing in this subsection shall alter or diminish the effect of California Law, particularly Government Code Section 66474.2 and Section 65961, with respect to General Plan and zoning requirements in effect at the time of completeness of applications for residential subdivisions; and

(2) The Parties agree and the Court finds that the County retains discretion, pursuant to its reserved police powers as recognized in Section 26 of this Judgment, to make land use clearance and ensuing final approval of a project contingent on provision of available water supply including a can and will serve letter from the Water District pursuant to this Judgment, and to impose conditions of approval on development, including requirements that mitigation be performed and plan consistency be evaluated under the standards and circumstances in effect at the time of land use clearance or final approval.

32. Damages for Temporary Non-Compliance

(a) If the Water District denies the request of any Private Overlying Owner for Augmented or Exchange Service on or after the Trigger Date or if the County refuses to recognize the Water District's "can and will serve letter" by reason of the Water District's noncompliance with the Water Plan, each such Private Overlying Owner shall be entitled to annual payments from the Water District equal to the annual lost rental value of the Private Overlying Owner's property. In such case, the Water District shall also provide monetary restitution for all administrative processing costs and related expenses incurred as a result of the Water District's denial of Augmented Service or the County's failure to recognize a "can and will serve letter".

(b) Each Private Overlying Owner denied water service shall submit a claim for lost rental value to the Water

District. Within thirty (30) days of its receipt of the Private Overlying Owner's claim, the Water District shall either approve the claim in full or provide written notice of its decision to deny the claim and the basis for denial. Within thirty (30) days thereafter, the Water District, at its own expense shall cause a qualified appraisal of the fair market rental value of the Private Overlying Owner's property and shall provide an offer of compromise accompanied by a copy of the appraisal to the Private Overlying Owner. If the Private Overlying Owner rejects the Water District's offer of compromise, the Private Overlying Owner may immediately file a request with the court for a court determination of the lost rental value of the property. The matter shall be heard within thirty days as a Law and Motion Matter and the prevailing party shall be entitled to costs and attorney's fees incurred in the court proceeding.

(c) The lost rental value is the amount of money necessary to compensate the Private Overlying Owners for the loss of use of their prior and paramount water rights and overlying land. The lost rental value determination shall be based upon the land's highest and best use and shall be determined by evaluating comparable Southern California land leases or ground rentals of like properties where full water service is available, provided that in no instance shall the fair rental value of the property be less than necessary to provide the Private Overlying Owner with a fair rate of

return on property, not less than the average rate of earnings by the Public Employees Retirement Fund on its investment from 1973 to the date of the calculation. It shall not be a legitimate objection to the award of lost rental value that the determination is based upon hypothetical or speculative evidence. But the parties may argue the weight of such evidence.

(d) Payment of the lost rental value shall begin immediately upon the District's acceptance of the Private Overlying Owner's claim, the Private Overlying Owner's acceptance of the Water District's offer of compromise, or court order, whichever occurs first. Payments shall be calculated as of the date of denial and shall be pro rated until service is provided by the Water District or the County recognizes the "can and will serve letter".

(e) Except as provided below, the Private Overlying Owner's right to receive the lost rental value payments under this provision may not be delayed, altered or diminished in any way by natural conditions, emergency or otherwise, subsequent action or inaction of the Water District, irrespective of whether its failure to provide water service is a result of the provisions of the California Environmental Quality Act, Water District regulations, voter initiatives, discretionary approvals or other administrative action of any kind.

(f) The Water District is charged with a continuing obligation to provide payment to the Private Overlying Owner

for lost rental value arising from each and every Water District failure to provide Augmented Service pursuant to the provisions of this Judgment or the County's failure to recognize a Water District "can and will serve letter". This obligation arises and continues irrespective of any argument by the Water District that even if Augmented Service were provided the governmental agencies would have ultimately denied the Private Overlying Owner permission to develop.

(g) If, in any subsequent year, either party believes that the lost profit determination is inaccurate due to changed circumstances, the party making the assertion of changed circumstances shall bear the burden of proof.

(h) Damages paid to Overlying Owners shall not be diminished by any downzoning or general plan changes which may occur after June 1, 1989.

33. **Damages for Permanent Noncompliance**

(a) If the Water District is unable to provide Exchange Service (not including Managed Service) or Augmented Service on or before December 31, 1998, the Private Overlying Owner shall have the right to require the Water District to pay just compensation to the Private Overlying Owner in an amount equal to the fair market value of the overlying land measured on the basis of its highest and best use. The payment made under this provision shall not be discounted, offset or credited against the annual lost rental value payments made as a result of the Water

District's failure to provide water service in any preceding year or portion thereof.

(b) The evaluation of fair market value shall be made as if the property possessed the requisite water rights to provide for any reasonable use of the property. The highest and best use of the property shall be determined on the basis that the property possesses the requisite water rights to provide for its highest and best use. If the Private Overlying Owner rejects the Water District's offer of just compensation, the Private Overlying Owner shall have a right to request a trial to determine the amount of compensation due under this provision and to be awarded reasonable attorney, appraisal, and engineering fees in accordance with Code of Civil Procedure Section 1036. Except as provided above, proceedings under this provision shall be governed by the rules of condemnation generally.

(c) If the Water District and Private Overlying Owner mutually agree, they may extend the Water District's obligation to provide just compensation for the Private Overlying Owner's property for a period of months, years or any other period both parties may agree upon.

(d) If there is a permanent taking, Water District shall obtain title to the property if it condemns the entire property. Water District shall not obtain title to the property if the condemnation is of the water only (i.e., fair market value of land without water compared to fair market value of land with water).

(e) Damages paid to Overlying Owners shall not be diminished by any downzoning or general plan change which may occur after June 1, 1989.

34. Collection

All money payments due under this Judgment shall be enforced as are all other civil judgments generally. The Water District shall modify water rates or impose taxes to meet its financial obligation under this Judgment.

35. Inability of the Water District to Pay Damages

If the court finds at any time, that despite the Overlying Owners rights to enforce this Judgment, the Court's legal and equitable power to ensure compliance, and the Water District's obligations to modify rates and/or impose taxes to meet its financial obligations, it is impossible for the Water District to comply with its financial damage obligations herein, the Overlying Owners shall as a Law and Motion Matter be entitled to have returned to them their water rights transferred to the Water District pursuant to this Judgment and shall be entitled to an immediate injunction against the Water District from interfering in any way with the correlative overlying rights of the Private Overlying Owners as set forth in Wright v. Goleta Water District (1985) 174 Cal.App.3d 74. In such an event, the Water District may not use assignments of water rights from its customers or other overlying owners for any purpose adverse to the rights of Participating Party Overlying Owners and/or La Cumbre.

36. Environmental Review of Water Plan

If any future action by any public agency pursuant to this Judgment has a potentially significant environmental impact, proceedings will be conducted pursuant to the California Environmental Quality Act (CEQA). The Water District shall prepare a program environmental impact report for the Water Plan and the projects described in the Water Plan. Any party may request the court to exercise its continuing jurisdiction with respect to this environmental review.

37. Judge Assigned

The Presiding Judge shall from time to time assign a judge to carry out all duties, responsibilities and provisions of the Judgment. In its discretion, the court may from time to time appoint assistants or experts on the terms set forth in Evidence Code Sections 730 et seq.

38. Continuing Jurisdiction

(a) The court expressly reserves jurisdiction over this Judgment now and into the indefinite future in order to:

(i) adjudicate any further dispute between these parties or others properly before the Court concerning their rights and obligations arising out of and to the Judgment; and

(ii) issue such orders as are necessary and proper to enforce this Judgment, including without limitation,

orders to ensure that the Basin is brought into Hydrologic Balance and the overdraft eliminated.

(b) If a Private Overlying Owner's project is not allowed for reasons other than water use and availability and if the Overlying Owner believes that the rejection of the proposal, whether in whole or in part, gives rise to legal action against any or all of the involved governmental agencies, the legal action shall not be governed by the provisions of this Judgment.

39. Inurement

This Judgment touches and concerns the land and the benefits and burdens shall run with the land binding each and every assign, successor in interest or other person or entity having a beneficial interest in the lands covered by this Judgment and to any person or agency succeeding to the property interests of any Party and the governmental, land use and regulatory interests of the Water District, La Cumbre, the School Districts, the County, the City, and Southern California Gas Company.

40. Recordation

This Judgment shall be recorded.

41. Notices

As set forth in Section 2, the parties hereto have designated the person to whom all notices should be sent.

Each party who has not heretofore made such a designation shall, within thirty (30) days after this Judgment is served, file with the Court with Proof of

Service of a copy upon the Water District, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports or other papers and processes to be served upon that party or delivered to that party are to be so served or delivered.

A later substitute designation filed and served in the same manner by any party shall be effective from the date of filing as to the then future notices, determinations, requests, demands, objections, reports and other papers or processes to be served upon or delivered to that party.

Delivery to or service upon any party by the Water District, by any other party or by the Court, of any item required to be served or delivered pursuant to the Judgment may be by deposit in the mail, first class, postage prepaid, addressed to the designee and at the address in the latest designation filed with the Court and served on the Water District. The Water District shall maintain the list of designees.

COSTS AND FEES

42. **Attorney's Fees and Costs**

(a) Commencing forty-five (45) days from the date of the Judgment, Water District shall pay attorney's fees and costs as follows:

(1) The sum of $562,308.42, payable to Hatch & Parent in trust for their clients;

(2) The sum of $71,470.00, payable to Mullen, McCaughey & Henzell in trust for their clients;

(3) The sum of $121,173.21, payable to La Cumbre;

(4) The sum of $40,589.03, payable to City;

(5) The sum of $87,750.00, payable to County of Santa Barbara;

(6) The sum of $80,091.12, payable to Goleta Union School District and Santa Barbara High School District;

(7) The sum of $63,214.46, payable to Southern California Gas Company, the successor in interest to Pacific Lighting Service Company and Pacific Lighting Gas Supply Company;

(8) The sum of $44,027.00, payable to Hollister & Brace in trust for their client;

(9) The sum of $20,000.00 to the Environmental Defense Center in trust for its client Citizens for Goleta Valley.

(b) Payments made hereunder are separate from and in addition to any other payments required under the Judgment. No additional attorney's fees or costs shall be paid by Water District to the parties except under Section 43 of this Judgment.

(c) Interest shall be paid commencing July 1, 1989 at the rate of 7% per annum until paid.

43. Additional Attorney's Fees

If any dispute arises from the provisions of this Judgment or from any orders issued subsequent thereto, the prevailing party shall be entitled to recovery of attorney's fees and costs. If a public agency is a prevailing party under this paragraph, the amount of fees awarded to the public agency party shall be calculated as if the public agency engaged private counsel.

44. Waiver of Appeal

All parties have waived their right to appeal.

DATED: NOV 17 1989

ZEL CANTER
Judge of the Superior Court

Goleta Water District Water Supply Management Plan

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Goleta Water District

Water Supply Management Plan

Steven Bachman, PhD

April, 2011

Acknowledgements

Goleta Water District

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4 Executive Summary

Key Findings

This Plan formulates a water supply strategy for Goleta Water District (GWD) by prioritizing use of GWD's various sources of supply, evaluating the reliability GWD's water supplies, and developing drought scenarios for current and future demand. The work determined that GWD's supplies exceed current demand under average conditions and are equal to demand when averaged over a complete multi-year drought period. However, in the driest single year of a drought there would be about a 7% shortfall in supply at today's demand level.

At projected 2030 demand, with the State-mandated conservation reduction in place and the 850 acre-feet per year of authorized future demand factored in, there would be sufficient water to meet demand during average conditions. In multi-year drought conditions at the projected 2030 demand levels, supply would be about 2,600 acre-feet per year short of demand, with the driest year having a somewhat larger shortfall. When a more-extensive drought was synthesized by extending the length of the last drought (1986-1991) by two years (with current infrastructure capacities), there would be a maximum shortfall of 26% (3,600 acre-feet) at current levels of demand and a maximum shortfall of 40% (6,500 acre-feet) at projected 2030 demand levels[1].

Methodology

A combination of the Santa Ynez River Model for Cachuma deliveries and the California Department of Water Resources (DWR) reliability studies for State Water deliveries were used in developing the Water Supply Management Plan (WSMP). The existing models use historic hydrologic data for the Santa Ynez watershed and State Project system and superimpose the various water resource facilities and policies on this hydrology. The WSMP model uses monthly time steps from 1922 through 2007. The model period includes both the last drought period and two severe droughts in the 1920s and 1950s. In addition, the WSMP model synthesizes a more-severe drought where the dry years of the late 1980s and early 1990s are extended by two years. Thus, the water supply plan formulated using the model is fairly protective for future drought periods.

Operating Plan

The WSMP recommends an operating plan for prioritizing the use of GWD's water supplies. The primary recommendation is during periods when Cachuma deliveries are reduced because of local drought conditions. In this situation, groundwater wells should be pumped at capacity and shared in priority with Cachuma water sources. In this manner, some of the Cachuma water is saved for the drier part of the year when demand is the highest and more groundwater can be pumped throughout the year (if groundwater is only pumped during the driest part of the year, well capacities significantly limit the amount of groundwater that can be supplied).

[1] As the San Ricardo well is rehabilitated, its additional capacity of 2 AF per day will partially mitigate these supply shortfalls.

Water Supply and Demand Conclusions

The WSMP modeling has led to the following conclusions:

Current Conditions	Average Conditions (AFY)	Drought Conditions (AFY)
Current Demand	**14,600**	**14,600**
Supply Sources		
Cachuma Potable & GWC	9,322	7,672
State Water	3,800	3,052
Groundwater	2,350	2,710
Recycled Water	1,000	1,000
Total Supply	**16,472**	**14,434**
Total Surplus (Deficit)	***1,872***	***(166)***

Table 4-1. Water supply during average and drought conditions at current levels of demand. The SAFE Ordinance requires that State Water deliveries of 3,800 acre-feet per year be used for planning purposes –it is a conservative assumption because GWD's full pipeline capacity of 4,500 acre-feet per year can be delivered most of the time. The 2,350 acre-feet per year of groundwater is GWD's portion of the yield of the groundwater basin.

2030 Forecast	Average Conditions (AFY)	Drought Conditions (AFY)
A. Base Forecasted Demand 2030	15,833	15,833
B. Authorized Future Demand	850	850
Total Demand 2030 (A+B)	**16,683**	**16,683**
Supply Sources		
Cachuma Potable & GWC	9,322	7,783
State Water	3,800	2,488
Groundwater	2,350	2,852
Recycled Water[2]	1,000	1,000
Total Supply	**16,472**	**14,123**
Total Surplus (Deficit)	***(211)***	***(2,560)***

Table 4-2. Forecast supplies and demand in 2030 under average and drought conditions. Average supplies are those available under existing water rights and allocations; the exception is State Water, where the SAFE Ordinance requires that 3,800 acre-feet per year be used for planning purposes – it is a conservative assumption because GWD's full pipeline capacity of 4,500 acre-feet per year can be delivered most of the time. Drought supplies are calculated from the WSMP Model, based on the average of the worse five consecutive years of drought.

[2] Recycled water supply is kept constant in the calculations. However, there is an additional 2,000 acre-feet per year of unused recycled capacity if additional customers are identified and additional pipelines are constructed.

5 Introduction

Goleta Water District ("GWD") has multiple sources of water supply for delivery to customers. These sources include Cachuma Reservoir, groundwater, State Water, and recycled water. Each of the sources has its own pattern of availability during wet and dry climatic cycles. The combination of the water sources provides more delivery reliability than each source alone. To optimize GWD's overall water delivery reliability at the least cost to customers, the interplay of these water sources must be understood over a range of climatic conditions.

As the first step in determining the optimum use of GWD's sources of water supply, a Groundwater Management Plan was formulated and adopted by the Board of Directors (Board) in 2010 (GWD, 2010). The Groundwater Plan provides guidance on how to operate the basin while meeting the requirements of the Wright Judgment and the SAFE Ordinance.

This Water Supply Management Plan ("WSMP") builds on the Groundwater Management Plan by adding the other sources of supply in GWD's water portfolio to the overall supply mix. This WSMP adds the results of modeling of Cachuma and State Water reliability over multiple wet and dry cycles to determine optimum use of the differing sources of supply and the supply reliability that results from this optimization.

5.1 Background

During the drought of the late 1980s and early 1990s, water supplies for the south coast of Santa Barbara County reached a critically low level. An emergency seawater desalination plant was constructed just prior to the end of the drought, and voters subsequently passed a bond issue to build the Coastal Aqueduct of the State Water Project to bring additional supplies into the area. These new supplies were aimed at drought-proofing the area into the future.

The customers of Goleta Water District reduced their water consumption significantly during this drought. Groundwater played an important supply role for GWD during the drought, with increased groundwater pumping resulting in groundwater elevations reaching historical low levels. This lowering of groundwater elevations was exacerbated by the fact that pumping prior to the drought had already lowered the elevations substantially. As a result of the low groundwater elevations, the customers of GWD voted to restrict GWD use of groundwater to drought periods or periods when groundwater elevations were high in the basin (see GWD, 2010, for further discussion of the SAFE Ordinance).

The current challenge for GWD is to ensure that use of its various sources of water supply is optimized to enhance reliability at the lowest cost, both now and in the future. This WSMP addresses that challenge.

5.2 Purpose and Goals of Plan

The purpose of the WSMP is to determine the most effective use of GWD's various sources of water supply, both in terms of reliability and cost. An additional purpose is to determine the best use of the water sources to satisfy potential increases in demand in the future.

There were several goals for this study:

1. Optimize GWD's use of its various sources of supply to balance cost and reliability;
2. Determine the critical components of GWD's supply system;
3. Develop a plan to have sufficient supplies during drought periods more severe than the drought of 1986 to 1991;
4. Determine the reliability of GWD's water supply under current water supply demand and potential future increases in demand.

The WSMP is meant to be used by GWD to:

1. Have a "road map" for the priority of using its various sources of water supply under different climatic and groundwater conditions.
2. Determine if additional facilities need to be constructed to optimize use of its sources of water, and what current or future conditions would trigger the need for these facilities.
3. Assist in determining the amount of future demand that can be accommodated by the existing water sources.
4. Determine the reliability of its water sources in a drought and how much conservation may be needed to avoid drought-related shortfalls in supply.
5. Provide input to other planning tools such as the Urban Water Management Plan.

5.3 Methods Used

This study used both the Santa Ynez River Model (for Cachuma supplies) and the State Water reliability modeling of the California Department of Water Resources ("DWR") as the basis for determining the availability of these water supplies over a 86-year time period. To mesh the results of this modeling, the period 1922 to 2007 was used in this Plan. In both models, current and future water resource facilities and policies were superimposed on the historical hydrology of the Santa Ynez River and the rivers within the State Water Project. The results of these models were then incorporated into a monthly spreadsheet model for the 86-year period that simulated GWD's operations. The spreadsheet model contains facility capacity limitations, SAFE and Wright operating rules, current and future water production demand, and the Central Coast Water Authority's ("CCWA") State Water storage project in San Luis Reservoir.

The spreadsheet model was used to experiment with priorities of water supply options, expansion of injection/extraction capabilities, and drought responses. The model evaluated the reliability and costs of these options.

5.3.1 Santa Ynez River Model

The Santa Ynez River Model ("River Model") was developed by the Santa Barbara County Water Agency over the past two decades or more to simulate flow rates along the river and dozens of tributaries, as well as capture and spilling of water from the three reservoirs along the river. The numerical model has been used for reservoir studies, to determine water rights issues,

to plan conservation releases, and to assist in issues related to fish flows. A new daily time-step numerical model is currently being constructed, but was not yet ready for use in this Plan.

The River Model runs over the 76 water-year period from October 1917 through September 1993 in monthly time steps. Measured and estimated historic stream flows, rainfall, evaporation, and tunnel infiltration values provide the data base for a set of algorithms that simulate reservoir and river-course conditions. Changes in one portion of the model (such as increasing annual deliveries from a reservoir) result in changes throughout the model. Output from the model includes graphs of reservoir storage and flow rates through time, with monthly data for a variety of parameters downloadable into Excel spreadsheets for analysis.

The 76-year period of the River Model represents several wet and dry periods. All of the droughts of the 20th century are included in the modeling period except the 1901 through 1904 portion of a dry period which began in the mid 1890s. The modeling period begins and ends with years during which the Santa Ynez River surface water reservoirs are filled to capacity and the riparian alluvial deposits are in a generally wet and re-charged state.

Figure 5-1 indicates actual Santa Barbara-area hydrology during this period.

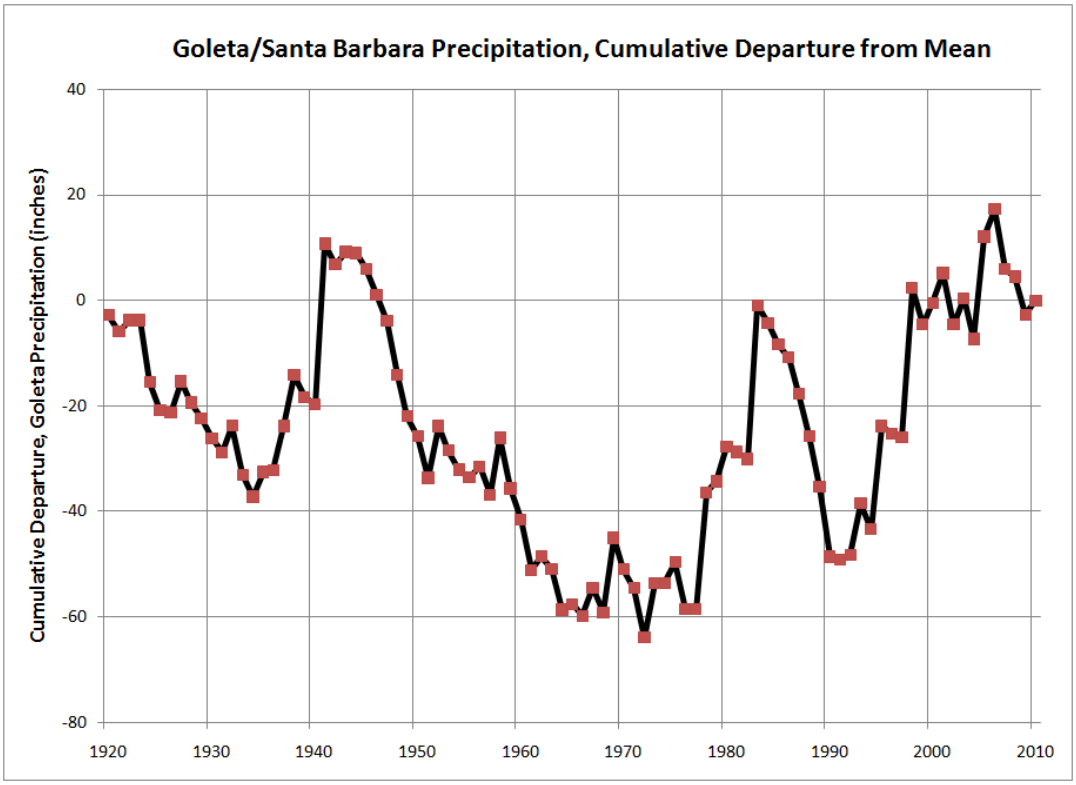

Figure 5-1. Cumulative departure of rainfall (Goleta Fire Station, extended by correlation with Santa Barbara data) that includes the 1922 to 2007 period of WSMP. Wet periods are indicated by rising values, whereas dry periods are indicated by falling values.

The Santa Ynez River Model was set up to represent Cachuma operations with downstream releases for fish, and a fixed 20% drought period delivery cutback. The River Model superimposes current or future water demand on the hydrology of the 76 years of Santa Ynez River hydrology as if current facilities and policies were in place during the entire period. This

allows a simulation of the most recent 1986 to 1992 drought, as well as longer droughts during the model period.

The new daily-time step Santa Ynez River model will likely change some of the results from the original model. However, results are not yet available to make this comparison.

To correspond to the model period of GWD's Groundwater Model (1970-2007), this Water Supply Management Plan extended the hydrology of the Santa Ynez River through the year 2007 by using actual data for that extension period.

5.3.2 State Water Projections

The amount of State Water available for GWD use in any year was based on California Department of Water Resources (DWR) simulations using northern California hydrology covering roughly the same period as the Santa Ynez River model. The availability simulations are currently being updated every two years. The most recent simulations (Figure 5-2; DWR, 2009) predict the ability of the Project to have delivered water over the historical hydrologic period given current and future facilities, policies, and environmental requirements (similar to the way the Santa Ynez River Model works). The reason that these simulations have to be updated so frequently is that judicial/environmental restrictions on the State Water Project continue to be changed almost annually. The latest simulations predict that between 60% and 70% of Table A water can be delivered about half (50%) of the time (Figure 5-2). The average Table A deliveries over the length of the State Water model period is 60% (DWR, 2009).

Future State Water availability was also evaluated by DWR for the year 2029. A wide range of future policies, facilities, climate change, and environmental requirements were evaluated, resulting in a range of availability results. This Plan used DWR's preferred simulation. The results of the latest simulations are that State Water availability is increased somewhat during dry years (left side of Figure 5-3) and markedly decreased in wet years (right side of Figure 5-3). The 2029 simulations predict that between 60% and 70% of Table A water can be delivered about half (50%) of the time. The average Table A deliveries over the length of the State Water model period is 60% (DWR, 2009).

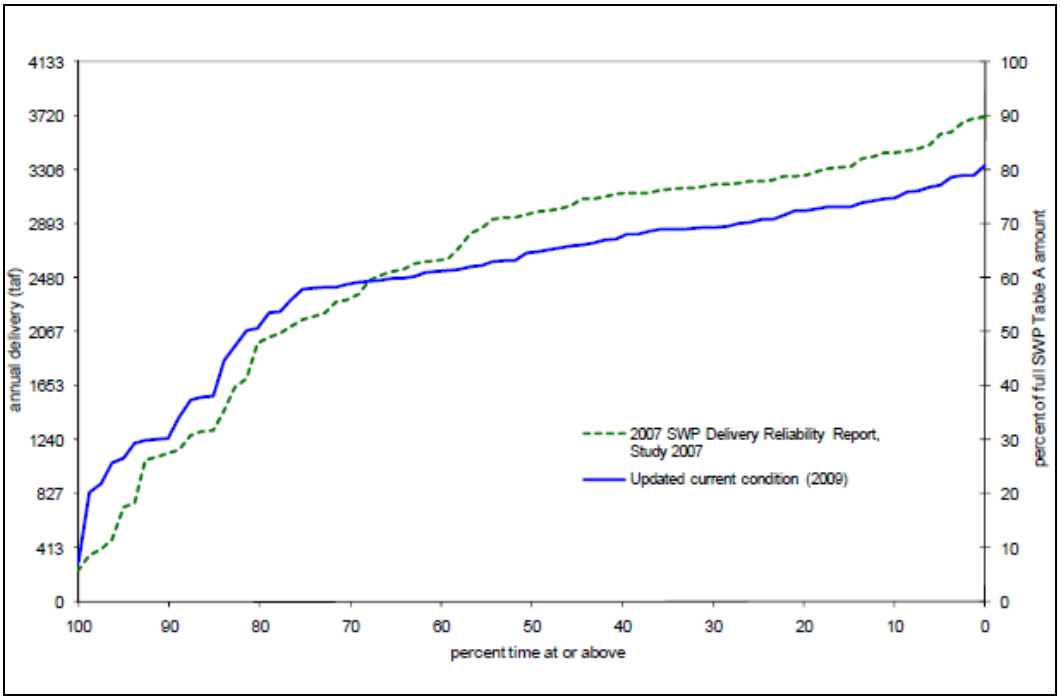

Figure 5-2. Results of simulation of State Water availability system-wide under current conditions (solid blue line) (DWR, 2009). Dry years are represented on the left side of the chart and wet years on the right side. To read the chart, choose the percent of annual Table A delivery on the right scale, move over horizontally to intersect the blue line, and read the probability of delivering that amount of water on the bottom scale. For instance, the probability of delivering 50% of Table A water in any year is about 80%. Potential deliveries were increased during dry years and decreased in wet years compared to previous estimates in 2007.

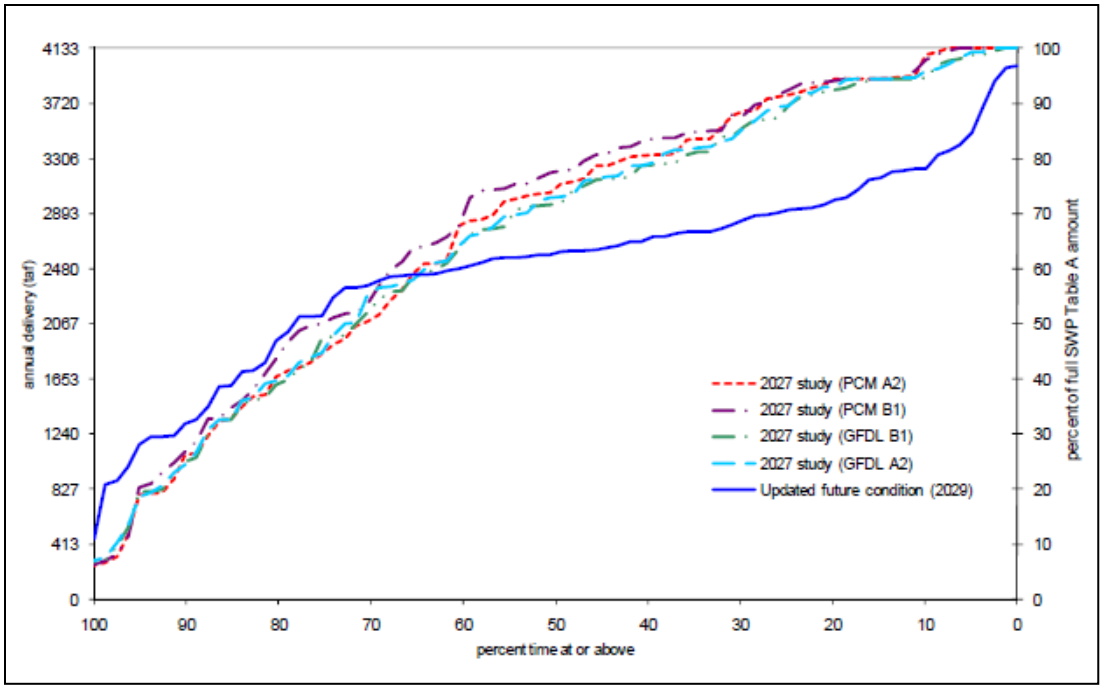

Figure 5-3. Results of simulation of State Water system-wide availability in 2029 (solid blue line) (DWR, 2009). Dry years are represented on the left side of the chart and wet years on the right side. To read the chart, choose the percent of annual Table A delivery on the right scale, move over horizontally to intersect the blue line, and read the probability of delivering that amount of water on the bottom scale. For instance, the probability of delivering 50% of Table A water in any year is a little less than 80%. Potential deliveries were increased during dry years and significantly decreased in wet years compared to previous estimates in 2007.

5.3.3 Water Supply Management Plan Model

A spreadsheet model was constructed to evaluate the reliability and costs of different priorities of use for GWD's sources of water supply. The model uses monthly time steps from 1922 through 2007. The period coincides with the period of modeling for the State Water Project (see previous section). The original scope was to end modeling after year 1993 (the end of the historical Santa Ynez River Model). However, GWD's Groundwater Model uses the period 1970 to 2007 and cross-correlation between the Groundwater Model and the WSMP model was necessary to predict changing groundwater elevations in the Goleta Groundwater basin under different supply management scenarios. Actual operational information from Cachuma Reservoir was used to fill in the 1994 to 2007 gap in the Santa Ynez River Model.

The WSMP thus uses the most-current prediction of supply availability over the hydrologic period 1922 through 2007. This long period of analysis allows the interaction of differing climate trends in northern and southern California, where drought and wet periods do not always coincide. It is important to note that the model functions by taking one set of operational criteria and customer demands over the entire hydrologic period – the model does not sequentially increase demand as if it was a time series through the next 86 years. To determine the results for future demand, a new model run must be performed with the new demand applied over the 86-year period. To predict the availability of supplies and the groundwater elevations in a drought

(as required in an Urban Water Management Plan), a drought period can be selected during the 86-year period. The model also uses some scenarios where a more-intense drought than those during the 1922-2007 period is synthesized. These scenarios assume that the 1986-1991 drought extended two additional years, with significant reductions of Cachuma deliveries as the reservoir is drawn down further than actually occurred in the historical drought.

Monthly demand for GWD's water supplies was calculated in the model based on historical demands during wet, average, and dry climatic conditions. 2030 demand was estimated based on planning estimates (see Sections 13.1 and 14.2). The assumptions used in the model for water supply amounts, capacities, and costs are listed in Chapter 14.

The WSMP spreadsheet model takes into account both the Wright Judgment and the SAFE Ordinance in its calculations (see description of these in GWD's Groundwater Management Plan – GWD, 2010). Because the SAFE Ordinance requirements are based in part on groundwater elevations in the Goleta Groundwater basin, the WSMP predicts groundwater elevations each year depending upon the amount of pumping/injection that have occurred in the basin. The interaction of the Groundwater Model and the WSMP model is described in detail in Chapter 14. The set of equations generated from the Groundwater Model output are included within the WSMP.

5.3.4 Management Strategies Tested

To test the reliability and cost of each of GWD's sources of water under different priority-of-use and capacity scenarios, a number of model runs were performed. These scenarios are listed below and summarized in Table 5-1. Detailed descriptions of the input for each scenario and the results of each scenario are included in Chapter 14. In all cases, Cachuma water is used first because the reservoir spills on average every three years and any unused water is lost. The three classifications of Cachuma water are always prioritized in the following order: 1) spill water (the quantity of spill water usually far exceeds water supply and environmental demands); 2) carry-over water (unused entitlement from previous years which are lost when the reservoir spills); and 3) annual Cachuma entitlement. The amount of spill water that can be used by customers and for groundwater storage through injection is limited by customer demand and treatment/injection capacity. An increase in treatment/injection capacity in the future is one of the strategies tested.

State Water and groundwater are used in differing priorities in the differing scenarios, all within the rules of the SAFE Ordinance and the Wright Judgment. There is a trade-off between the two sources of water – State Water is the most expensive supply source for the District, allows maximum groundwater storage for drought protection, whereas use of more groundwater is more cost-effective, but results in less stored water available for a drought.

A hybrid of water use priorities that optimized uses was also analyzed. GWD's groundwater pumping capacity was also varied in the scenarios from current capacity to increased capacities for current and future demands.

Scenarios for current demand levels also test the efficacy of CCWA's storage program in San Luis Reservoir for unused State Water allocation. This stored water is always used first before GWD's regular Table A allocation because it is possible to lose this storage during a spill.

The scenarios used in the modeling are listed below, with a matrix of the elements in each scenario indicated in Table 5-1.

Current Demand – Current Pumping/Injection Capacity

Groundwater Used Last

Scenario #1: With CCWA Storage Program: Current demand, current pumping and injection capacity, CCWA storage program in place, State Water used preferentially before groundwater (groundwater only used when demand cannot be met by Cachuma and State Water – within SAFE operating rules).

Scenario #1a: Without CCWA Storage Program: Same as Scenario #1, but without CCWA storage program.

State Water Used Last

Scenario #1b: With CCWA Storage Program: Current demand, current pumping and injection capacity, CCWA storage program in place, groundwater used preferentially before State Water (State Water only used when demand cannot be met by Cachuma and groundwater – within SAFE operating rules).

Scenario #1c: Without CCWA Storage Program: Same as Scenario #1b, but without CCWA storage program.

Hybrid Priorities

Scenario #1d: With CCWA Storage Program: Current demand, current pumping and injection capacity, CCWA storage program in place, use of Cachuma, State Water, and groundwater are optimized to lessen the impact of infrastructure capacities (this strategy is discussed in section 12.2.2).

Extended Drought

Scenario #1b-drght: Scenario #1b with drought of 1986-1991 extended by two years with Cachuma deliveries reduced to as low as 20% of allocation.

Scenario #1d-drght: Scenario #1d with drought of 1986-1991 extended by two years with Cachuma deliveries reduced to as low as 20% of allocation.

Current Demand – Increased Pumping Capacity

Groundwater Used Last

Scenario #2: With CCWA Storage Program: Current demand, CCWA storage program in place, State Water used preferentially before groundwater (groundwater only used when demand cannot be met by Cachuma and State Water – within SAFE operating rules), but with pumping capacity increased by varying amounts as discussed in Section 12.2.1.

State Water Used Last

Scenario #2a: With CCWA Storage Program: Current demand, CCWA storage program in place, groundwater used preferentially before State Water (State Water only used when demand cannot be met by Cachuma and groundwater – within SAFE operating rules), but with pumping capacity increased by varying amounts as discussed in Section 12.2.1.

Hybrid Priorities

Scenario #2b: With CCWA Storage Program: Current demand, CCWA storage program in place, use of Cachuma, State Water, and groundwater are optimized to lessen the impact of infrastructure capacities (this strategy is discussed in section 12.2.2), but with pumping capacity increased by varying amounts as discussed in Section 12.2.1.

Extended Drought

Scenario #2c: Scenario #2b with drought of 1986-1991 extended by two years with Cachuma deliveries reduced to as low as 20% of allocation.

2030 Demand

Hybrid Priorities

Scenario #3: With increased pumping capacity: Increased demand as discussed in Section 13.1, CCWA storage program in place, use of Cachuma, State Water, and groundwater are optimized to lessen the impact of infrastructure capacities (this strategy is discussed in section 12.2.2), but with pumping capacity increased as discussed in Section 13.5.

Scenario #3a: With current pumping capacity: Increased demand as discussed in Section 13.1, CCWA storage program in place, use of Cachuma, State Water, and groundwater are optimized to lessen the impact of infrastructure capacities (this strategy is discussed in section 12.2.2).

Extended Drought

Scenario #4: Scenario #3 with drought of 1986-1991 extended by two years with Cachuma deliveries reduced to as low as 20% of allocation.

Scenario	Demand: Current	Demand: 2030	GW Last	SWP Last	GW/SWP Hybrid	CCWA Bank	Pump & Inject Capac: Current	Pump & Inject Capac: Increase	Extended Drought
#1	√		√			√	√		
#1a	√		√				√		
#1b	√			√		√	√		
#1c	√			√			√		
#1b-drght	√			√		√	√		√
#1d	√				√	√	√		
#2	√		√			√		√	
#2a	√			√		√		√	
#2b	√				√	√		√	
#2c	√				√	√		√	√
#3		√			√	√		√	
#3a		√			√	√	√		
#4		√			√	√		√	√

Table 5-1. Matrix of Water Supply Management Plan model scenarios.

The results of the WSMP modeling are discussed in the following chapters.

6 Integration with Other GWD Plans

This WSMP is meant to interact with the other major planning tools that GWD uses for operations, operating and capital expenditures, and water rates. These interactions are discussed for each of the major planning and budgeting tools.

Groundwater Management Plan – The Groundwater Management Plan (GWD, 2010) explained and adopted the general rules by which the groundwater basin can be operated. This included how to calculate the 1972 groundwater elevation that is critical for determining when groundwater can be pumped in the WSMP, the calculations for determining the amount of Annual Storage Contribution required, and tracking the storage in the basin. There was also a discussion of the best areas to site new wells that may be part of GWD's expanded water supply for potential increased water demand in the future. The WSMP identified the possibility that the SAFE Ordinance may inadvertently cause a shortage of supply in some circumstance at higher levels of demand; a remedy to this would likely be considered in future updates to the Groundwater Management Plan.

Water Supply Management Plan Implementation Guidelines – These Guidelines will be prepared following the adoption of the WSMP. Results of the modeling will be used to determine the use of GWD's various sources of supply in any given year in response to supply, demand, and other factors. These Guidelines would be updated every five years or when certain triggers are met. Such triggers could include changes in operating or release criteria for Cachuma, changes in reliability of the State Water Project, emergencies that restrict import of water, groundwater elevations that drop faster than modeled when groundwater is extracted, and the like.

Urban Water Management Plan (UWMP) – It is a requirement that Urban Water Management Plans be revised every five years; GWD must revise its UWMP by mid-year 2011. The WSMP modeling of water reliability and drought scenarios can be used directly in the analyses of water supply required by the UWMP. Prior to the preparation of each UWMP, it may be prudent to update the WSMP modeling.

Water Supply Assessments – These assessments may be required for future development projects within GWD. The results of WSMP modeling of the water availability with increased demand will likely be one of the key analyses used in such assessments.

Rate Analyses – When rates are analyzed, the key calculation are usually how much water supplies cost, how they will increase, how should these costs be apportioned, and how should rate structures be used to encourage conservation. The WSMP calculates incremental costs of supply, what the source of supply would be with increased demand, how supply shortages may occur in the future, and the extent of such supply shortages. If projected increases in demand occur, the WSMP modeling should be updated regularly to provide feedback for periodic rate analyses.

GWD's Operating and Capital Budget – The WSMP identifies capital and operating costs for both current water demand and incremental future demand. In particular, the WSMP

links increased demand to increased capital facilities such as new wells. These analyses can be used by GWD to plan for future capital costs associated with changing water demand.

7 Findings and Conclusions

WSMP modeling used the results from the Santa Ynez River Model, results from a similar model for northern California that predicts State Water availability, and operating requirements for the Goleta Groundwater basin for an 86-year period from 1922 through 2007 to a examine GWD's various sources of water supply. Even though these models are very sophisticated, actual results may vary from model predictions. As with any planning exercise, models used in the WSMP are intended to inform the decision-making process using the best available information and analytical techniques. Accordingly, this work led to the following principal findings and conclusions:

1. Allocations for Cachuma Reservoir, State Water, and groundwater supplies could yield almost 16,500 acre-feet per year (with current pumping and treatment facilities) under average hydrologic conditions, compared to a current demand for water of about 14,600 acre-feet per year.
2. During drought periods such as 1986 to 1991, these sources could supply about 14,500 acre-feet per year of supply (with current pumping and treatment facilities), about the same as current water use. However, in the driest year of a drought, there would be a supply shortfall of about 7%, given current demands.
3. At projected demand levels of about 16,700 acre-feet per year in the year 2030 and at current pumping and treatment capacities, existing GWD water supplies of 16,500 acre-feet per year are about equal to demand under average conditions. The availability of State Water, which is set by SAFE at 3,800 acre-feet per year for planning purposes, is considered as of this writing to be relatively conservative, meaning that there could be more water available than planned.
4. At 2030 projected demand levels of 16,700 acre-feet per year and at current pumping and treatment capacities, drought supplies of about 14,100 acre-feet per year would be significantly short of demand. In the driest year of a drought, there would be about a 22% shortfall in supply.
5. If there is a drought in the future that exceeds any in the past 86 years, water supplies will be reduced. When the drought of the late 1980s and early 1990s is extended by two years, there would be a maximum shortfall of 26% at current levels of demand and a maximum shortfall of 40% at projected 2030 demand levels (at current pumping and treatment capacities).
6. Increasing groundwater pumping capacity can partially offset the drought shortfalls. At current levels of demand, additional pumping capacity only slightly increases reliability; at higher levels of demand, increased pumping capacity becomes more important in ensuring supply reliability.
7. GWD's only new sources of water supply available in the future are recycled water and water saved through conservation. There is currently 2,000 acre-feet per year of unused additional recycled water production capacity, but there is presently limited

distribution capacity and known demand. As GWD customers implement the additional conservation mandated by the State by 2020, the opportunity for additional conservation beyond that becomes more critical for new supplies, but could be difficult to achieve[3].

Current Conditions	Average Conditions (AFY)	Drought Conditions (AFY)
Current Demand	**14,600**	**14,600**
Supply Sources		
Cachuma Potable & GWC	9,322	7,672
State Water	3,800	3,052
Groundwater	2,350	2,710
Recycled Water	1,000	1,000
Total Supply	**16,472**	**14,434**
Total Surplus (Deficit)	***1,872***	***(166)***

Table 7-1. Water supply during average and drought conditions at current levels of demand and current pumping and treatment capacities. The SAFE Ordinance requires that State Water deliveries of 3,800 acre-feet per year be used for planning purposes – it is conservative because there is a 50% chance that 60% to 70% of Table A water (more than the 4,500 acre-feet per year of GWD delivery capacity) can be delivered in any year (section 5.3.2). The 2,350 acre-feet per year of groundwater is GWD's portion of the yield of the groundwater basin.

2030 Forecast	Average Conditions (AFY)	Drought Conditions (AFY)
A. Base Forecasted Demand 2030	15,833	15,833
B. Authorized Future Demand	850	850
Total Demand 2030 (A+B)	**16,683**	**16,683**
Supply Sources		
Cachuma Potable & GWC	9,322	7,783
State Water	3,800	2,488
Groundwater	2,350	2,852
Recycled Water[4]	1,000	1,000
Total Supply	**16,472**	**14,123**
Total Surplus (Deficit)	***(211)***	***(2,560)***

Table 7-2. Forecast supplies and demand in 2030 under average and drought conditions. Average supplies are those available under existing water rights and allocations; the exception is State Water, where the SAFE Ordinance requires that 3,800 acre-feet per year be used for planning purposes – it is conservative because there is a 50% chance that 60% to 70% of Table A water (more than the 4,500 acre-feet per year of GWD delivery capacity) can be delivered in any year (section 5.3.2). Drought supplies are calculated from the WSMP Model, based on the average of the worse five consecutive years of drought (see Section 13.1.2). Current pumping and treatment capacities were used in the models.

[3] The District's forthcoming Urban Water Management Plan is required to include a target implementation program, whereby the California Urban Water Conservation Council's Best Management Practices or similar demand management measures are implemented to achieve conservation goals (Water Code Section 10610 – 10656).

[4] Recycled water supply is kept constant in the calculations. However, there is an additional 2,000 acre-feet per year of unused recycled capacity if additional customers are identified and additional pipelines are constructed.

8. The CCWA Bank of unused State Water stored in San Luis Reservoir is an important component in GWD's water supply reliability. The current bank should be strongly supported by GWD. Alternative banks must be examined individually – some of the existing groundwater banks are relatively expensive and have storage/delivery restrictions.
9. Cachuma sources of supply should generally be used first among supply sources. However, a modified approach of using groundwater first along with Cachuma water when Cachuma deliveries are reduced can significantly increase the reliability of GWD's water supplies.
10. The limitation on the amount of Cachuma water that can be injected during a spill event is limited by GWD's injection capacity. Increasing the injection capacity does increase the reliability of GWD's water supplies somewhat, but increases the melded variable costs of all supplies.
11. The State-mandated conservation goal by the year 2020 will be important to balance GWD's supply and demand in the future. With the conservation-related reduction in demand, GWD will lessen drought shortfalls in supply at higher levels of demand in the future.
12. The potential effects of climate change on GWD's water supplies have been integrated into future State Water delivery calculations. The effect on local supplies is less-well understood, with studies suggesting less than a 10% swing in precipitation either way in the future.

As the result of this WSMP, policy issues for the GWD Board of Directors to consider include:

a. Assumptions for Future Planning – should GWD plan for average conditions or worst-case conditions? Should there be a planned shortfall in supplies for the worst year of a drought because any shortfalls should be offset by customers conserving water during such times?
b. New supplies – should GWD focus on increasing and enhancing recycled water use, given that it is one of the most available options for future supply?
c. Groundwater Management – should GWD manage its groundwater pumping such that groundwater elevations generally remain well above or only slightly above 1972 levels (except during a drought)? The WSMP model used the SAFE requirements that groundwater can be pumped anytime groundwater elevations were above 1972 levels. Maintaining elevations well above 1972 levels would enhance the existing Drought Buffer and drought protection for customers. In addition, the District's Annual Storage Commitment to the Drought Buffer is currently 2,378 acre feet per year, which means that the District will be required to not pump wells *and* inject a small amount of water from another source to meet the requirements of SAFE, if groundwater elevations were to drop below the 1972 levels (except during a drought). At the same time, maintaining a buffer well above the 1972 levels means that more costly State Water would be used in lieu of groundwater to serve customers.

d. Conservation – what future conservation methods are appropriate for GWD and how will they be implemented?

e. SAFE Calculation for Additional Service Connections – how should the 1% of potable supplies for future development be calculated and allocated?

This WSMP is based on knowledge of the water supply sources as they are now understood (including the projection to 2030 of State Water conditions). There are several factors that could affect the conclusions in this study:

a. If there was an emergency within the State Water project – failure of Delta levees, damage to aqueducts from earthquakes or other natural disasters – deliveries could be reduced or curtailed for a period of time.

b. A local earthquake could disable the Tecolote Tunnel for a period of time, leaving groundwater pumping and recycled water as the remaining sources of water.

c. Issues with endangered species could further affect either State Water or Cachuma deliveries.

d. Seawater intrusion or a contaminant release could reduce the ability to pump a portion of the groundwater basin.

e. Climate change produces future conditions that are dramatically different than past conditions.

8 Recommendations

Recommendations developed from this WSMP are divided into segments based on the potential timing of implementation of the recommendations.

8.1 Immediate Actions

1. Implement the hybrid strategy for use of GWD's various sources of water supply, as discussed in Section 12.2.2 and Chapter 9. This strategy includes using groundwater and State Water in a manner that balances drought storage against supply costs and optimizes GWD's groundwater well capacity during drought periods.
2. Encourage CCWA to formalize their current San Luis Reservoir water bank with DWR.
3. Use the findings in this Plan as input to appropriate portions of the upcoming Urban Water Management Plan and in any assessments of GWD's water supplies.
4. Calculate average spring groundwater elevations each year using wells designated in Groundwater Management Plan. Plot this average on Index wells chart to determine where current groundwater conditions are relative to 1972 groundwater elevation.

8.2 Actions for Next Year

1. Develop conservation measures to reduce water supply demand as per State-mandated guidelines to be developed in GWD's upcoming Urban Water Management Plan.
2. Develop Water Supply Management Plan Implementation Guidelines as discussed in Section 6.
3. Continue to fund the semi-annual collection of groundwater elevation data so that average groundwater elevations in the basin can be calculated to assist in determining water supply priorities.

8.3 Actions for the Following Four Years

1. Update the WSMP to reflect changes in the Santa Ynez River Model and State Water availability calculations. It is recommended that these updates are implemented every five years, or more often if the input information changes significantly.
2. At intervals of every five years, determine whether GWD's groundwater pumping capacity is adequate for drought protection. This can be accomplished using the updated WSMP and water supply demand projections. Consideration should also be given to recalibrating the Groundwater Model if basin conditions differ from historical.
3. Continue to fund the semi-annual collection of groundwater elevation data so that average groundwater elevations in the basin can be calculated to assist in determining water supply priorities

4. Modify the WSMP every five years, preferably in the year prior to the Urban Water Management Plan being prepared.
5. As part of the regular update of the WSMP, evaluate whether the pumping restrictions under the SAFE Ordinance would cause an "artificial" water supply shortage as discussed in Section 13.4.1. This shortage could occur in the years when Cachuma deliveries are not reduced, but State Water deliveries are significantly curtailed. The WSMP modeling suggests that the probability of this occurrence is relatively low at current demand levels. However, the modeling suggests that this could occur more frequently at higher levels of demand (when the groundwater basin is operated more-frequently below 1972 groundwater elevations).

9 Management Plan

The recommendation is that the groundwater-State Water hybrid management strategy be used by GWD to manage its various water sources. This hybrid strategy is charted in the flow diagram in Figure 9-1, and described below in priority order:

1. Cachuma water sources are used first until their entitlement is exhausted for the year, in the following order: Carry-over Water, spill Water, and Cachuma Entitlement.
2. However, if there is a local drought such that Cachuma deliveries are reduced below 100% in any month, then groundwater is pumped at its capacity as a supplement to Cachuma water. This extends the availability of Cachuma water later into the water year and allows longer pumping of the limited-capacity groundwater wells.
3. Any CCWA banked water is then used. CCWA considers that the first State Water used is banked water, so this accounting is done automatically as State Water is used.
4. Determine the average spring groundwater elevations from the Index Wells. Use the following logic sequence:
    a. If groundwater elevations are higher than -26.2 ft msl (1972 groundwater elevation), pump groundwater at its capacity of 300 acre-feet per month. Then supplement State Water as needed to fully meet demand.
    b. If groundwater elevations are lower than -84.6 ft msl (historical low elevation), use State Water to meet demand.
    c. If groundwater elevations are between -26.2 ft and -84.6 ft msl, use the following logic sequence:
        i. If Cachuma deliveries are at 100%, use State Water to meet demand.
        ii. If Cachuma deliveries have been reduced, use groundwater first at its capacity, supplemented by State Water to meet demand.

Examples of how supplies would be used on a monthly basis in different conditions are shown below. The critical nine months are shown through the summer and into the fall – the following year's Cachuma entitlement starts in October, which allows return to Cachuma supplies.

Average Year Above 1972	Jan	Feb	March	April	May	June	July	August	Sept
Cachuma Potable & GWC	634	614	690	971	1,324	1,427	910		
Groundwater							300	300	300
State Water							351	1,207	1,122
Total	634	614	690	971	1,324	1,427	1,561	1,507	1,422

Table 9-1. Example of an average year (groundwater elevations above 1972 levels) monthly mix of sources of water supply. Cachuma supplies are used first when Cachuma deliveries are at full entitlement.

Average Year Below 1972	Jan	Feb	March	April	May	June	July	August	Sept
Cachuma Potable & GWC	634	614	690	971	1,324	1,427	910		
Groundwater									
State Water							651	1,507	1,422
Total	634	614	690	971	1,324	1,427	1,561	1,507	1,422

Table 9-2. Example of an average year (groundwater elevations below 1972 levels) monthly mix of sources of water supply. Cachuma supplies are used first when Cachuma deliveries are at full entitlement. The Annual Storage Commitment as per SAFE is met by not pumping any groundwater and by injecting a small amount of water from another source.

Dry Year Example	Jan	Feb	March	April	May	June	July	August	Sept
Cachuma Potable & GWC	521	395	620	883	1,183	1,132	783		
Groundwater	300	300	300	300	300	300	300	300	300
State Water							492	1,290	1,092
Total	821	695	920	1,183	1,483	1,432	1,575	1,590	1,392

Table 9-3. Example of a dry year (reduced Cachuma deliveries) monthly mix of sources of water supply. Groundwater is pumped at capacity to supplement Cachuma supplies. This strategy makes maximum use of GWD's groundwater pumping capabilities in a dry year.

Spill Year Below 1972	Jan	Feb	March	April	May	June	July	August	Sept
Cachuma Potable & GWC	530	507	634	1,009	1,308	1,444	1,635	1,579	602
Groundwater									
State Water									830
Total	530	507	634	1,009	1,308	1,444	1,635	1,579	1,432

Table 9-4. Example of a Cachuma spill year (groundwater elevations below 1972 levels) monthly mix of sources of water supply. Cachuma supplies extend farther into the year because the use of spill water during the winter months does not debit GWD's Cachuma allocation. The Annual Storage Commitment as per SAFE is met by not pumping any groundwater and by injecting a small amount of water from another source. If groundwater elevations were above 1972 levels, groundwater would be pumped in September to offset some of the State Water use.

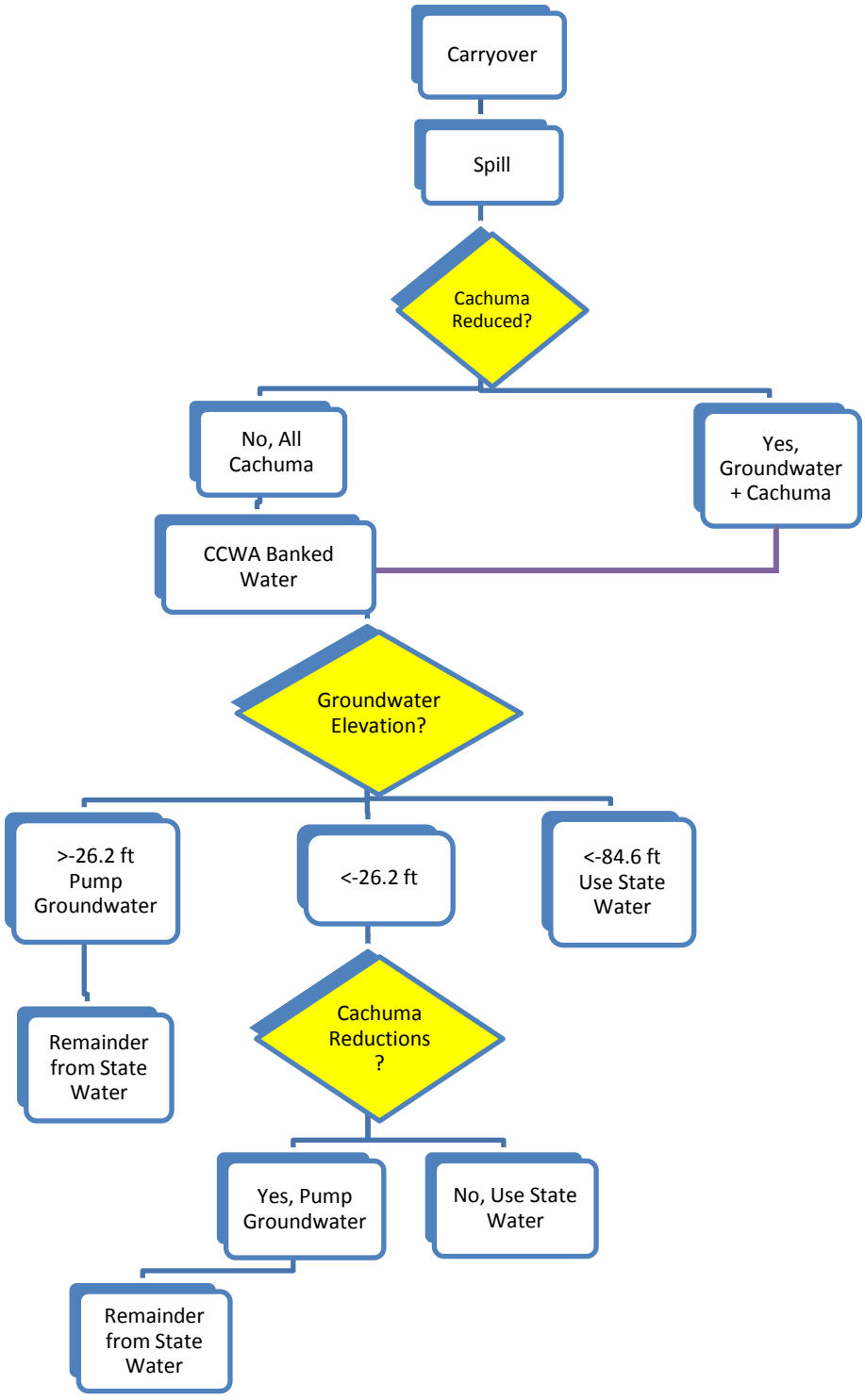

Figure 9-1. Hierarchy of water supply use in the recommended hybrid groundwater-State Water strategy. All water supplies are used progressively down from the top of the diagram until they are depleted or until capacities are equaled. Decision points where groundwater elevations or Cachuma deliveries need to be assessed are marked with yellow diamond shapes. Groundwater elevations are the average Spring elevations in the Index Wells in the Goleta groundwater basin (GWD, 2010).

10 References

California Department of Water Resources (DWR), 2006, *Progress on Incorporating Climate Change Into Management of California's Water Resources*, Technical Memorandum Report, 338 p.

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Technical Appendices

11 Technical Appendix – Historical Supply Strategies

The strategy of how to interactively use GWD's water supplies is as important as the reliability of each of those supplies. For instance, if groundwater supplies have been pumped down prior to a drought, then the usually-reliable groundwater supplies may not be available in that drought. In this chapter, the individual supply sources are discussed and evaluated for reliability, critical supply components are identified, and the reliability of the current supply strategies are evaluated.

11.1 Sources of Supply

GWD has a variety of local and supplemental water supplies available to meet customers' needs. Water supplies include local surface water supplies from Lake Cachuma, groundwater from the Goleta Groundwater Basin, recycled water from the Goleta Sanitation District, and importation of State Water. The proportion of each of these supplies has varied considerably over time, with State Water replacing groundwater use over the past 15 or so years so that the groundwater basin could recharge (Figure 11-1). In the last ten years, GWD has obtained approximately 76% of its water supplies from Lake Cachuma, 16% from State Water (direct delivery and exchange water), 6% from recycled, and 2% from groundwater. Of those supplies, about 11% were for non-potable uses though recycled water and Goleta West Conduit deliveries.

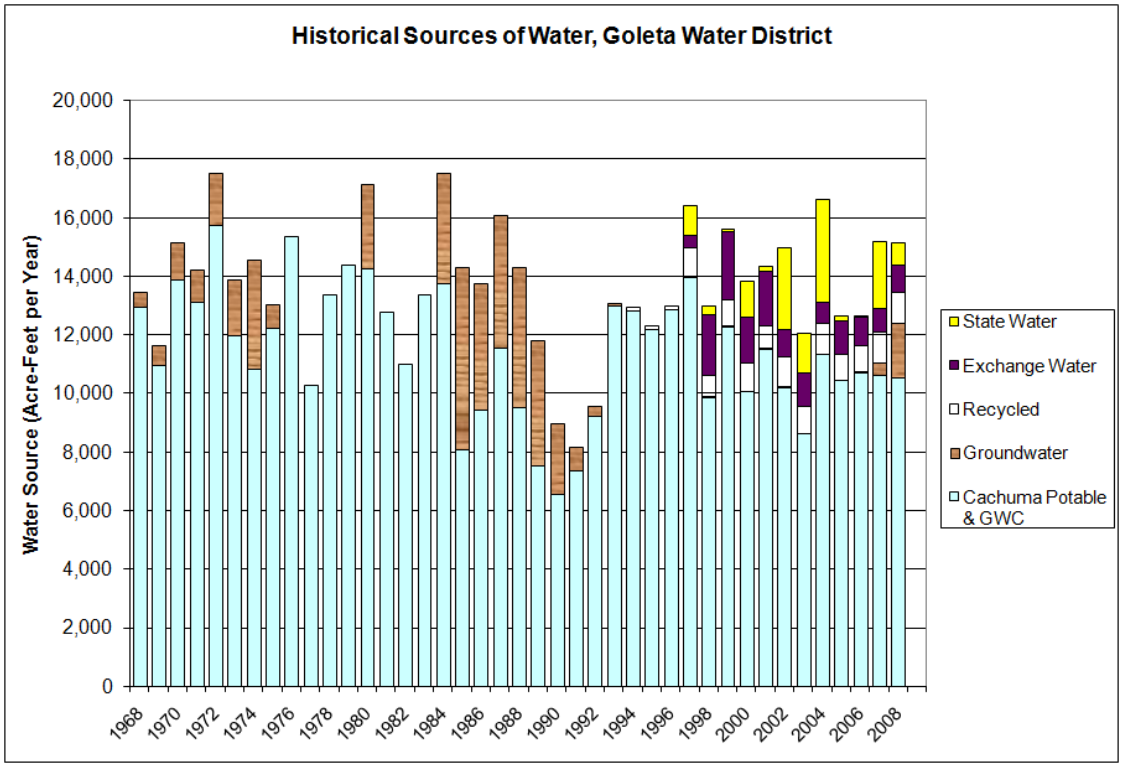

Figure 11-1. Historical sources of GWD water. Of these supplies, about 11% were for non-potable uses (recycled water, Goleta West Conduit).

Monthly use is highest during August of most years (Figure 11-2), with Cachuma supplying an increasing amount of supply during the summer months.

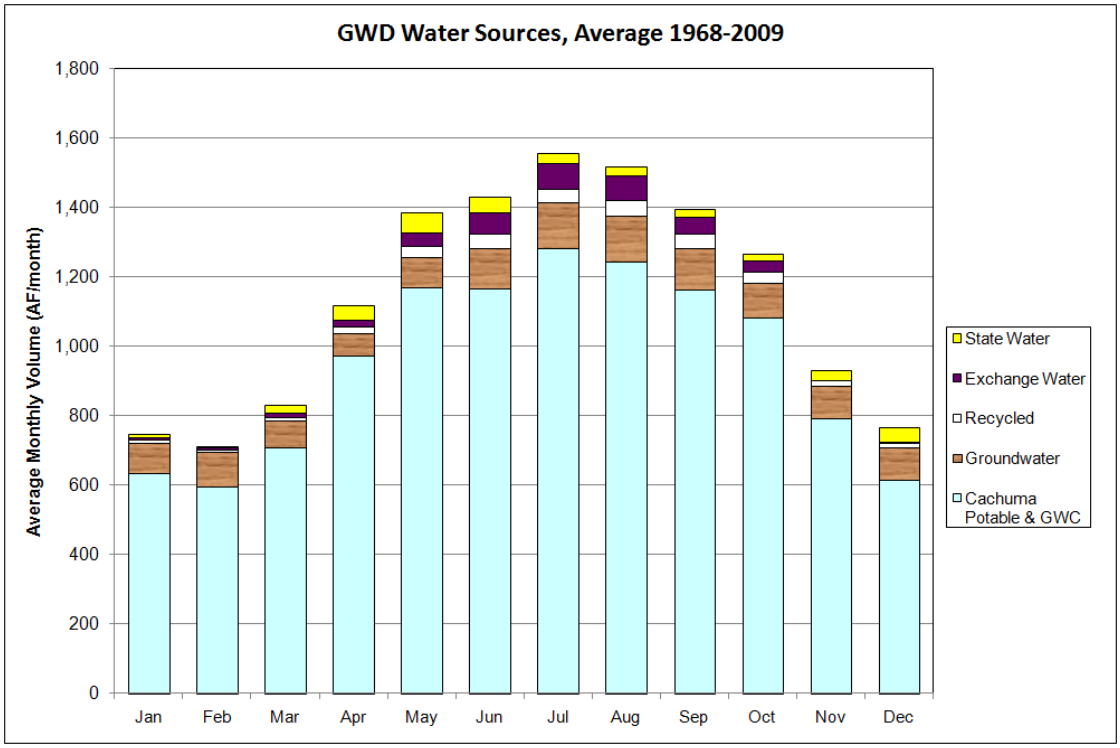

Figure 11-2. Sources of water supply by month for period 1968 to 2009. Note that State Water was not available for the entire period and groundwater was not pumped for over a decade as the basin was allowed to refill.

11.1.1 Cachuma Reservoir

Cachuma Reservoir was constructed by the Bureau of Reclamation and is operated by the Cachuma Operations Management Board (COMB) under contract to the Bureau. Entitlements, costs, constraints, and reliability are summarized in Table 11-1.

11.1.1.1 Cachuma Supply

Entitlement – GWD's share of the Cachuma yield is 9,322 AFY; with the addition of spill water, the average of Cachuma deliveries for the period 1997 to 2008 has been 10,675 AFY (Figure 11-6). Current Cachuma operations have been optimized by COMB based on modeling using the Santa Ynez River Model.

Carryover Water – Entitlement that is not used in any Cachuma water year (October through September) is carried over to the following years. When Cachuma spills (on the average of once every three years), all carryover water is considered to have been spilled and the accounting for carryover water is returned to zero. Thus, it is important to use carryover water as soon as possible, giving it the highest priority of use.

Spill Water – When Cachuma spills, GWD can take as much water as it can use, without debiting its entitlement for that year. The amount of spill water that GWD can actually use for customer demand and for groundwater injection is largely limited by GWD's treatment and injection capacity. Once the spill ceases, further use of Cachuma water by GWD is debited against its annual entitlement as if the spill had not occurred. The WSMP modeling calculated the additional Cachuma yield from spill water by allocating spill water to customer demand in each month that Cachuma spilled. The average amount of spill water allocated to customer demand over the 86-year model period was 870 acre-feet per year. An additional 280 acre-feet per month of spill water was allocated to injection in each month that Cachuma spilled. The average amount of spill water allocated to injection over the 86-year model period was 295 acre-feet per year of water (it is a coincidence that this number is close to the 280 acre-foot per month treatment/injection capacity). The occurrence of spills during the 86 years of the Santa Ynez River Model is indicated in Figure 11-3. Spills generally occur during the months of January through May (Figure 11-4) and usually occur over one to four months in duration (Figure 11-5).

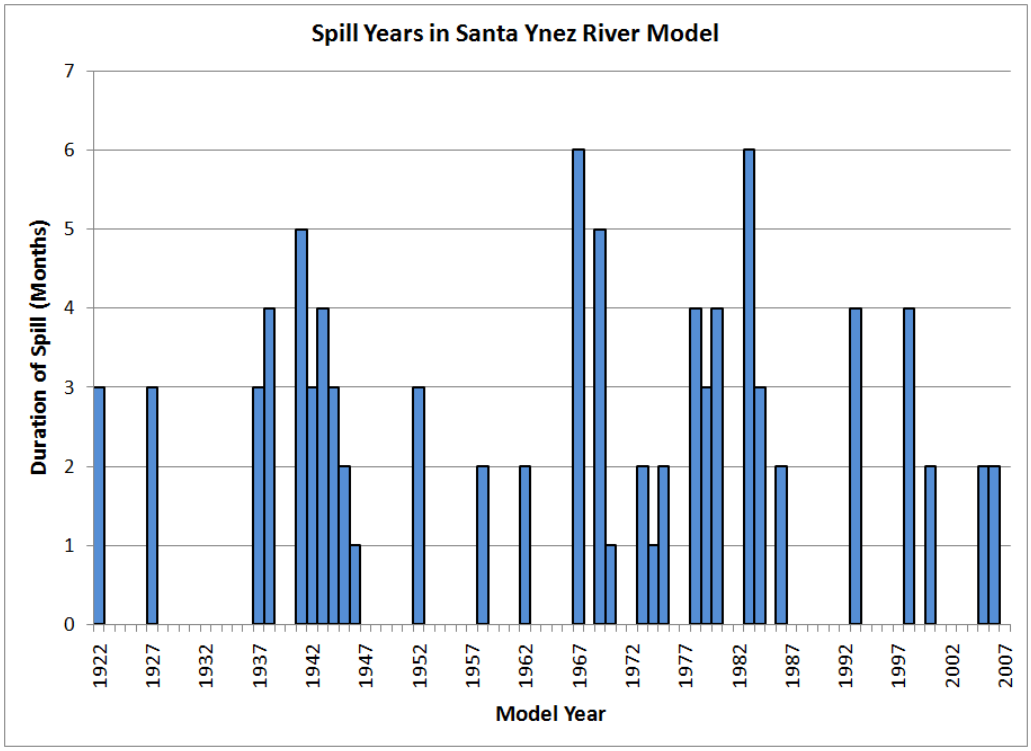

Figure 11-3. Years in which there is a Cachuma spill in the Santa Ynez River model.

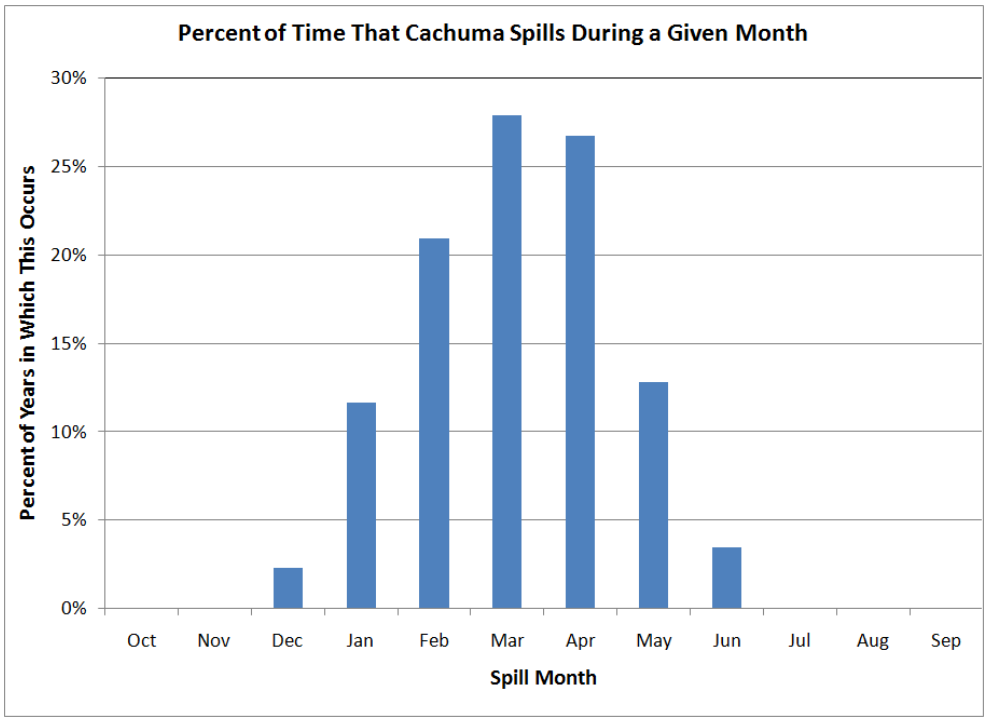

Figure 11-4. Months during which Cachuma spills, based on 86 years of Santa Ynez River Model.

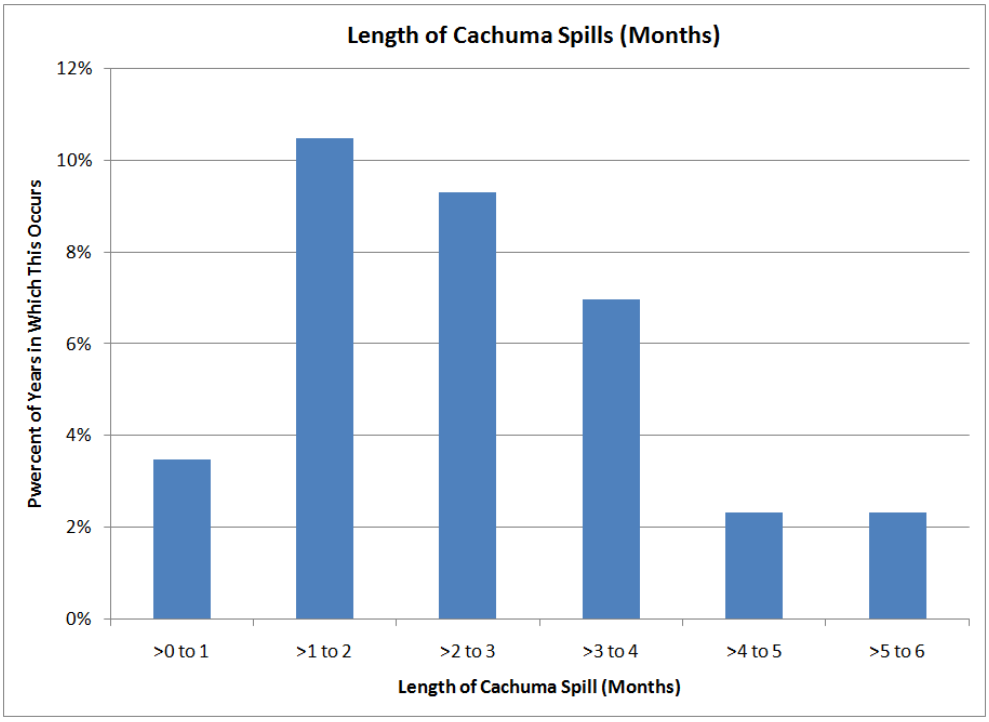

Figure 11-5. Length of Cachuma spills, based on 86 years of Santa Ynez River Model.

11.1.1.2 Cachuma Reliability

Water is diverted from the reservoir at a fixed rate that is somewhat higher than the yield of the reservoir, with deliveries cut back by 20% during drought periods. The adjustments for the water supply from Lake Cachuma are mutually agreed to by the Cachuma member agencies. For example, the Cachuma entitlements for all water purveyors were reduced by 40% in 1991, during the 1987-92 drought. If the "March miracle" of 1991 hadn't filled Cachuma Reservoir, there was the possibility of more severe reductions in deliveries. Scenarios #1b-drght, #2c, and #4 of the WSMP modeling depict such a possibility.

Over the 86-year period of the WSMP, 97% of its Cachuma entitlement was available to GWD. Carryover water is generated only in a few years when Cachuma spills and GWD's entitlement is not used during those spill months. The WSMP evaluates whether, and how often, carryover water is lost in the various management scenarios.

Whenever there is a large storm event or following a fire in the Cachuma watershed, material is washed down the river and is caught behind Bradbury Dam. This "siltation" slowly fills the reservoir and decreases the yield of the Cachuma Project. River models take this into account for current conditions; some predict future siltation. The Santa Ynez River Model uses current conditions, so the Cachuma yield in the future (such as in the 2030 model runs) is likely overstated.

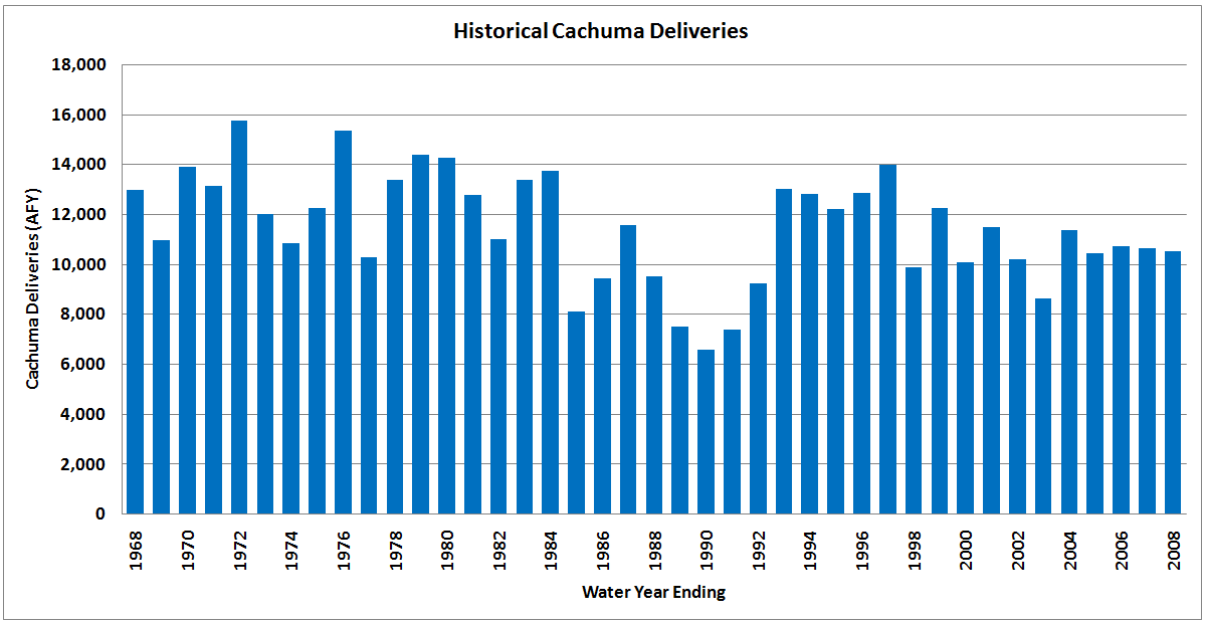

Figure 11-6. Historical Cachuma potable and Goleta West Conduit deliveries to GWD.

11.1.1.3 Cachuma Costs

GWD pays an annual fixed cost of $2,574,000 to COMB and $450,000 to the Cachuma Conservation Release Board (CCRB) for its share for operating Cachuma Reservoir. The cost for GWD to treat the water delivered from Cachuma is an additional $67 per acre foot. However, since 1997 an average of 700 AFY of the untreated water is routed to the Goleta West pipeline, where treatment costs are only $22 per acre foot. Fixed and variable costs are illustrated in Figure 11-7 through Figure 11-9. The Goleta West Conduit deliveries from Cachuma have a slightly reduced Agency fee of $320 (instead of $324 for potable deliveries), based on the amount of water that is estimated to be used.

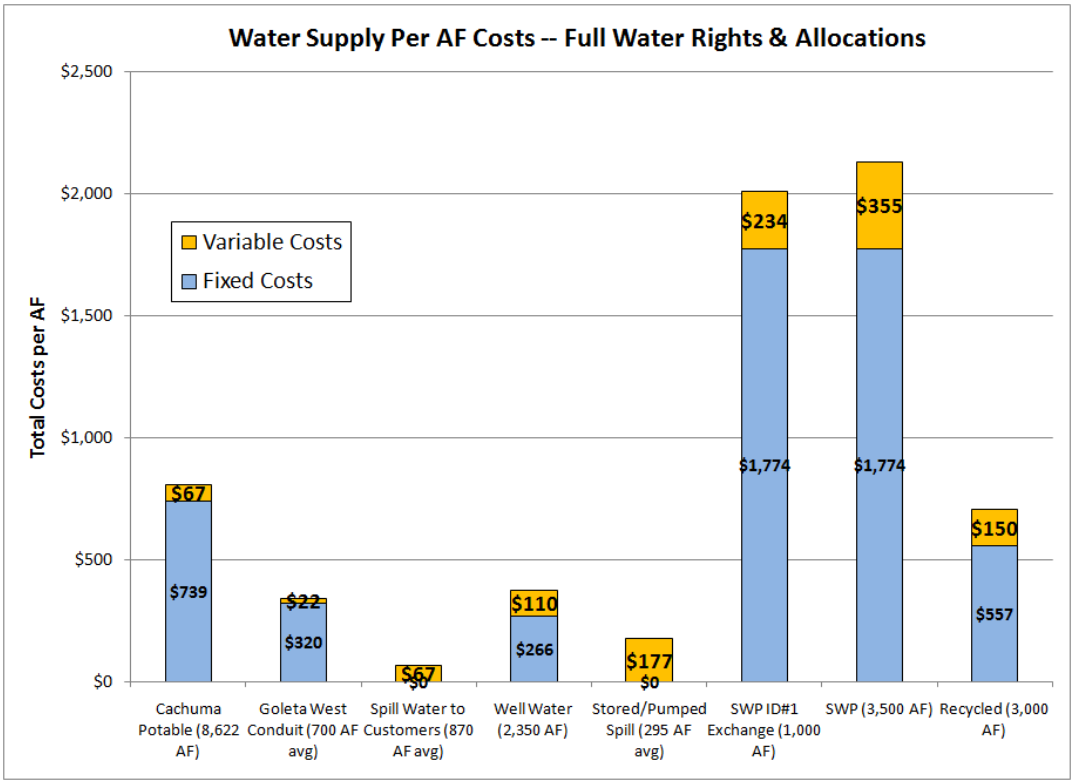

Figure 11-7. Cost per acre-foot of GWD's water supplies. Fixed costs for recycled water are based on capacity of 3,000 acre-feet per year, although there are currently customers for only about 1,000 acre-feet per year of recycled water.

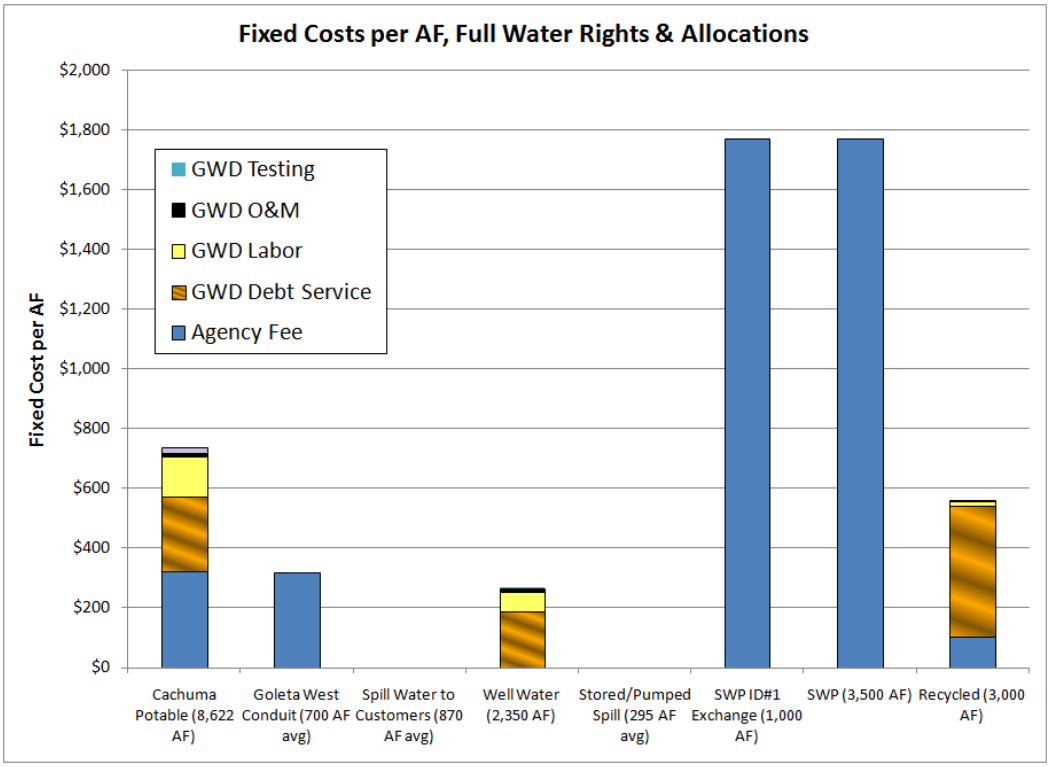

Figure 11-8. Elements in fixed costs per acre-foot for GWD's water supply sources. Fixed costs for Cachuma are not reflected in the cost of spill water because these costs are accrued irrespective of whether there is a spill. Recycled fixed costs are distributed across the full recycled water capacity.

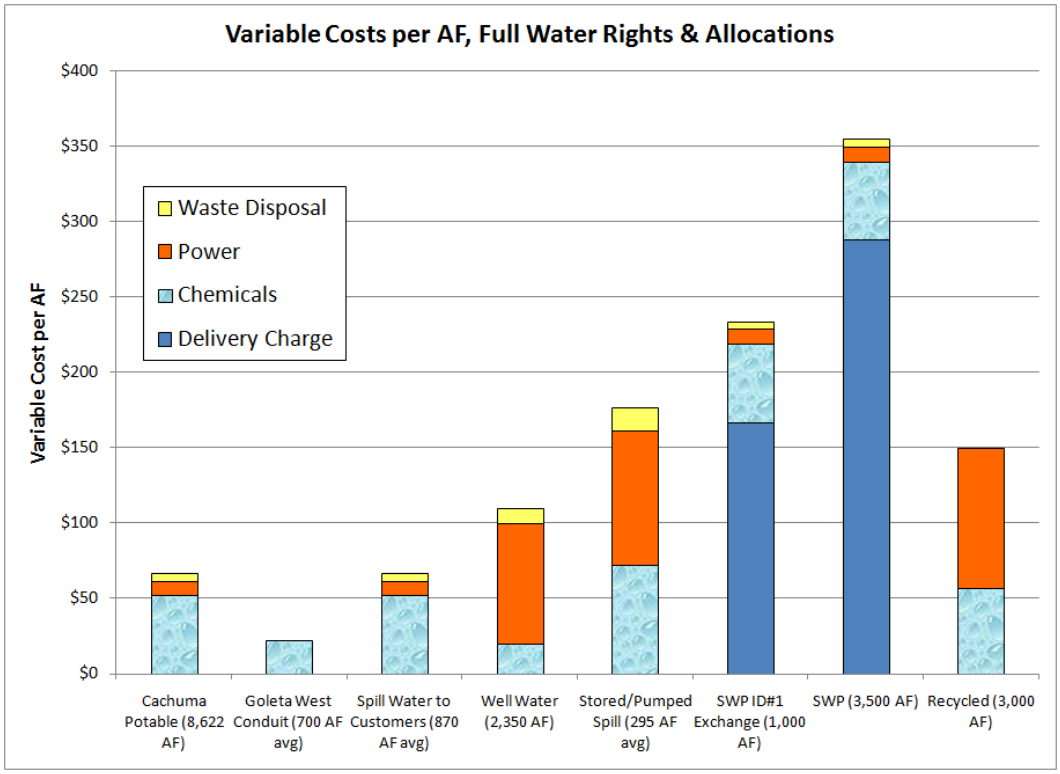

Figure 11-9. Variable costs per acre-foot for GWD's water supply sources.

11.1.2 Groundwater

Groundwater used by GWD is pumped from its own wells within the Goleta Groundwater basin, with both the amount and timing of the pumping determined in part by the Wright Judgment and GWD's SAFE Ordinance. Water rights, costs, constraints, and reliability are summarized in Table 11-1.

11.1.2.1 Groundwater Supply and Constraints

Wright Judgment – GWD has a current water right to 2,350 AFY of groundwater from the Goleta Groundwater basin under the terms of the Wright Judgment. Unexercised groundwater rights at the end of a year revert to a stored water right in the basin. GWD can also store water by injecting water in the basin for later extraction. The amount of water stored in the basin is reported annually by GWD; as of 2009, GWD storage in the basin was 43,253 acre-feet (GWD, 2010). The details of how both the Wright Judgment and the SAFE Ordinance affect groundwater use by GWD are contained in GWD's and La Cumbre Mutual Water Company's Groundwater Management Plan for the Goleta Groundwater basin (GWD, 2010).

SAFE Ordinance – How this groundwater is used is regulated by GWD's SAFE Ordinance, which specifies conditions under which groundwater is either pumped or stored. The key determining factors are groundwater elevations in the basin and the availability of Cachuma water in any year. When groundwater elevations are below those measured in 1972, groundwater cannot be pumped and a pre-determined amount of water must be stored annually in the basin as a drought buffer. The exception to this rule is when there are reduced deliveries of Cachuma water – SAFE allows for pumping of groundwater during these "drought" conditions. The Groundwater Management Plan specifies which wells to use in determining groundwater elevations in 1972 and in subsequent years (GWD, 2010) (Figure 11-10).

Groundwater Elevations Below 1972 Levels – When groundwater elevations are below 1972 levels, SAFE requires some actions to be taken. As discussed above, groundwater cannot be pumped unless Cachuma supplies have been reduced. In addition, an "Annual Storage Commitment" of at least 2,000 acre-feet per year is required under the SAFE Ordinance for replenishment to 1972 levels (this has risen to 2,378 acre-feet per year in 2010 as new customers have been connected – see section 14.2.3). Any excess State Water actually delivered over 3,800 acre-feet per year shall be stored in the Central subbasin until the basin is replenished to its 1972 level. There can be no new service connections unless all the obligations for water service and the Annual Storage Commitment are met.

Physical Facilities – GWD currently has five fully operational groundwater production wells, with accompanying treatment facilities. Well extraction and treatment capacity is about 300 acre-feet per month. The wells are located in the North and Central subbasins of the Goleta Groundwater basin.

The same wells used for extracting groundwater can also be used for injection. Historically, the source water for injection has been spill water from Cachuma. This injection of Cachuma spill water occurs in both GWD's well and in La Cumbre Mutual Water Company's wells. The injection capacity during spill events is controlled by the capacity of treatment facilities (raw water can't be introduced in the distribution system)

and well injection capacity. GWD's injection capacity is currently about 280 acre-feet per month (3 mgd). Injection of Cachuma entitlement water or State Water could also be accomplished during periods when the wells are not used for extraction. This possibility is investigated in this WSMP.

Groundwater in Storage Above 1972 Groundwater Elevations – Because much of the groundwater in the Goleta basin is stored in confined aquifers, there cannot be a simple calculation of water in storage from groundwater elevations. However, the groundwater modeling (CH2MHill, 2010) gives an estimate of how much water can be pumped from above 1972 groundwater elevations – it takes roughly 10,000 acre-feet of cumulative GWD pumping to drop from high groundwater elevations (10+ ft msl) to the 1972 elevation (-26 ft msl).

Pumping from the Drought Buffer – The Drought Buffer can only be used for delivery to existing customers when a drought on the South Coast causes a reduction in GWD's annual deliveries from Lake Cachuma, and cannot be used as a supplemental supply for new or additional water demands. The amount of water that can be pumped from the Drought Buffer has been calculated in the Groundwater Model (CH2MHill, 2010), the results of which have incorporated into the WSMP (see Section 14.4). For instance, in the current-demand scenario with an extended drought (Scenario #2c that has two drought years added to the 1986-1991 drought), an average of 2,900 acre-feet per year was pumped from the basin for six consecutive years, resulting in a drop in groundwater elevations of 46 feet (well within the Drought Buffer). In the future-demand scenario with an extended drought (Scenario #4), an average of 4,500 acre-feet per year was pumped for six years, resulting in a drop in groundwater elevations of 70 feet (which is most of the Drought Buffer if beginning groundwater elevations are near 1972 elevations).

In the Groundwater Management Plan (GWD, 2010), it was calculated that during the drought of 1986-1991 groundwater elevations dropped about 8 feet per year when GWD pumped about 4,500 acre-feet per year (rather than a little more than 10 feet per year calculated here). This suggests that the Groundwater Model (and subsequently, the WSMP) may somewhat overestimate the effect of drought pumping on the basin.

11.1.2.2 Groundwater Reliability

Prior to the Wright Judgment and SAFE Ordinance, GWD used groundwater as an important source of its water supply, with groundwater elevations dropping to historical lows during the drought of 1986-1991 (left portion of Figure 11-10). Since the drought, GWD has largely foregone pumping the basin to any extent, which allowed the basin to rise to near-historical high groundwater elevations (right side of Figure 11-10). As the result, there is a significant amount of groundwater in the basin that GWD has the right to pump (over 43,000 acre-feet as of 2009). Thus, the reliability of groundwater is currently very good. Groundwater is a less expensive source of water than State Water, but its use must be balanced by the need to maintain a drought buffer of groundwater to ensure a reliable supply when Cachuma and/or State Water supplies are reduced in a drought. Determining this balance is one of the primary purposes of this WSMP.

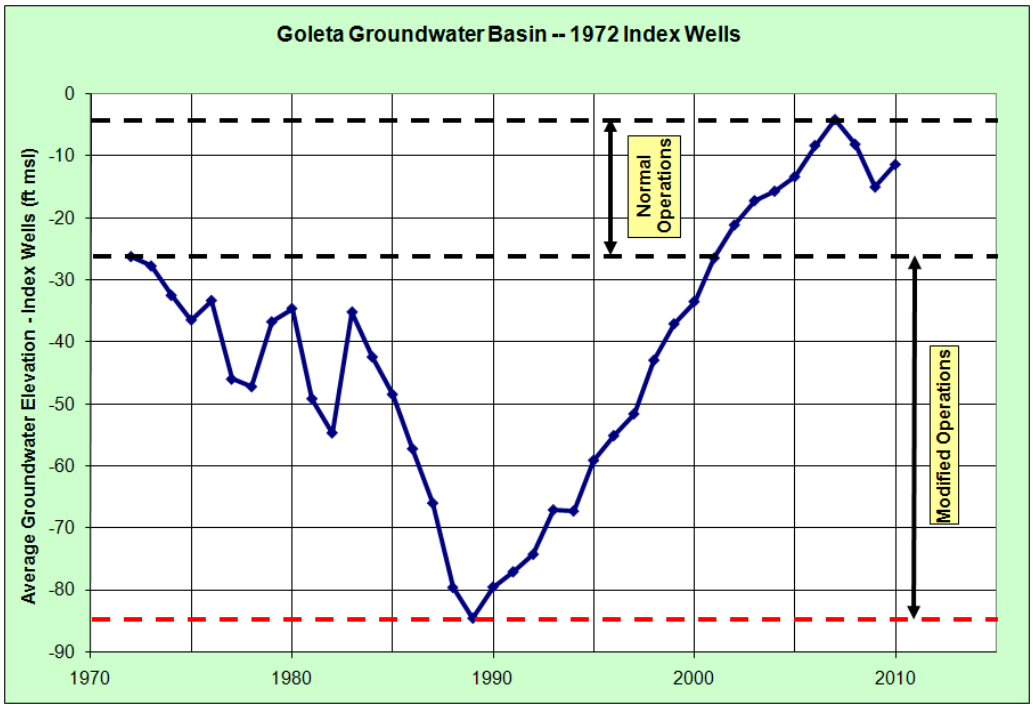

Figure 11-10. Groundwater elevations in the Goleta Groundwater basin, as indicated by the seven-well 1972 Index Wells average (GWD, 2010). The 1972 groundwater elevation used in the SAFE Ordinance is indicated at -27 ft elevation.

11.1.2.3 Groundwater Costs

Extraction of Groundwater – The cost to extract and treat groundwater is about $110 per acre-foot. The fixed costs of groundwater production are about $266 per acre-foot per year, spread across GWD's 2,350 acre-feet annual water right in the basin.

Groundwater Injection – The cost for groundwater injection of spill water is the treatment cost for the source water. These treatment costs are about $67 per acre-foot. When the water is pumped back out for use, the $110 for groundwater extraction must be added, resulting in an overall variable cost of $177 per acre-foot.

Fixed and variable costs are illustrated in Figure 11-7 through Figure 11-9.

11.1.3 State Water

In 1991, voters within the service area of GWD chose to purchase an allocation of State Water. In 1994, voters increased the amount of State Water purchased (but not the pipeline capacity) so that the reliability of State Water could be increased. Treated State Water is delivered to GWD by the Central Coast Water Authority (CCWA) using the Coastal Branch of the California Aqueduct. The terminus of the Coastal Branch is Lake Cachuma, where State Water is de-chlorinated and mixed with untreated Cachuma water. The physical mixture of State and Cachuma water must be re-treated before delivery to customers. Allocations, costs, constraints, and reliability are summarized in Table 11-1.

11.1.3.1 State Water Supply and Constraints

Allocation – GWD has a State Water allocation of 7,000 acre-feet per year, plus an additional allocation of 450 acre-feet per year through the CCWA Drought Buffer. However, GWD only purchased 4,500 acre-feet per year of capacity in the Coastal Branch of the California Aqueduct. The higher allocation than carrying capacity reflects the reality that the State Project cannot on average deliver the full amount of its customers' allocations.

Storage – GWD currently uses two means of storing State Water –Cachuma Reservoir and CCWA storage in San Luis Reservoir. Long-term storage of State Water (such as for drought protection) in Cachuma Reservoir is problematic because Cachuma spills on average every three years, with State Water considered the first water over the spillway.

CCWA stores State Water that has been ordered by its member agencies but is unused at the end of the year. This relatively new program uses San Luis Reservoir (an off-aqueduct reservoir along the California Aqueduct) as the storage site. Stored water can also be "spilled" from San Luis when DWR moves a large amount of water into the reservoir for temporary storage and displaces the CCWA stored water. This is likely to happen in 2011. Although no upper limits for storage have been set, CCWA considers that 4,000 acre-feet of storage for GWD is likely a reasonable number. The WSMP modeling suggests that the Bank can be re-filled in a year or two after it has been depleted. During a serious drought, the Bank is very helpful in the early stages of the drought; when it is depleted, it is not likely to be re-filled until the drought is over.

Exchange Water – From 1997 to 2008, about 52% of GWD's State Water delivery was involved in an exchange with Santa Ynez River Water Conservation District-Improvement District No. 1.

11.1.3.2 State Water Reliability

Delivery of water from the State Water Project varies with climatic conditions in northern California and environmental/regulatory issues in the Sacramento Delta. The allocation is based each year on reservoir levels, the amount of snow runoff expected, and constraints on pumping from the Delta into the California Aqueduct. The California Department of Water Resources (DWR) has calculated probabilities of water delivery over a range of climatic conditions and environmental constraints, both for current conditions and those projected for 2029. DWR has been updating the reliability studies every two years or so. The latest reliability study for 2009 (DWR, 2010) was used in the WSMP modeling for both current demand and projected 2030 demand. Overall, the reliability of State Water is now considered to be 60% of Table A allocation, with a low of 7% during the driest year to a high of 81% during the wettest year.

11.1.3.3 State Water Costs

State Water costs are divided into fixed (capital) and variable (operational) costs. GWD currently pays $7,051,000 a year to CCWA for its share of the fixed costs for State Water. The variable rate is considered below.

Table A Water Delivered to Cachuma – The variable cost of State Water delivered to Cachuma Reservoir and subsequently treated for GWD customers is $355 per acre-foot.

The fixed cost per acre-foot is $1,774 when it is proportioned across the total of 4,500 acre-feet per year of average yield/aqueduct capacity.

Exchange Water with ID #1 – The variable cost of State Water delivered and treated through the exchange agreement with ID#1 is $234. The fixed cost per acre-foot is $1,774 when it is proportioned across the total of 4,500 acre-feet per year of average yield/aqueduct capacity.

Storage – There is currently no supplemental charge for storing State Water in either Cachuma Reservoir or San Luis Reservoir.

Fixed and variable costs are illustrated in Figure 11-7 through Figure 11-9.

11.1.4 Recycled Water

Through an agreement with the Goleta Sanitation District, recycled water is delivered within GWD for non-potable uses such as landscape irrigation. This water would otherwise have been discharged into the ocean. Capacities, costs, constraints, and reliability are summarized in Table 11-1.

11.1.4.1 Supply and Constraints

Current Capacity – The recycled water project (treatment and distribution) currently has a seasonal treatment and distribution capacity of approximately 3,000 AFY. The recycled water plant has a design capacity of 3 million gallons per day (mgd), which is about 9 acre-feet per day (GSD, 2006). GWD is currently delivering approximately 1,000 AFY to the University of California Santa Barbara campus, several golf courses, and other irrigation users, most of whom were previously using the District potable water for irrigation.

Future Capacity – There is currently about 2,000 acre-feet per year of unused recycled water capacity. GWD plans on expanding use of recycled water, but that expansion is linked to further public acceptance of using recycled water. Any expansion beyond the current capacity would most likely require an expanded distribution system. If current infrastructure could deliver additional recycled water, then recycled water is one of the least expensive options for increasing GWD supplies. If additional infrastructure and capital costs were required, the cost of delivering additional recycled water would be increased.

11.1.4.2 Recycled Water Reliability

Recycled water has very good delivery reliability because the amount of wastewater flowing into the Goleta Sanitary District even in severe drought conditions exceeds the recycled water demand.

11.1.4.3 Recycled Water Costs

Recycled water currently costs $707 per acre-foot when fixed costs are distributed across the 3,000 acre-feet per year of capacity. If the fixed costs are distributed across the current deliveries of about 1,000 AFY, the variable and fixed costs are $1,821 per acre-foot. Fixed and variable costs are illustrated in Figure 11-7 through Figure 11-9. It is important to note, however, that the variable cost of $150 per acre-foot makes it one of the least expensive sources

of additional supply because most of the fixed costs for treating another 2,000 acre-feet per year are already being paid.

Supply Source	Annual Allocation, Entitlement, or Water Right (AFY)	Fixed Costs (per AF)	Variable Costs (per AF)	Constraints	Reliability (% of Full Supply)
Cachuma Potable[5]	8,622	$739	$67	None	97%
Cachuma – Goleta West Conduit	700	$320	$22	None	97%
Cachuma – Spill Water to Customers[6]	875	$0	$67	None; Irregular Reliability	N/A
Cachuma – Spill Water to Injection, Later Extraction[7]	296	$0	$177	280 AF/month	N/A
Groundwater[8]	2,350	$266	$110	300 AF/month SAFE	100%/92%
State Water – Table A[9]	3,500	$1,774	$355	4,500 AFY Pipeline	60%
State Water – ID#1 Exchange[10]	1,000	$1,774	$234	Included above	60%
Recycled Water[11]	3,000	$557	$150	Only 1,000 AFY demand	100%

Table 11-1. Summary of all sources of GWD water supply, including costs, constraints, and reliability. Availability of these sources varies annually, and is regularly assessed by the District throughout any given year. Additionally, the table does not reflect total system losses, which are approximately 6%. Costs were developed by T. Bunosky, GWD.

11.2 Critical Supply Components

There are several critical supply components that affect the reliability of GWD's water supplies. These include: 1) Cachuma supplies in a severe drought; 2) State Water availability during droughts or emergencies; 3) GWD capacity in the Coastal Aqueduct of the State Water Project; 4) restrictions on timing of use of groundwater; and 5) treatment/pumping limitations.

[5] Reliability is percent of full entitlement available over 86 years of WSMP Model.
[6] Annual amount is average over 86 years of WSMP Model. If demand increases, this number will also increase.
[7] Amount is average over 86 years of WSMP Model. Constraint is treatment capacity for spill water.
[8] Reliability reflects that groundwater right is always available over 86 years of WSMP Model, but SAFE requires storage but no pumping in some years.
[9] 4,500 AFY is GWD's portion of the Coastal Aqueduct. Fixed costs spread over 4,500 AFY of reliable supply and aqueduct capacity.
[10] Amount is average since State Water was first delivered.
[11] Amount is current capacity. Only 1,000 AFY of current customers. Fixed cost calculated on 3,000 AFY of capacity.

11.2.1 Cachuma Reliability

Historically, Cachuma Reservoir has been a reliable source of water for GWD. In the 1986-92 drought, Cachuma water deliveries were only reduced by 40% during the last year of the drought. However, another year of drought would have significantly stressed the Cachuma supply, with plans to pump water from the reservoir because reservoir levels would likely have dropped below the intakes for normal gravity flow from the reservoir. This would have had a large impact on GWD's water supplies. To determine the potential impact to GWD's supplies of such an occurrence, the WSMP modeling included two scenarios (current and future demand) in which the 1986-92 drought was extended for two extra years and Cachuma deliveries were reduced by as much as 80% at the end of this extended period (scenarios #2c and #4).

11.2.2 State Water Reliability

State Water reliability, discussed in Section 6.1.3.2, is a concern for all State Water customers. To determine the effect on GWD from the highly-variable annual deliveries, all scenarios in the WSMP modeling used the year-by-year current reliability modeling by the State Water project. In addition, future demand scenarios used the State Project's year-by-year future reliability modeling results.

11.2.3 CCWA Storage Bank

The CCWA Bank in San Luis Reservoir is subject to a "spill" when DWR displaces the storage with its own water. This is likely to happen in 2011, when early-winter rains and snowmelt caused DWR to move water out of its Sierra reservoirs to ensure that there was adequate space for flood control and to maximize runoff capture if the Sierra reservoirs spilled. Thus, the CCWA Bank, which has a very positive effect on GWD reliability, has uncertain reliability.

11.2.4 GWD Capacity in Coastal Aqueduct

GWD purposely acquired capacity in the Coastal Aqueduct (4,500 acre-feet per year) that was less than its full State Water allocation (7,450 acre-feet per year). This was done because the average reliability of the State Project is significantly less than 100% of allocation (and is continuing to decline). The WSMP modeling used the aqueduct capacity as the limiting amount of State Water that GWD could receive in any year. The effect of this limitation was evaluated in the modeling and is discussed in Chapters 7 and 8.

11.2.5 Groundwater Reliability

The SAFE Ordinance was enacted to ensure that there would be adequate groundwater supplies during a drought to supplement reduced Cachuma and State Water deliveries. SAFE requires that pumping of groundwater below 1972 levels only occurs when Cachuma supplies are reduced – if State Water supplies are reduced but Cachuma supplies are not, groundwater pumping of the Drought Buffer is not allowed. The WSMP modeling examined the effects of the SAFE Ordinance over the modeling period, with the perspective both from building an adequate drought buffer and from subsequent pumping of that drought buffer. The results of the modeling are discussed in Chapters 7 and 8.

11.2.6 Facilities Limitations

There are necessary limitations on water production and treatment facilities within GWD – overbuilding of facilities is a waste of money. However, it is also important to ensure that these limitations do not adversely impact water supply reliability. Facilities limitations that could affect reliability include: 1) groundwater well capacity during drought periods of increased pumping; 2) groundwater well capacity when large amounts of water are available during a Cachuma spill event; 3) capacity to treat the available Cachuma spill water prior to injection; and 4) GWD's share of Coastal Aqueduct capacity.

The WSMP modeling uses current facility capacities to determine if they are limiting factors in optimizing the use of the various water supplies. Many of the modeling scenarios also increase those capacities to determine the effect on water availability and on cost.

11.3 Historical Priorities for Use of Supplies

GWD has varied its priorities in the use of its various supplies over time, partly related to drought conditions and partly related to the purchase of State Water in the 1990s. This history of water use is discussed briefly in Section 11.1 and illustrated in Figure 11-1. Prior to the importation of State Water, groundwater was relied on heavily during drought periods, resulting in historical low groundwater elevations in the basin. Following the importation of State Water, the Wright Judgment, and the passage of the SAFE Ordinance, groundwater pumping was reduced or eliminated in many years. This allowed the groundwater basin to refill to well above 1972 groundwater elevations. Now that refilling of the basin has been achieved, previous management strategies are no longer workable – groundwater should largely be preserved for drought protection, but if groundwater is allowed to rise too high, flooding and other adverse effects could occur. Thus, a new, balanced approach for using State Water and groundwater is necessary.

11.4 Reliability of Historical Supply Strategies

The reliability of GWD's current water supplies under historical methods of operation was evaluated using the WSMP (see Section 5.3 for description of model and model scenarios). In these model runs, GWD's monthly surface water supplies were predicted using Santa Ynez River historic hydrology and California Department of Water Resources' year-by-year analysis of State Water availability.

The model scenarios that evaluated historical methods of operation all have one strategy as their lynchpin – Cachuma water sources are used first because they are the cheapest sources of water and unused Cachuma entitlement is subject to spillage an average of once every three years. At today's level of water supply demand, all the scenarios below maintain average groundwater elevations above 1972 levels. The results of the model runs include:

Scenario #1a – Similar to operations since State Water arrived, with preferential use of State Water before using groundwater; no CCWA bank: In this scenario, demand exceeds supply in 30 of the 86 model years, although shortages don't exceed 20% of demand except in two years (Table 11-2). These annual shortages are caused by varying combinations of shortage of supply in any year (primarily State Water), restrictions on pumping groundwater by SAFE, and insufficient groundwater pumping capacity to meet

demand. Melded costs of supply (variable costs only) over the 86-year model period are $114 per acre-foot, one of the least expensive options.

Scenario #1 – Same as #1a, but with CCWA Bank: This scenario is identical to scenario #1a, except the unused State Water that CCWA banks in San Luis Reservoir is also part of the supply. The CCWA Bank improves the reliability of GWD's supplies, but overall supply costs (variable costs) rise to $127 per acre-foot (Table 11-2).

Scenario #1c – Similar to operations prior to arrival of State Water, with groundwater playing an important role in average precipitation/demand-year supplies. The obvious exception to historical operations is that State Water is now available as a back-up supply; no CCWA bank: The reliability of the supply improves by using groundwater preferentially before State Water (Table 11-2). Although this appears at first to be counter-intuitive, groundwater is used in more months of the year so that pumping capacity doesn't play as big a role in supply shortages; State Water is in reserve and its delivery limitations are not as restrictive. Because groundwater is not as expensive as State Water, overall variable costs of supply are reduced by a small amount.

Scenario #1b – Same as #1c, but with CCWA Bank: The CCWA Bank improves reliability over scenario #1c, but the costs of the extra State Water used through the bank raises the variable costs of supply somewhat (Table 11-2).

Scenario	A. Number of Years of Any Shortage (86 Model Years)	B. Years When Shortage>20% (86 Model Years)	C. Max Shortage (% of Supply)	D. Deepest Groundwater Elevation	E. Variable Cost Per Acre-Foot (All Supplies)
#1a (GW last, no CCWA Bank)	30	2	22%	-13 ft	$114
#1 (GW last, CCWA Bank)	19	1	22%	-11 ft	$127
#1c (SWP last, no CCWA Bank)	20	1	20%	-18 ft	$111
#1b (SWP last, CCWA Bank)	12	0	17%	-19 ft	$124

Table 11-2. WSMP results for scenarios that two historical modes of using groundwater – using groundwater as part of the regular supply (#1c and #1b) or using it only when there is insufficient supply from all other sources (#1a and #1). Column A lists the number of hydrologic years within the 86-year period of the model when supplies do not meet demand. Column B lists the number of years when shortages exceed 20% of average demand. Column C lists the percentage of supply shortfall (from average demand) in the worse drought year in the model. Column D is the deepest average groundwater elevation reached in the basin during pumping of the Drought Buffer. Column E is the variable cost per acre-foot of all supplies during the 86 years of the Model.

11.5 Reliability in Extreme Drought

The WSMP, which uses historical hydrology from 1922 to 2007, includes the largest droughts of the last century. This period is also used y the California Department of Water Resources in evaluating the response of the State Water Project to drought conditions. It is implicit in such evaluations that this period does not replicate the worse drought conditions that have ever occurred. However, it is not possible to reliably model the interplay of GWD's diverse set of water sources for weather conditions that may have occurred prior to historical records of hydrology.

However, the last drought (1986-1991) on the South Coast does give some guidance to what could happen in a longer drought. If not for the 1991 "March miracle" rains, there would likely have been at least another year of drought with Cachuma Reservoir levels low enough to cause significant cutbacks in water deliveries. Therefore, Scenario #1d-drght extends this drought for another two years, reducing Cachuma deliveries progressively to only 20% of entitlement. The results of this analysis indicate that with current capacities and water sources, there would be up to a 26% shortfall in supplies in the last year of this hypothetical extended drought. For perspective, GWD customers actually conserved as much as 50% of water demand during the 1986-1991 drought.

12 Technical Appendix – Optimizing GWD Water Supplies

Optimizing water supplies involves finding the appropriate balance of cost and reliability. Usually the tradeoff is that more reliability costs more. For this WSMP, both individual water sources and combinations of sources were analyzed. The combinations always prescribed using Cachuma sources first because of their vulnerability to reservoir spillage. Thus, the analysis of the optimum combination of water sources varied priorities of State Water and groundwater use, increased treatment and well capacities, and formulated operating rules.

12.1 Cachuma Supplies

Cachuma Reservoir is currently being operated using a rule curve that was optimized using the existing Santa Ynez River Model. In this study, this rule curve was used with the addition of modeled use of spill water and carry-over water.

Cachuma spill water (water that is delivered to GWD during the time that Cachuma is spilling) is essentially "free" water – that is, it is not debited from GWD's annual allocation. However, spills occur during very wet months, when GWD demand is low. Currently, GWD uses spill water to meet all customer demand plus injects a portion of it in the groundwater basin. The amount of water that can be injected in the short times that Cachuma spills (see Figure 11-3 and Figure 11-4) is limited by treatment capacity for the water before injection (the secondary constraint) and the capacity of wells to inject water (the primary constraint). Although this spill water is "free", the water incurs treatment costs on the way to injection and extraction/treatment costs when it is subsequently pumped and delivered to customers. Its variable cost of $177 per acre-foot makes it the most expensive source of water besides State Water. Section 12.1.2 discusses the results of increasing treatment capacity so that additional spill water can be injected.

GWD accrues carry-over water when GWD's Cachuma entitlement is not completely used in any Cachuma water year, most likely when there is a spill during which the spill water used is not debited against GWD's entitlement. Carry-over water is at risk if left in the reservoir – carry-over water is the first to spill in a subsequent spill event. Thus, it is imperative to use carry-over water as soon as it is accrued.

12.1.1 Priority of Use

Cachuma water in general should have the highest priority of use because of its lower variable costs and because of the danger of spilling unused water on average every three years. Thus, Cachuma sources should be used first each year to satisfy all customer demand until the annual entitlement plus any carry-over water is exhausted (recycled water has its own customer base and should always be delivered on a regular schedule). If there is carry-over water from the previous year, COMB considers that the first water used in the new water year is carry-over. WSMP modeling indicates that carry-over water will not be lost to a spill if the strategy of exhausting Cachuma supplies first is followed.

However, there is an unintended consequence of using Cachuma water first during the periods when Cachuma deliveries have been reduced because of drought. When the reduced Cachuma deliveries are exhausted part way through the year, groundwater must be pumped instead. The

amount of groundwater that can be supplied is dependent upon well capacity – at current pumping capacity, groundwater cannot make up for the Cachuma water that is no longer available. Increasing pumping capacity is an option evaluated in this WSMP.

An alternative to increasing well capacity is to pump the wells for a longer period of time during a year when groundwater is needed. The only way to do this is to modify the "Cachuma always first" strategy. This alternative strategy is discussed in detail in section 12.2.2.

Another exception to the "Cachuma always first" strategy may be made for unusual circumstances. For instance, runoff from the area burned by the large Zaca fire in the Cachuma watershed brought high-TOC water into the Reservoir, requiring GWD to pump significant amounts of groundwater in 2008 to maintain acceptable water quality.

12.1.2 Spill Water

Spill water from Cachuma is GWD's highest priority supply. Among the Cachuma supplies, spill water does not have an allocation and does not count against GWD's annual Cachuma entitlement. The effective limit on how much spill water that GWD can use is GWD treatment capacity – Cachuma water must be treated prior to either delivery to customers or injected into the groundwater basin. Although this water is "free," as discussed above, it is not inexpensive water. As part of the WSMP modeling, treatment/injection capacity was increased to determine the cost and effectiveness of such a strategy. Results are shown below.

Scenario #2b-treat –Scenario #2b (optimized groundwater/State Water priority, CCWA bank) modified by increasing GWD pumping capacity from 300 to 450 acre-feet per month and treatment capacity for treating spill water is increased (Table 12-1): By increasing pumping and treatment capacity, reliability is improved, with the shortfall during the worst year of drought not exceeding 3% of supply. However, per acre-foot costs of supply increases $227.

Scenario	Years with Any Shortage (86 Model Years)	Years When Shortage>20% (86 Model Years)	Maximum Shortage (% of Supply)	Deepest Groundwater Elevation	Variable Cost Per Acre-Foot (All Supplies)
#2b-treat (GW/SWP optimized, CCWA Bank, 450 AF/mo treatment/well capac)	11	0	3%	-57 ft	$227

Table 12-1. WSMP results for a scenario that increases GWD's treatment/well capacity, thus allowing increased injection of Cachuma spill water. See Table 11-2 for explanation of columns.

12.1.3 Carry-over Water

As discussed above, carry-over water should be the first non-spill water used. Because COMB counts carry-over as the first water used in a new water year, carry-over water will be effectively used if the overall priority of using Cachuma water before any other source is maintained.

12.2 Groundwater Supplies

Groundwater is important to GWD both as a source of average-year supply and as a drought buffer. As discussed in Section 11.4 and summarized in Table 11-2, the reliability of GWD's water supply is highest and the costs the least when groundwater is used first before State Water. The WSMP scenarios that gave these results used current pumping capacity and current water demand. This caveat is important, because groundwater levels remained above 1972 levels even when groundwater pumping was prioritized above State Water use. At higher pumping rates and water demand, this might not continue to be true.

The modeling discussed previously used only end-members in a spectrum of combinations of water supply priorities. To examine optimum priorities, additional WSMP modeling scenarios were developed. These included varying both water supply priorities and groundwater pumping capacities.

12.2.1 Additional Well Capacity

To determine the effect of increasing GWD's groundwater pumping capacity, two previous WSMP scenarios were modified only by adding pumping capability. Increasing pumping capacity has a fixed cost of approximately $266 per acre-foot of groundwater produced, which is integrated into the overall costs in the model scenarios.

Scenario #2-450 –Scenario #1 (preferential use of State Water before using groundwater, CCWA bank) modified by increasing GWD pumping capacity from 300 to 450 acre-feet per month (Table 12-2): By increasing pumping capacity, reliability is improved. There is a slight decrease in the number of years that have a supply shortfall, with the shortfall never exceeding 19% of supply. Per acre-foot costs of supply increase from $127 to $157.

Scenario #2-900 –Scenario #1 (preferential use of State Water before using groundwater, CCWA bank) modified by increasing GWD pumping capacity from 300 to 900 acre-feet per month (Table 12-2): By increasing pumping capacity even more, reliability is also improved. There is a slight decrease in the number of years that have a supply shortfall, with the shortfall never exceeding 10% of supply. Per acre-foot costs of supply increase substantially from $127 to $255.

Scenario #2a-450 –Scenario #1b (preferential use of groundwater before using State Water, CCWA bank) modified by increasing GWD pumping capacity from 300 to 450 acre-feet per month (Table 12-2): By increasing pumping capacity, reliability is also improved in this scenario. The number of years with a supply shortfall decreases from 13 to 7 years, with the shortfall never exceeding 13% of supply. During droughts, the Drought Buffer of groundwater is barely tapped into. Per acre-foot costs of supply increase from $124 to $153.

Scenario #2a-900 –Scenario #1b (preferential use of groundwater before using State Water, CCWA bank) modified by increasing GWD pumping capacity from 300 to 900 acre-feet per month (Table 12-2): By increasing pumping capacity, reliability is improved in this scenario. The number of years with a supply shortfall decreases from 13 to 3 years, with the shortfall never exceeding 7% of supply. During droughts, about one-half of the

Drought Buffer of groundwater is used. Per acre-foot costs of supply increase substantially from $124 to $246.

Scenario	Years with Any Shortage (86 Model Years)	Years When Shortage>20% (86 Model Years)	Maximum Shortage (% of Supply)	Deepest Groundwater Elevation	Variable Cost Per Acre-Foot (All Supplies)
#2-450 (GW last, CCWA Bank, 450 AF/mo well capac)	18	0	19%	-10 ft	$157
#2-900 (GW last, CCWA Bank, 900 AF/mo well capac)	18	0	10%	-24 ft	$255
#2a-450 (SWP last, CCWA Bank, 450 AF/mo well capac)	6	0	13%	-32 ft	$153
#2a-900 (SWP last, CCWA Bank, 900 AF/mo well capac)	3	0	7%	-52 ft	$246

Table 12-2. WSMP results for scenarios that increase GWD's groundwater pumping capacity. See Table 11-2 for explanation of columns.

The tradeoff between increased reliability and increased cost is very clear in these scenarios. If GWD's target for reliability is to limit shortfalls of supply during droughts to 20%or less, then additional pumping capacity may not be needed at current levels of water demand. For potential increased levels of demand in the future, further evaluation of pumping capacity is discussed in Section 13.4.

12.2.2 Priority of Use

WSMP modeling results discussed earlier suggest that the strategy of using groundwater before State Water (within the rules of SAFE) enhances reliability and is less expensive than prioritizing State Water above groundwater (e.g., Table 11-2 and Table 12-2). It is clear why using groundwater before State Water is less expensive – it is the least expensive source of water for GWD besides Cachuma water. It takes a careful examination of the monthly results from the WSMP to understand why reliability is also enhanced by using groundwater before State Water. There are two factors that emerge from the modeling that favor groundwater use first:

1) **Pumping Capacity**: When State Water is used first and is exhausted (this occurs during periods of curtailed delivery of State Water), groundwater can only fill in at the rate of about 300 acre-feet per month. This rate is insufficient to make up the monthly supply shortfall. However, when groundwater is used first, groundwater pumping is spread across a longer period during the year and pumping capacity doesn't play as big a role in supply shortfalls. As pumping capacity is increased, the difference between the two strategies narrows (Table 12-2).

2) **CCWA Bank**: When groundwater is used before State Water, there is an accrual of unused State Water in the CCWA Bank. This water provides a readily-available cushion during drier years and can be delivered at higher monthly rates than groundwater can.

There are a couple of potential disadvantages to using groundwater before State Water. With that priority, the Drought Buffer is partially depleted during dry years; however, that is what it is

designed to do. The Drought Buffer is quickly refilled with either strategy. Groundwater is also generally of lesser water quality than State Water – not for health-related issues but for taste and odor considerations.

As discussed briefly in Section 12.1.1, the strategy of always using Cachuma water first limits the quantity of groundwater that can be pumped in any year – pumps are only turned on after GWD's Cachuma entitlement is depleted for the year. Thus, expensive expansion of pumping capacity is required. However, if the "Cachuma first" strategy is modified slightly, the pumping capacity bottleneck can be by-passed. This by-pass can be accomplished by changing the "Cachuma first" strategy to a shared priority with groundwater during droughts.

In the modified "hybrid" priority strategy, during any month when Cachuma deliveries have been scaled back because of drought conditions, groundwater is pumped at capacity to partially offset some of the Cachuma deliveries. In this manner, Cachuma supplies last somewhat longer during these drought years and the amount of groundwater pumped during a year can be more than doubled.

Another portion of the hybrid water supply strategy deals with the priority of use of groundwater and State Water. In the hybrid strategy, State Water is used first when groundwater elevations are below 1972 levels (to preserve the Drought Buffer) and groundwater is used first when groundwater elevations are above 1972 levels (to keep costs lower and to prevent the groundwater basin from over-filling). There are two exceptions to this general rule: 1) if Cachuma deliveries are reduced, groundwater has a priority equal to Cachuma water (and higher than State Water); and 2) if there is water in the CCWA Bank, it is used before pumping groundwater (so that it isn't lost).

This overall hybrid strategy was simulated in the WSMP using both current pumping capacity (Scenario #1d) and increased pumping capacity (Scenarios #2b), with results compared to the strategy previously evaluated of using groundwater before State Water (Scenario #1b)(Table 12-3). The hybrid strategy reduces the magnitude of supply shortfalls by using more groundwater; additional pumping capacity reduces the magnitude of supply shortfalls further but is a more expensive option. If GWD's target for reliability is to limit shortfalls of supply during droughts to 20% or less, then additional pumping capacity would not be needed at current levels of water demand.

Scenario	Years with Any Shortage (86 Model Years)	Years When Shortage>20% (86 Model Years)	Maximum Shortage (% of Supply)	Deepest Groundwater Elevation	Variable Cost Per Acre-Foot (All Supplies)
#1b (GW before State Water)	12	0	17%	-19 ft	$124
#1d (Hybrid Strategy)	12	0	7%	-46 ft	$126
#2b-450 (Hybrid Strategy, 450 AF/mo well capac)	11	0	3%	-61 ft	$156

Table 12-3. WSMP results for the hybrid water supply strategy. Scenario #1d uses GWD's current pumping capacity and Scenario #2b uses increased pumping capacity. Scenario #1b results shown for comparison. See Table 11-2 for explanation of columns.

12.2.3 Drought Buffer

At current levels of water demand, the Drought Buffer (groundwater levels between historical low elevations and 1972 elevation) is only partially utilized during drought periods. Two examples of groundwater levels calculated in the WSMP are indicated in Figure 12-1 and Figure 12-2. The beginning groundwater elevation for each run is arbitrarily set at the historical low groundwater elevation to determine how the Drought Buffer is renewed. In the two examples illustrated, if groundwater elevations had been set above 1972 levels, then they would have largely remained there through the 86 years of the model. Even when the 1986-1991 drought is extended by two years in Scenario #1b-drght (discussed in Section 11.5), the Drought Buffer is only partially used. However, the Drought Buffer is utilized considerably at higher levels of water demand (e.g., Section 13.5).

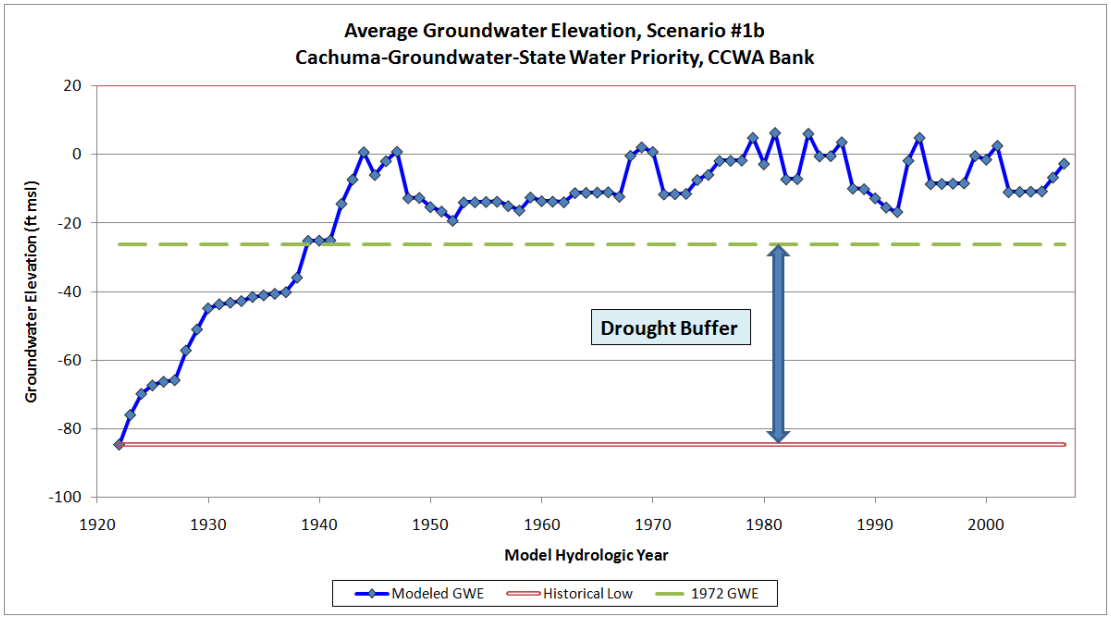

Figure 12-1. Groundwater elevations during the 86 years of hydrology in the WSMP for Scenario #1b (groundwater used before State Water). Year 1 of the model runs is always assigned the historical low groundwater elevation to see how the basin recovers from a depleted Drought Buffer.

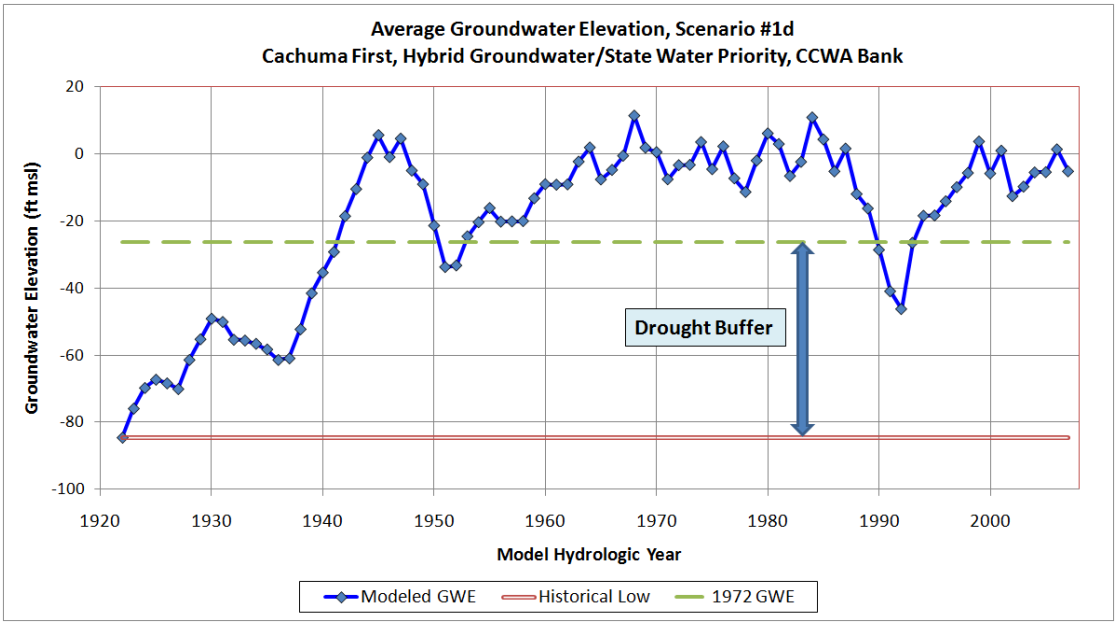

Figure 12-2. Groundwater elevations during the 86 years of hydrology in the WSMP for Scenario #1d (hybrid groundwater/State Water use). Year 1 of the model runs is always assigned the historical low groundwater elevation to see how the basin recovers from a depleted Drought Buffer.

12.3 State Water

State Water is GWD's most expensive source of water, but is key in the reliability of GWD's water sources. Without it in the last drought (1986-1991), groundwater was pumped down to historical low elevations. How to prioritize the use of State Water is discussed below. The CCWA Bank in San Luis Reservoir is very important to GWD during periods of water shortages; it is also discussed below.

12.3.1 Priority of Use

The relative priority of use of State Water and groundwater is discussed in Section 12.2.2. The hybrid groundwater/State Water operational scenario appears to be the best compromise of cost and reliability.

12.3.2 Banking

The current CCWA Bank of unused State Water in San Luis Reservoir is very important to GWD's water supply reliability (see Table 11-2 for illustration). The limit of storage in the Bank for GWD was set at 4,000 acre-feet for the WSMP. The Bank is currently operated in an informal mode – no formal agreements with DWR have yet been made. It is recommended that GWD share the results of the WSMP that indicate the importance of the Bank and work with CCWA to both formalize agreements on the Bank and increase the size of potential storage if possible.

12.4 Recycled Water

Currently, there is more recycled water treatment capacity than customers to take the water. Thus, for any increase in customers within the current delivery system, the cost of the water is

only the variable cost of $150 per acre-foot. This makes recycled water an attractive alternative for any expansion of service within the current delivery system – not only for cost but also for reliability (recycled water has less supply variable during dry periods). It is recommended that GWD keep the recycled option near the top of its list for both new and existing customers.

To deliver recycled water to the entire GWD service area, however, would require new capital outlay for transmission infrastructure – the feasibility of such an expansion would have to be looked at on its own merits.

12.5 Conjunctive Use of Surface Water and Groundwater

GWD's main opportunity for conjunctive use is injecting Cachuma spill water into the groundwater basin. GWD already injects spill water up to the limits of its injection capacity for Cachuma water. The option to expand this conjunctive use of spill water involves upgrading the capacity of current treatment/injection facilities. The problem with upgrading treatment facilities is that this extra capacity is only used during periods of spill (9% of all the months in the WSMP are spill months) and sits idle the rest of the time. Thus, new capital costs are spread over a relatively small amount of new water. This option is evaluated in Section 12.1.2 – it adds some reliability, but raises the melded variable costs of all supplies by 50%.

12.6 Reliability with Optimized Use of GWD's Water Supplies

The hybrid priority strategy was simulated by the WSMP using both the historical hydrology and the extended drought method discussed in Section 11.5. The results are shown in Table 12-4. Maximum supply shortages of 7% would be expected if weather patterns are similar to the 86-year hydrology period of the WSMP. Although supply shortages of up to 25% are expected in an extended drought with current pumping capacity, this is within the range of historical conservation by customers of GWD. If shortages are to be kept at or below 20% of supply in an extended drought, pumping capacity must be increased to 350 acre-feet per month at a relatively small cost increase (Table 12-4).

Scenario	Years with Any Shortage (86 Model Years)	Years When Shortage>20% (86 Model Years)	Maximum Shortage (% of Supply)	Deepest Groundwater Elevation	Variable Cost Per Acre-Foot (All Supplies)
Historical Hydrology					
#1d (Hybrid Strategy)	12	0	7%	-46 ft	$126
Extended Drought					
#1d-drght (Hybrid Strategy with extended drought)	14	1	25%	-46 ft	$127
#2c (Hybrid Strategy, 350 AF/mo well capac, extended drought)	12	0	14%	-47 ft	$137

Table 12-4. WSMP results for the hybrid strategy for use of groundwater and State Water with an extended drought. Scenario #1d uses GWD's current pumping capacity and Scenario #2c uses increased pumping capacity. See Table 11-2 for explanation of columns.

13 Technical Appendix – Future Reliability of Water Supplies

Although GWD's water supplies are sufficient to protect against drought conditions at current demand levels, both the SAFE Ordinance and regional planning agencies foresee a potential growth in population and water demand in the coming decades. Thus, it is imperative to determine whether water supplies also provide reliability at higher water demand levels.

13.1 Growth in Demand

The potential growth in population and perhaps water supply demand was analyzed using the following approaches:

1) Santa Barbara County Association of Governments (SBCAG, 2007) forecast the population of the City of Goleta to be 37,300 in 2030. This would be an 18% increase over the 2010 population, and a similar rate of growth is forecasted for the entire Santa Barbara County south coast. This assumed growth would result in a proportional rise in population and water demand across the District's entire service area would mean that GWD would potentially have a water demand of as much as 17,200 acre-feet per year in 2030 (within the restrictions of the SAFE Ordinance). However State-mandated conservation means that per capita water use and associated demand will be lower in the future. The guidelines currently available for calculating State-mandated water conservation targets allow several methods for determining the amount of conservation required by 2020[12]. One of these methods prescribes a specific target for potable water use per capita per day.

   Calculations using the SBCAG (2007) population growth rates and this per capita target result in a water demand of approximately 14,900 acre-feet per year in 2020 and 15,833 acre-feet per year in 2030 (see section 14.2 for explanation). These demand calculations will be further refined when the State finalizes its guidelines for the development of 2010 Urban Water Management Plans.

2) SAFE Ordinance – For each year that all other obligations for water delivery have been met, GWD may authorize new service connections equal to a maximum of 1% of the total potable water supply[13]. The requirements for new service connections have been met over the last decade, with authorized new service connections adding 567.80 acre-feet per year of demand since 1997. If authorization of new service connections were provided at the maximum rate of 1% per year of potable water supply, GWD water supply demand would be approximately 17,510 acre-feet per year in 2030[14]. Notably, this exceeds current estimates of State required demand levels; therefore, SAFE provides a theoretical upper limit for newly authorized demand.

3) In addition to newly authorized connections that are subject SAFE, approximately 850 acre feet of additional future water demand has already been authorized under District Permits, Water Service Agreements, Reclaimable Meters, and Measure T allotments,

[12] See Section 14.2 for more detail on demand calculations.
[13] GWD Ordinances No. 91-01 and 94-03.
[14] GWD water supply demand has averaged 14,600 acre-feet per year over the past 5 years.

which were primarily executed prior to the adoption of SAFE. These are commitments and entitlements that the District is required to serve, and are worth noting for long range resource planning purposes. This 850 acre-feet of demand is included in all 2030 WSMP model runs. See Section 14.2 for more detail.

Because the availability of GWD's water supply varies considerably by climatic conditions (see Figure 11-1 for annual variability), two conditions of water supply (average-year and drought) are evaluated in this section.

13.1.1 Average Conditions

During average years, there is a slight excess of water supply at current water demand levels (Figure 13-1). When water demand increases to projected 2030 levels (including the 850 acre-feet per year of previously-authorized new service connections), water demand and water supply are about the same (Figure 13-1). A similar analysis for drought conditions follows.

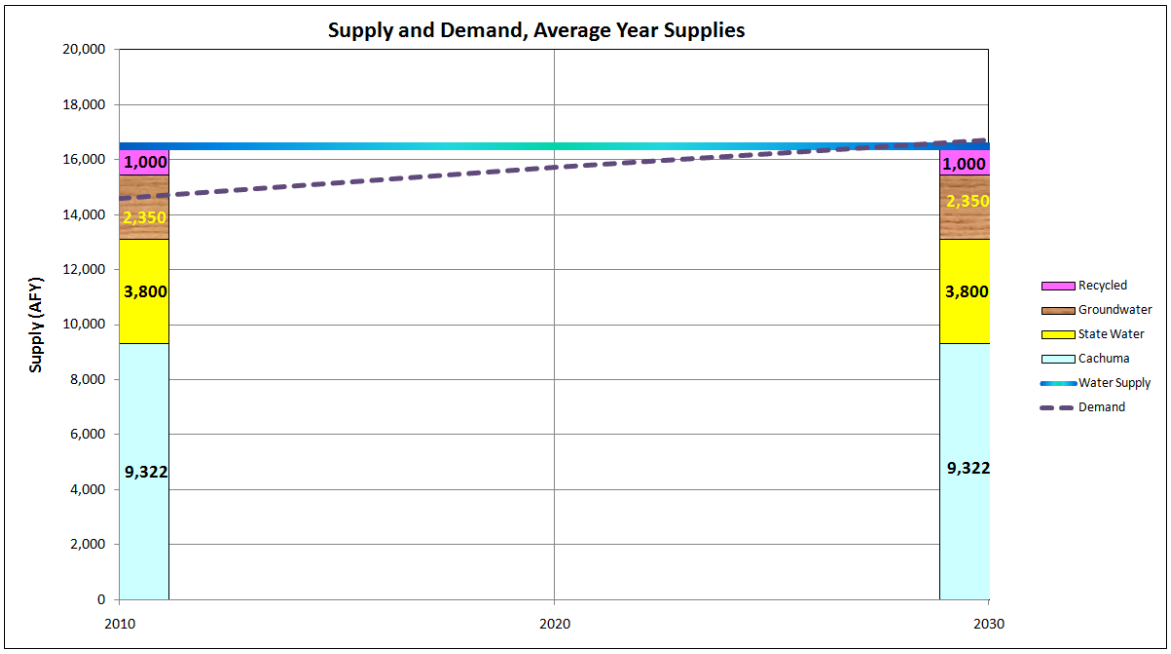

Figure 13-1. Water supplies in average years are indicated by supply sources for 2010 and 2030[15]. The SAFE Ordinance requires that for planning purposes the State Water supply must be considered to be 3,800 acre-feet per year; the WSMP Model calculates that 4,025 acre-feet per year would be available at 2010 demand levels and 3,680 acre-feet per year would be available at 2030 demand levels. Groundwater supply is the Wright Judgment water right. Dashed line represents GWD projected demand including the conservation required in the future by the State.

13.1.2 Drought Conditions

For the analysis of GWD water supplies in a drought, the worst five-years of the late 1980s to early 1990s were used. The supplies indicated in Figure 13-2 are the average of the five years from the WSMP scenarios for water demand levels in 2010 (actual) and 2030 (projected). Figure 13-2 indicates that there is about the same amount of drought supply as there is demand at

[15] Recycled water supply is kept constant in the calculations. However, there is an additional 2,000 acre-feet per year of unused recycled capacity if additional customers are identified and additional pipelines are constructed.

current water demand, but that at 2030 projected water demand there is a drought shortfall of about 2,600 acre-feet per year of supply.

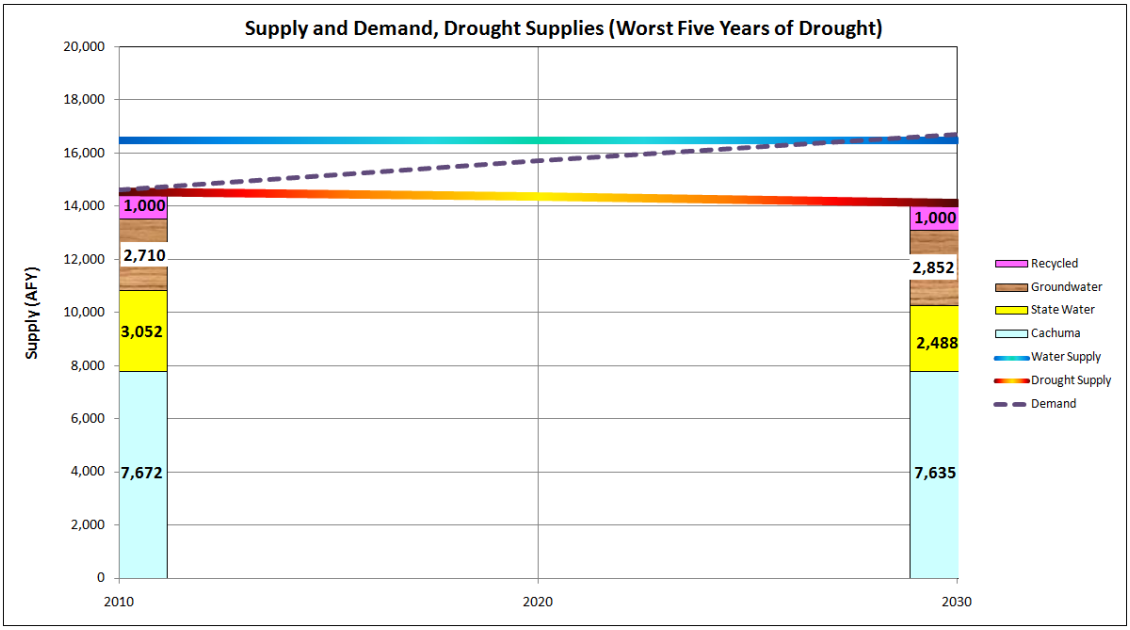

Figure 13-2. Drought water supplies calculated from the WSMP Model are indicated by individual supply sources for 2010 and 2030[16]. Supplies are based on average availability during the five worst years in the last drought (late 1980s to early 1990s) from the WSMP models for 2010 and 2030 water demand. State Water supply includes water from the CCWA Bank. Groundwater supply assumes no increase in current pumping capacity. Dashed line represents GWD projected demand including the conservation required in the future by the State.

13.2 Future State Water Reliability

As discussed in Section 11.1.3, delivery of water from the State Water Project varies with climatic conditions in northern California and environmental/regulatory issues in the Sacramento Delta. The California Department of Water Resources (DWR) has calculated probabilities of water delivery over a range of climatic conditions and environmental constraints for the year 2029. DWR has been updating the reliability studies every two years or so, the last being in 2009. The WSMP modeling used these supply projections. DWR considers that the average reliability of State Water in 2029 would be 60% of Table A allocation, with a low of 11% during the driest year to a high of 97% during the wettest year (DWR, 2010). The DWR modeling suggests that between 60% and 70% of Table A water can be delivered about half (50%) of the time (Figure 5-3).

Projecting future conditions of the water supply is difficult, particularly in the Sacramento Delta where State Water is currently pumped. DWR considered a number of issues in its reliability study: 1) climate change and sea level rise; 2) Delta levee failure; 3) disruptions caused by earthquakes; 4) disruptions caused by floods; and 5) environmental-judicial concerns. Although DWR took its best estimate of the effects of these concerns given what is known at

[16] Recycled water supply is kept constant in the calculations. However, there is an additional 2,000 acre-feet per year of unused recycled capacity if additional customers are identified and additional pipelines are constructed.

present, it is likely that as these issues develop further, projections of State Water reliability are also likely to change.

13.3 Effects of Climate Change

Climate change may have differing effects on water supplies derived from winter snow pack (State Water), local winter rain storms (Cachuma), or groundwater. Modeling of long-term climate change is problematic at best. There is general agreement that California will be warmer, which has several potential impacts. The effect on precipitation patterns is not entirely clear. The U.S. Global Change Research Program (2009) predicts lower rainfall and longer droughts in the southwestern United States.

DWR (2009) believes that changes have already been observed in California's climate over the past 100 years. According to DWR, air temperatures have risen about 1 degree Fahrenheit with the greatest changes occurring at night and at higher elevations. Early spring snowpack in the Sierra Nevada has decreased about 10% resulting in a significant loss of water storage, and sea levels along the California coast have risen by about 7 inches. DWR believes that the climate is expected to continue changing in the future, with mean temperatures predicted to increase by 1.5 degrees to 5.0 degrees Fahrenheit by mid-century and 3.5 degrees to 11 degrees by the end of the century, and future sea level rise estimated to range from 4 to 16 inches by mid-century and 7 to 55 inches by the end of the century (DWR, 2009).

Climate factors that could affect GWD's water supply reliability include:

State Water – More of the winter precipitation in the Sierra Nevada will fall as rain instead of snow. Because Sierran dams are partially operated as flood control facilities, some of the winter rain runoff will have to be released from the dams to preserve storage space for later storm events, effectively reducing winter storm capture and water available for the State Water Project. Higher sea levels could threaten the existing levee system in the Delta. Salinity intrusion into the Delta could also require increased releases of freshwater from upstream reservoirs to maintain compliance with water quality standards.

Cachuma Reservoir – Ongoing studies by the California Department of Water Resources (e.g., DWR, 2006) indicate that rainfall in southern California will not change significantly, with climate modeling indicating that precipitation will increase in wet years in the Sierra, but decrease in dry years. This modeling suggests that these effects will likely be less than a 10% swing in precipitation in either direction. However, periodic drought periods may be longer in duration affecting runoff into Cachuma Reservoir.

Groundwater – Periodic drought periods may be longer in duration, affecting recharge to the groundwater basin. The projected sea level rise discussed above would potentially allow the sea to encroach farther up the Goleta Slough and extend the estuary over portions of the West and Central subbasins. This encroachment would likely occur over the portions of the basin that are under confined conditions – that is, there are low-permeability sediments that separate the estuary at the surface from the drinking water aquifers at depth. Thus, it is unlikely that this encroachment would allow saline water into the aquifers. However, such encroachment would require additional monitoring wells to be installed to ensure that downward percolation of saline waters does not occur.

Preventing the encroachment of the ocean onto coastal plains around the world will be a major effort – it will be expensive and disruptive. It is not known at this time if the Goleta Slough area would be protected from encroachment in the future as part of this global effort.

Infrastructure – If seawater was to encroach on the Goleta Slough, distribution pipes such as the recycled water line at the slough would potentially have to be relocated.

Demand – Higher temperatures could increase evapotranspiration (temperature is one of the factors in evapotranspiration), causing an increase in outside water use and crop irrigation.

13.4 Enhancements for Greater Reliability

There are some actions that GWD could take to improve its future water supply reliability. These actions are primarily infrastructure capacity increases. Because these actions are relatively expensive, costs must be balanced against the improvement in reliability; this analysis is presented in the following sections.

13.4.1 Groundwater Pumping Capacity

The current groundwater pumping capacity of 300 acre-feet per month caused supply shortages in some years with current water supply demand. As demand potentially increases in the future, this pumping capacity limitation becomes a larger factor in shortfalls of supply.

A series of WSMP runs were conducted with progressive steps of increasing demand by another 500 acre-feet per year in each run, starting at 500 acre-feet per year higher than current average demand (Table 13-1). For each step in increasing demand, the Model was run first using current pumping capacity and then again with increased pumping capacity if the supply shortfall exceeded 20% of supply.

As indicated in Table 13-1, additional pumping capacity is not required until there is an additional 2,000 acre-feet of increased demand. At that demand level, no more than an additional 100 acre-feet per month of capacity is needed – the maximum supply shortage cannot be reduced further because the SAFE Ordinance does not allow groundwater pumping in the situation where Cachuma is at full deliveries when State Water deliveries are significantly reduced. The variable costs of all supplies with and without the added capacity are also shown in the table. At the higher pumping capacity and demand, the Drought Buffer is only partially utilized (Figure 13-3). An increase in demand of 2,000 acre-feet per year does not reach the full projected 2030 demand. The 2030 demand analysis is included in sections 13.5 and 14.2.

Scenario	Years with Any Shortage (86 Model Years)	Years When Shortage >20% (86 Model Years)	Maximum Shortage (% of Supply)	Deepest Groundwater Elevation	Variable Cost Per Acre-Foot (All Supplies)
Add 500 AFY of Demand					
Current pumping capacity	33	0	12%	-40 ft	$130
Add 1,000 AFY of Demand					
Current pumping capacity	51	0	15%	-40 ft	$130
Add 1,500 AFY of Demand					
Current pumping capacity	49	0	19%	-43 ft	$129
Add 2,000 AFY of Demand					
Current pumping capacity	57	4	27%	-44 ft	$128
Add 100 AF/mo of pumping capacity (400 total)	53	2	23%	-52 ft	$148

Table 13-1. WSMP results for the hybrid strategy (Scenario #1d) in increasing steps of potential additional water supply demand within GWD in the future. Each increment of 500 acre-feet per year of demand is analyzed using current well capacity and additional well capacity if supply shortfalls exceed 20% in any year. See Table 11-2 for explanation of columns.

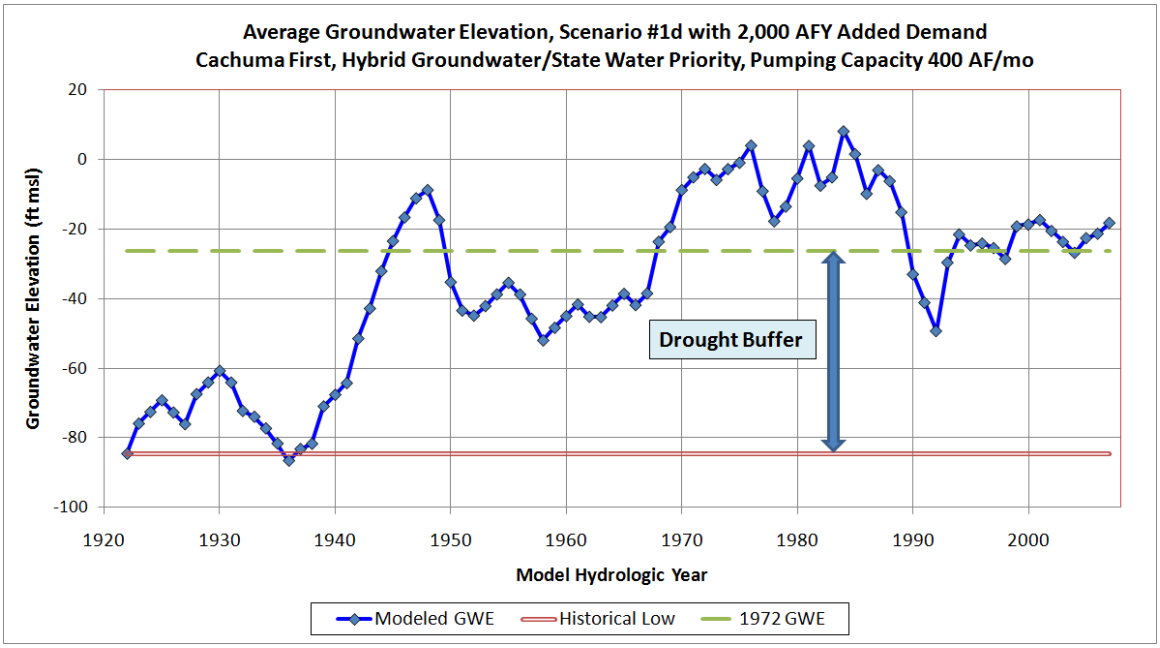

Figure 13-3. Groundwater elevations from WSMP for model run with 2,000 acre-feet of additional demand and increased groundwater pumping capacity to 400 acre-feet per month. Starting groundwater elevations in the Model are set to historical low elevation in all model runs; the drought in the 1930s delayed recovery of modeled water levels in the basin.

13.4.2 Treatment Capacity

The capacity of GWD treatment facilities can be a limiting factor in how much Cachuma water can be injected during a spill event (high turbidity in the storm water can reduce treatment capacity). Raw Cachuma water must be treated prior to injection to meet health requirements and to ensure that the wells used for injection do not get plugged with sediment and organic material. This additional treatment capacity is expensive because it is not needed except during the 9% of the months that Cachuma spills in the Santa Ynez River and WSMP models. This option is evaluated in Section 12.1.2 – it adds some reliability, but raises the melded variable costs of all supplies by 50%.

13.4.3 Cooperation with Other Agencies

GWD is a member agency of both COMB (for Cachuma water) and CCWA (for State Water). The joint agency strategy that is likely to provide the most reliability for GWD's water supply in the future is storage of unused State Water by CCWA somewhere south of the Sacramento Delta. As discussed in Section 6, the current CCWA Bank has increased GWD's supply reliability – a further expansion of this bank in San Luis Reservoir or a possible CCWA groundwater bank along the Coastal Aqueduct would further GWD's supply reliability.

13.5 Evaluation of Future Supply Reliability

The projected 2030 demand (including authorized future demand) discussed in Section 13.1 is 16,705 acre-feet per year. This is over 2,000 acre-feet per year higher than current deliveries. The WSMP Model was used to evaluate GWD's supply reliability at this higher rate of demand (Table 13-2). The model was run for current and increased well capacity for historical hydrology and for increased well capacity for the extended drought hydrology discussed in Section 11.5. As pumping capacity was increased with increasing demand, the cost of water also increased (Table 13-2).

At current well capacity, there were two model years where there was a shortage of more than 20% of supply, with almost three-quarters of the years having some amount of supply shortfall. At the increased well capacity of 425 acre-feet per month, there was a slight improvement in water supply reliability (one year over 20% shortfall), but increasing pumping capacity beyond 425 acre-feet per month did not improve reliability. This anomaly was caused because the shortage occurred in years when Cachuma deliveries were not reduced (thus pumping wasn't allowed by SAFE when groundwater elevations were below 1972 levels as well), but State Water deliveries were significantly reduced. This potential interaction with SAFE was discussed in GWD's Groundwater Management Plan (GWD, 2010), but apparently is not a problem until demand is higher than current levels. A similar anomaly occurred when the extended drought scenario was run – there was no amount of added pumping capacity that allowed supply shortage to remain at 20% or below because of the interaction with SAFE.

Scenario	Years with Any Shortage (86 Model Years)	Years When Shortage>20% (86 Model Years)	Maximum Shortage (% of Supply)	Deepest Groundwater Elevation	Variable Cost Per Acre-Foot (All Supplies)
Historical Hydrology					
#3a (Hybrid Strategy, current well capac)	61	3	22%	-43 ft	$134
#3 (Hybrid Strategy, 425 AF/mo well capac)	52	1	21%	-53 ft	$158
Extended Drought					
#4 (Hybrid Strategy, 425 AF/mo well capac, extended drought)	51	2	29%	-54 ft	$158

Table 13-2. WSMP results for the hybrid water supply strategy at projected water supply demand levels in 2030. Additional pumping capacity is added in Scenarios #3 and #4. Adding capacity beyond 425 acre-feet per month did not provide incremental benefit at this demand level. See Table 11-2 for explanation of columns.

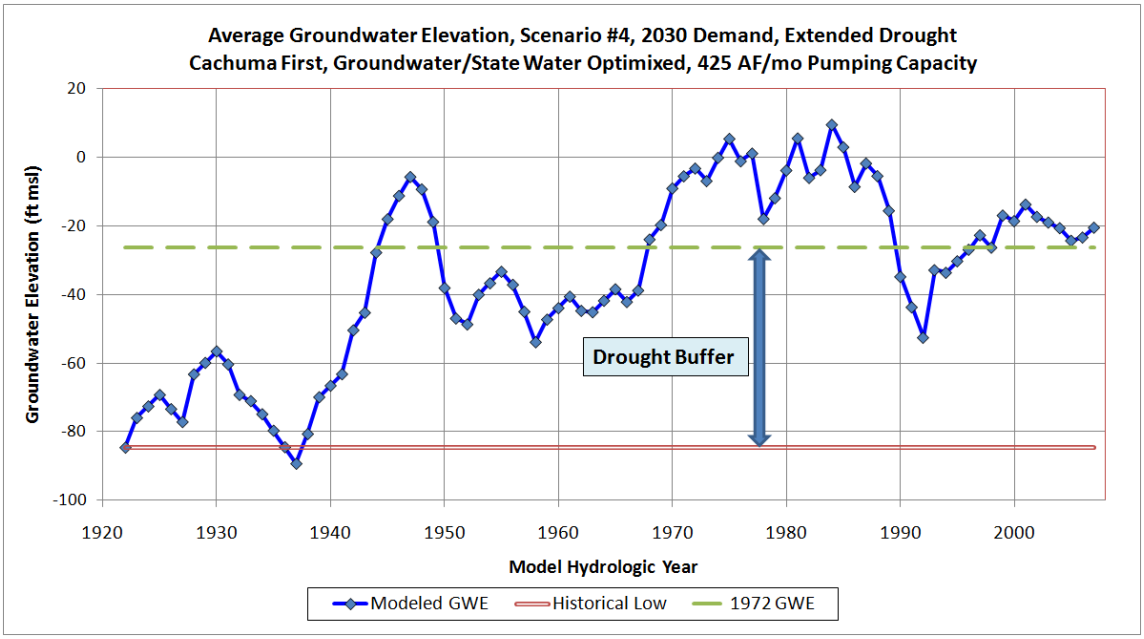

Figure 13-4. Modeled groundwater elevations for 2030 demand and 425 acre-feet per month of groundwater pumping capacity. Although the modeling indicates that the drought of the 1930s results in groundwater elevations below historical lows, this is an artifact of setting the initial groundwater elevation at historical low levels followed very soon by a drought.

14 Technical Appendix – Model Input

14.1 WSMP Input

This section contains information on water supply assumptions, cost of supplies, and model organization.

14.1.1 Water Supply and Other Assumptions

Cachuma water right: 9,322 AFY

Minimum Cachuma drought deliveries: 80% (by COMB policy). In the severe drought simulation (two more dry years following the 1986-1991 drought), Cachuma deliveries were reduced to 20% by the end of the additional two years of drought.

State Water allocation: 7,000 AFY

CCWA Drought Buffer: up to 4,000 AF at any time.

Annual State Water Delivery %: Based on 2009 DWR State Water Reliability Study (which integrates current judicial/environmental constraints; 2030 reliability based on same document, using their most likely future scenario).

CCWA Carryover Storage in San Luis Reservoir: Limited to 4,000 AF at any time (upper limit not yet certain)

GWD share of Coastal Aqueduct capacity: 4,500 AFY

Average % of State Water delivered as Exchange Water: 52%

Current groundwater pumping/treatment capacity: 300 AF/mo

Current capacity for treatment/injection of Cachuma spill water: 280 AF/mo (3 mgd)

Recycled water delivery: 1,000 AFY

GWD groundwater rights, SAFE Ordinance requirements, Annual Storage Commitment: From GWD 2010 Groundwater Management Plan.

Climate Change: The potential effects of climate change on GWD's water supplies have been integrated in the WSMP as much as is possible. Climate change considerations have been integrated into DWR's calculations of future State Water deliveries. The effect on local supplies is less-well understood, with studies suggesting less than a 10% swing in precipitation either way in the future. However, several of the scenarios addressed in this document model severe drought conditions that have not been experienced in recent history. In this way, the potential impacts of severe reductions in supply may be understood, whether these reductions are caused by climate change or other factors.

14.1.2 Supply Costs

Variable Water Supply Costs ($/AF)	Delivery Charge	Treatment: Chemicals	Treatment: Electrical	Waste Disposal	Variable Cost
Cachuma Potable	-	$52	$10	$5	**$67**
Goleta West Conduit	-	$22	-	-	**$22**
State Water (Table A)	$288	$52	$10	$5	**$355**
State Water (Exchange)	$167	$52	$10	$5	**$234**
Groundwater	-	$20	$80	$10	**$110**
Recycled Water	-	$57	$93	-	**$150**

Table 14-1. Cost per acre-foot for the variable cost for each source of GWD water supply.

Fixed Water Supply Costs ($/AF)	Agency Fee	Debt Service	Labor	Oper & Maint	Testing	Fixed Cost
Cachuma Potable	$324	$250	$134	$11	$20	**$739**
Goleta West Conduit	$320	-	-	-	-	**$320**
State Water (Table A)	$1,774	-	-	-	-	**$1,774**
State Water (Exchange)	$1,774	-	-	-	-	**$1,774**
Groundwater	-	$188	$66	$10	$3	**$266**
Recycled Water[17]	$312	$1,309	$47	$3	-	**$1,671**

Table 14-2. Cost per acre-foot for the fixed cost for each source of GWD water supply.

14.2 Water Supply Management Plan Demand Projections

14.2.1 Assumptions for Base Forecasted Demand in 2030

With the adoption of Senate Bill X7-7, the State of California set water demand targets for urban water retailers, such as the Goleta Water District. In alignment with this State mandate, these targets have been used to forecast water demand in 2030, as described below.

1) Per Capita Demand – Potable Water

Potable water demand was forecasted using the per capita water target of 117 gallons per capita per day (gpcd) for the Central Coast established by the Guidebook Urban Water Management Plan, finalized in March 2011 by the California Department of Water Resources (DWR). This per capita water target has been reduced by an additional increment to 114.50 gpcd, pursuant to the Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use published by DWR (DWR Technical Methodologies).

[17] Fixed costs calculated on 1,000 AFY of current delivery. At full capacity of 3,000 AFY, fixed costs per AF would be reduced to one-third of costs in table.

2) Population Growth

The Santa Barbara County Regional Growth Forecast, which was published by the Santa Barbara County Association of Governments (SBCAG) in 2007, forecasts an annual growth rate of 0.8% for the South Coast, including the Goleta Valley. Given an existing population base of approximately 80,000 in 2010, the local population is forecasted to grow to 93,821 by 2030.

Multiplying the forecasted 2030 population of 93,821 by the per capita water demand of 114.50 gpcd produces a total potable water demand of 12,033 acre feet per year in 2030.

3) Demand for Recycled and Agricultural Water

DWR Technical Methodologies enable per capita water demand to be calculated based on "Gross Water Use," which excludes recycled water and water delivered for agricultural use (California Water Code Section 10608.12(g)). This Water Supply Management Plan assumes that demand for recycled water (approximately 1,000 AFY) and demand for agricultural water (approximately 2,800 AFY) will remain steady through 2030.

4) Summary

In summary, the components of the District's base forecasted water demand in 2030 include:

- Potable Demand: 12,033 AFY
- Recycled Water Demand: 1,000 AFY
- Agricultural Demand: 2,800 AFY

Total: **15,833 AFY**

14.2.2 Authorized Future Demand

Future growth in potable water demand is subject to the SAFE Ordinance, which limits new annual service connections to 1% of available potable water supplies. In addition to connections that are subject SAFE, approximately 850 acre feet of future water demand has already been authorized under a variety of entitlements including District Permits, Water Service Agreements, Reclaimable Meters, Measure T allotments, and Can & Will Serve Letters. Many of these entitlements were executed prior to the adoption of SAFE or are for projects that have not yet been built. These are commitments and entitlements that the District is required to serve, due to contractual or other legal obligations, and are worth noting for long range supply and demand planning purposes.

Table 14-3 provides a listing of the agreements and obligations that are used to estimate the District's authorized future demand of 850 acre feet. Notably, this illustrates an additional increment of demand that may be served, above and beyond forecasted base demand in 2030, which would be subject to the new water distribution provisions of SAFE.

Entitlement Type	Entitled Acre Feet Per Year (AFY)	Notes and Analytical Assumptions
1. Water Agreements		
1a. Los Carneros	54	This is the portion of the Los Carneros Agreement not subject to the SAFE Ordinance. Total water demand for the project was estimated to be 119 AFY.
1b. Levison/Koral	61	Remaining portion of water entitlement.
1c. Univ. Exchange Corp (UEC)	250	A portion of this entitlement is forecasted to be served in the near future for several UCSB projects, separate from the projects on the main campus, which are covered under Permit 14 (see below).
2. Reclaimable Meters	133	Reclaimable meters are considered active service connections under GWD Code Section 5.04.010. A conservative analysis has been performed to determine the potential water use associated with the 75 reclaimable meters not yet put in service.
3. Permits	250	Prior to issuing Can & Will Serve Letters, District water entitlements were granted through Permits. One of the most significant is Permit 14, enabling UCSB to use 948 AFY of potable water on its main campus. As of 2009, UCSB had usage of just under 700 AFY, leaving approximately 250 AFY.
4. Measure T Parcels	30.10	Measure T (passed by voters in 1987), enabled District customers to reserve water entitlements for specified parcels. District records indicate that 301.52 acre feet were reserved; however, the exact unserved portion of this total reservation is currently unknown. An assumption is made that 10% (30 AFY) of the total water reservation has not been served.
5. Outstanding Can & Will Serve (CAWS) Letters	76.40	The District began providing CAWS Letters to projects in 1997 for new connections. Since that time, some projects have not yet been built and served. This includes a CAWS Letter to the Haskell's Landing project for approximately 21 AFY, as well as CAWS Letters for projects where construction is currently in progress.
Total (1)	**854.50**	

Table 14-3. Authorized future demand. Note (1): This represents a conservative estimate of the District's Authorized Future Demand for potable water. Intended for long range planning purposes, the extent to which this forecasted demand will be served over a 20-year planning horizon depends on numerous factors, including landowner preferences, economic trends, and market dynamics.

14.2.3 Annual Storage Commitment to the Drought Buffer

Between 1997 and 2010, authorized new service connections have added a total of 567.80 acre-feet per year of demand. Section II.5 of SAFE requires that two-thirds of potable water use resulting from new or additional service connections be permanently added to the Annual Storage Commitment to the Drought Buffer. Accordingly, the Annual Storage Commitment has grown from 2,000 acre feet, as originally identified in Section I.1 of SAFE, to 2,378.50 acre feet (Table 14-4).

Year	Annual Allocation (Acre Feet per Year)	Total Annual New Service Authorized	Additional Annual Storage Commitment (Acre Feet)	Total Storage Commitment to the Drought Buffer (Acre Feet)
		Pursuant to SAFE		2,000.00
1997	164.6	164.60	109.73	2,109.73
1998	164.6	96.26	64.17	2,173.91
1999	164.6	13.19	8.79	2,182.70
2000	164.6	21.38	14.25	2,196.95
2001	176.6	33.40	22.27	2,219.22
2002	176.6	31.05	20.70	2,239.92
2003	175	11.37	7.58	2,247.50
2004	175	23.95	15.97	2,263.47
2005	175	45.23	30.15	2,293.62
2006	175	25.71	17.14	2,310.76
2007	160	77.01	51.34	2,362.10
2008	154	9.41	6.27	2,368.37
2009	142	6.75	4.50	2,372.87
2010	146	8.46	5.64	2,378.51
1997 - 2010 AFY of New Service		567.80		

Table 14-4. Water allocation summary.

14.3 Model Organization

The following list of columns in the model spreadsheet gives an explanation of how the spreadsheet works ("Main" tab in spreadsheet). All calculations are in acre-feet.

Year: The hydrologic year of the model.

Column B: Month in the year.

Type: Climatic type year in Goleta based on rainfall records for that hydrologic year. The type year controls customer demand for GWD, based on the patterns of the last 15 years of demand records.

GWD Demand: Monthly demand adjusted for climatic type. There is a lookup table under "GWD Demand" tab in spreadsheet.

% Monthly Median: Percent of Cachuma water available to Cachuma users for that month, based on Santa Ynez River Model.

GWD Base Cachuma Available: Monthly Cachuma water available to GWD, based on historical deliveries.

Recycled Use: Fixed monthly delivery based on current deliveries.

GWD Base Cachuma Used: Amount of available Cachuma water used to meet monthly demand.

GWD Spill Water In-Lieu: Spill months are based on Santa Ynez River Model. Cachuma spill water replaces use of any other water source to meet GWD demand.

GWD Spill Water Inject: Amount of spill water injected by GWD, limited by injection capacity listed in cell "J2".

GWD Carryover: Amount of Cachuma carryover from previous year, calculated on Cachuma water year.

GWD Carryover Water Delivered: Monthly delivery of carryover water, which subtracts each month from **GWD Carryover** column.

GWD Total Cachuma Deliveries: Total of base Cachuma and carryover water.

Spill Month?: Spill month according to Santa Ynez River Model.

Unmet Demand after Cach-Recy: Unmet demand after delivery of recycled water and Cachuma deliveries (not including injected water from Cachuma).

SWP Delivery (2009 Availability): Percent of State Water availability for that hydrologic year, based on DWR 2009 reliability study using current regulatory/environmental restrictions.

Annual SWP Available: Amount of State Water available to GWD based on availability percentage and GWD allocation. Resets at the beginning of each year, then monthly deliveries are subtracted from annual total.

CCWA Bank: Amount of unused State Water stored in San Luis Reservoir at the end of the year by CCWA for use by GWD. It is limited to amount in cell "Y2". This limit will likely change as the program matures – it is the best estimate of current operations. The limit can be set to "0" if the bank is not operated. This water is used before the regular SWP allocation, with monthly deliveries subtracted from the total.

CCWA Bank Used for Unmet Demand: Monthly amount of banked water used to supply any unmet demand after Cachuma deliveries.

SWP Allocation to Unmet Demand: Monthly amount of State Water used to supply unmet demand after Cachuma and CCWA Bank deliveries.

SWP Available for SAFE: State Water available to recharge basin according to SAFE Ordinance protocol, if injection of spill water and deferred use of groundwater are insufficient. This situation has not yet occurred for GWD.

CCWA Bank Available for SAFE: Same as above. Banked water has priority of use over SWP allocation for that year.

Bank Used for SAFE: Water used from column CCWA Bank Available for SAFE.

SWP to SAFE: Water used from column SWP Available for SAFE.

Total SWP Delivery: Total deliveries of SWP allocation and CCWA Bank.

Annual SAFE ASC: Annual Storage Commitment as per SAFE Ordinance, based on SAFE protocols.

GWD Unmet Demand after SWP: Unmet GWD monthly demand after delivery of Cachuma, SWP, and CCWA Bank water.

GWD Groundwater Pumping: Amount of water pumped to satisfy unmet demand, within restrictions of SAFE Ordinance and GWD pumping capacity (capacity in cell "E1" in AF/Mo). In the scenarios where groundwater and State Water are shared in priority, there is a trigger based on State Water availability for that year – when the availability is below the trigger percentage (cell "C1"), then the ratio of pumping to State Water increases to conserve more State Water for use later in the year. This allows most or all of GWD's well capacity to be used across a dry year, rather than sharing State Water in winter months and then running out of State Water before the end of the year.

Annual Defer Pumping: Amount of groundwater pumping deferred from Wright Judgment water right. It is the difference between Wright water right and actual pumping – if there is unused water right, the deferred pumping is counted as helping to satisfy the SAFE ASC.

GWD Injection: Amount of Cachuma spill water injected (AF), within injection capacity limitation in cell "J1" (which is in mgd).

GWD Net Pump(+)/Inject(-): Net monthly pumping and/or injection. Number can be positive (pumping dominates) or negative (injection dominates).

Net Annual Pump/Inject: Annual calculation of sum of previous column.

Change Groundwater Elev: Annual change in average groundwater elevation in the basin, based on a set of mathematical equations derived from results of Groundwater Model. The equations take into account both net annual pumping/injection and the average groundwater elevation of the previous year.

Groundwater Elev: Average groundwater elevation in basin, calculated by combining previous year's elevation and annual change in groundwater elevation.

SAFE Status: Status of basin according to SAFE Ordinance protocols.

ASC Annual Requirement: Annual Storage Commitment, as per SAFE protocols.

ASC Balance: Remainder of ASC not yet satisfied.

Flag Meet Demand: Flag indicates when annual GWD is not met by sources of supply (no conservation applied).

Cachuma to Goleta West: Cost of treating Cachuma water and treating it for Goleta West system.

Cachuma Remainder: Cost of treating Cachuma water that does not go to Goleta West system.

SWP Alloc less Exchange: Variable cost of State Water delivery, less Exchange water.

Santa Ynez Exchange: Cost of Santa Ynez Exchange water.

CCWA Bank: Variable cost of State Water that has been stored in San Luis Reservoir by CCWA.

Total State Water: Total variable cost of sources of State Water delivery.

Groundwater: Cost of pumping and treating groundwater.

Total: Total costs of all supplies.

14.4 Interaction with Groundwater Model

A Groundwater Model was constructed by for the Goleta Groundwater basin as a separate project from this WSMP (CH2MHill, 2010). Because groundwater elevations are a critical factor in determining how groundwater can be used under the SAFE Ordinance, results of the Groundwater Model were integrated into the WSMP. The following process was used in this integration:

1) The pumping/injection amounts from Scenarios #1, 2, 3, and 4 were used as input to the Groundwater Model.

2) Resultant groundwater elevations from the Groundwater Model were then put back into the scenarios, where pumping/injection were recalculated given the new data (the Groundwater Model does not have of the SAFE Ordinance operating rules, whereas the WSMP does, so pumping changes as groundwater elevations change).

3) In an iterative approach, the recalculated pumping/injection were put back into the Groundwater Model again, with the resultant groundwater elevations calculated.

4) The iterative process was continued until pumping amounts and groundwater elevations agreed in both the Groundwater Model and the WSMP for a particular scenario. It took between five and fourteen iterations for this convergence to occur.

5) The results of the four Groundwater Model runs were combined to determine whether there was a consistent relationship between annual pumping and annual changes in groundwater elevations. When all the data were taken together, there was not a good correlation. However, when data were separated into groups depending upon the absolute groundwater elevations in the model (e.g., for groundwater elevations from -30 to 0 ft, 0 to 20 ft, etc.), the correlations improved.

6) A set of four equations was derived for the relationship, each equation representing a certain groundwater elevation depth range.

7) These equations were then put into the WSMP so that other scenarios can be run without having to rerun the Groundwater Model for each new scenario. An example of the results of groundwater elevations derived from these equations is shown in Figure 12-2.

15 SAFE Ordinance

APPENDIX B

SAFE Water Supplies Ordinance

Adopted by the electorate in November, 1994
Ordinance No. 94-03

and

Adopted by the electorate in June, 1991
Ordinance No. 91-01

FULL TEXT OF MEASURE J94
GOLETA WATER DISTRICT

AN AMENDMENT TO THE SAFE WATER SUPPLIES ORDINANCE

THE PEOPLE OF THE GOLETA WATER DISTRICT, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, DO ORDAIN AND ENACT THE FOLLOWING ORDINANCE WHICH SHALL BE AN AMENDMENT TO THE SAFE WATER SUPPLIES ORDINANCE:

RECITALS:
WHEREAS, the voters of the Goleta Water District ("District") enacted the SAFE Water Supplies Ordinance ("SAFE") in June 1991 authorizing the participation by the District in the State Water Project and providing for the bond financing to develop the Project Facilities necessary for delivery of that water to the District; and

WHEREAS, the District is now a member of the Central Coast Water Authority, the members of which are cooperating collectively to develop the Project Facilities which are now under construction; and

WHEREAS, SAFE provides for the creation of a Drought Buffer of water stored in the Goleta groundwater basin to protect against future drought emergencies and a Water Supply Distribution Plan to protect the District's water supplies against new demands until deliveries from the State Water Project are available; and

WHEREAS, this proposed amendment to SAFE maintains all the provisions regarding the protection of water supplies provided by the Drought Buffer and the Water Supply Distribution Plan; and

WHEREAS, pursuant to provisions of the judgment in the lawsuit known as Wright v. Goleta Water District, the District is required to develop a Water Plan to provide the necessary water supplies to achieve a balance between supply and demand for water within the District. The District's Water Plan is based on continuing to use the maximum amount of water available from the Cachuma Project; prudent management of the Goleta groundwater basin; use of the newly constructed wastewater reclamation project to replace existing use of potable water for turf irrigation; a continuing water conservation planning effort; participation in the State Water Project; and the necessary level of commitment to a desalinated seawater project. As a result of the long-term water supply deficit in the District, the District has been operating under a water connection moratorium for over twenty years. Once fully implemented the District's Water Plan should provide adequate supplies to meet long-term water demand in the District; and

WHEREAS, the forty year water service contract with the United States Bureau of Reclamation for delivery of water from the Cachuma Project will expire in May 1995. Negotiations are currently under way to renew that contract. The Bureau of Reclamation has required that the Cachuma Project be subjected to an environmental review process which is now being undertaken. It appears likely that the District's yield from the Cachuma Project after contract renewal will be less than the current yield as a result of the dedication of water for environmental enhancement purposes on the lower Santa Ynez River; and

WHEREAS, the Southern California Water Company is a Santa Barbara County water purveyor which currently holds rights to an entitlement to 3,000 acre feet per year of water from the State Water Project and has given notice of its intent to sell 2,500 acre feet of that entitlement. The Goleta Water District has identified itself as a potential purchaser of the entitlement. It is the intent of this Ordinance to authorize the acquisition and use of that entitlement; and

WHEREAS, the District estimates the annual cost of the Southern California Water Company entitlement to be $500 per acre foot of water delivered to the District. The entitlement acquisition is intended to reduce the long-term costs of water to the District and its customers in that alternative supplies that would be available, and necessary to meet the District's long-term demand would be more expensive than the water available from Southern California Water Company. The District's cost analysis of the acquisition is available at the District office.

NOW, THEREFORE, THE FOLLOWING ORDINANCE IS ENACTED INTO LAW:

1. The District is authorized to acquire an additional entitlement to the State Water Project in an amount of up to 2,500 acre feet per year, which is currently available from the Southern California Water Company. This entitlement will supplement the 4,500 acre feet per year authorized by the voters in originally adopting the SAFE Water Supplies Ordinance. This authorization shall provide for the payment of all costs of the acquisition and use of any additional entitlement acquired. Due to the controversy concerning the physical ability of the State Water Project to deliver its full contractual commitments, the District shall plan for the delivery of 3,800 acre feet per year of water as the amount of firm average long-term yield. The District's total State Water Project entitlement includes the basic entitlement of 4,500 acre feet per year, the District's share of the drought buffer held by the Central Coast Water Authority and the entitlement acquired pursuant to this authorization. Any excess water actually delivered over 3,800 acre feet per year

shall be stored in the Goleta groundwater Central basin until the basin is replenished to its 1972 level, for use during drought conditions.

2. Enactment of this Ordinance shall comply with all applicable law, including the California Environmental Quality Act.

3. If adopted, this Ordinance shall be an amendment to the SAFE Water Supplies Ordinance adopted by the electorate in June, 1991, which amended and superseded the Responsible Water Policy Ordinance, originally adopted by the electorate in 1973. Paragraph 1 of this Ordinance shall amend and fully supersede paragraph 6 of the SAFE Water Supplies Ordinance. All other provisions of the SAFE Ordinance shall remain in full force and effect. If adopted, this Ordinance may not be modified except pursuant to a vote of the electorate of the District.

4. This Ordinance shall be liberally construed and applied in order to fully promote its underlying purposes. If any word, sentence, paragraph or section of this Ordinance is determined to be unenforceable by a court of law, it is the intention of the District that the remainder of the Ordinance shall be enforced.

FULL TEXT OF MEASURE H91
GOLETA WATER DISTRICT
Ordinance 91-01
SAFE WATER SUPPLIES ORDINANCE

THE PEOPLE OF THE GOLETA WATER DISTRICT, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, DO ORDAIN AND ENACT THE FOLLOWING ORDINANCE WHICH SHALL BE KNOWN AS THE *SAFE WATER SUPPLIES ORDINANCE*:

RECITALS:
Whereas, the Goleta Water District ("District") faces a significant shortage of water to meet current long-term water demands of its customers as determined by the State Department of Water Resources and the Santa Barbara County Flood Control and Water Conservation District in their 1985 Santa Barbara County Water Project Alternatives study; and

Whereas, a drought emergency was declared in Santa Barbara County in 1990 following four years of below normal precipitation within Santa Barbara County and, in the future, the District will continue to be subject to recurring drought cycles which will threaten the ability of the District to meet the health and safety needs of its customers unless new and diversified, long term water projects are developed; and

Whereas, the District relies exclusively on local water supplies to meet its current water demand, which supplies originate entirely within Santa Barbara County and which supplies are all subject to the same climatic conditions; and

Whereas, in the absence of a system limiting the District's authority to provide new and/or additional water service connections without first mandating groundwater storage of water in wet years for use in dry years (a "drought buffer program") District customers may face severe water shortage in the future; and

Whereas on October 1, 1990 the Board of Directors of the Goleta Water District adopted a Water Supply Management Plan which includes use of water supplies from both a desalting plant and the State of Water Project; and;

Whereas, the District is a party to an agreement with the Santa Barbara County Flood Control and Water Conservation District entitled "Water Supply Retention Agreement" dated December 11, 1984 which it executed on June 28, 1986 (the "WSRA") entitling the District to 4,500 acre feet per year from the State Water Project, and has executed amendments thereto; and

Whereas, the District is also a party to a "Contract for Preliminary Studies for Financial Feasibility, Preliminary Design and Environmental Review Under State Water Supply Contract" (the "Design and EIR Agreement") dated June 2, 1986 but did not identify itself as a proposed participant in the preliminary studies in response to the "Notice of Intent to Request Preliminary Studies" for the Coastal Branch and the Mission Hills Extension of the California Aqueduct given by the city of Santa Maria on or about May 24, 1986; and

Whereas, the WSRA and its amendments and the Design and EIR Agreement contain the ways and means to provide for a long term solution to the existing drought emergency and to the ongoing water shortage within the County of Santa Barbara; and

Whereas, the District has a duty to provide a permanent, reliable water supply to its residents.

NOW, THEREFORE, THE FOLLOWING ORDINANCE IS ENACTED INTO LAW:

I Drought Buffer

1. In each year, commencing in the first year the State Water Project makes deliveries to the District, the District shall, after providing service to its existing customers, commit at least 2,000 acre feet of its water supply (the "Annual Storage Contribution") to the Goleta Central Basin either by direct injection or by reduction in groundwater pumping. The water so stored in the Central Basin shall constitute the District's "Drought Buffer".

2. The Drought Buffer may be pumped and distributed by the District only to existing customers and only in the event that a drought on the South Coast causes a reduction in the District's annual deliveries from Lake Cachuma. The Drought Buffer cannot, under any circumstances, be used by the District as a supplemental water supply to serve new or additional demands for water within the District.

3. Unless and until the Central Basin water level rises to 100% of its 1972 levels, the District shall be required to make its Annual Buffer Commitment. Thereafter, for so long as the District maintains the Central Basin at or above 1972 levels, the District may utilize the yield of the Central Basin to lower the cost of water service to existing customers.

II Water Supply Distribution Plan

4. The District shall be forbidden from providing new or additional potable water service connections to any property not previously served by the District until all of the following conditions are met:

a. District is receiving 100% of its deliveries normally allowed from the Cachuma Project;

b. The District has met its legal obligations required by the judgment in Wright v Goleta Water District;

c. Water rationing by the District is eliminated;

d. The District has met its obligation to make its Annual Storage Commitment to the Drought Buffer.

5. For each year in which the conditions of paragraph 4, have been met, the District shall be authorized to release 1% of its total potable water supply to new or additional service connections and if such new releases are authorized, the District shall permanently increase the size of the Annual Storage Commitment made to the Drought Buffer by 2/3 of the amount of any release for new or additional uses so that safe water supplies in times of drought shall not be endangered by any new or additional demands.

III State Water Supply

6. Due to controversy concerning the physical ability of the State Water Project to deliver its full contractual commitments, District shall plan for delivery of only 2,500 acre feet per year as the amount of the firm new yield from the State Water Project. Any excess water actually delivered shall be stored in the Goleta Groundwater basin for use in drought.

7. The District shall immediately either (a) give Notice of its Intention to Request Construction of Described Project Facilities under the State Water Contract, as provided for in Section 5(a)(1) of the WSRA or (b) respond to any such notice previously given by any other Contractor as provided for in Section 5(a)(2) of the WSRA that it wishes to participate in the described project.

8. The Project Facilities to be constructed pursuant to the Notice of Intention shall be the Mission Hills and Santa Ynez Extensions of the Coastal Branch of the California Aqueduct and required water treatment facilities and other appurtenant facilities (herein the "Project Facilities").

9. The District agrees, pursuant to section Section 5(a)(2) of the WSRA, that the time for determination of participation and sizing of the Project Facilities may be any date on or after September 1, 1992 agreeable to the other participants.

10. The District shall, in the shortest time lawfully possible, exercise all of its rights and fulfill all of its obligations under the WSRA, including the payment of any monies required thereunder.

11. The District shall file a Late Request to Amend, pursuant to Secton 3(f) of the Design and EIR Agreement, and agrees to pay its proportionate share of all costs required by said Section 3(f) and any amounts required under Section 3(g) of said Design and EIR Agreement.

12. The District, or the Santa Barbara Water Purveyors Agency, or any other joint powers agency of which the District is a member or may become a member for such purposes, may issue revenue bonds ("bonds") from time to time in an amount not to exceed Forty-Two Million Dollars ($42,000,000.00) to provide funds to finance the District's pro rata share of the costs and expenses under the WSRA and the Design and EIR Agreement. Said bonds shall be used for the purposes of constructing the Project Facilities, including without limitation, any and all necessary facilities required for the delivery of State Project Water pursuant to the WSRA to the District through the Coastal Branch of the California Aqueduct, including any and all expenses incidental thereto or connected therewith, and shall include, without limitation, the cost of acquiring rights of way, the cost of constructing and/or acquiring all buildings, equipment and related personal and real property required to complete the Project Facilities, and the engineering, environmental review, inspection, legal and fiscal agent's fees, costs incurred by the District or joint powers agency in connection with the issuance and sale of such bonds, and reserve fund and bond interest estimated to accrue during the construction period and for a period of not to exceed twelve (12) months after completion of construction, such bonds to be payable from the District's water revenues, to bear interest at a rate or rates not to exceed the legal maximum from time to time, and to mature in not more than forty (40) years from the date of issuance.

13. This Ordinance shall be submitted to a vote of the people of the District in compliance with the requirements of Section 5(a)(4)(1) of the WSRA and pursuant to Elections Code Section 5201.

14. All actions taken pursuant to this Ordinance shall be in compliance with all local, state and federal environmental protection laws. Nothing in the Ordinance shall be construed to require such compliance prior to the election provided for herein.

15. This Ordinance shall be liberally construed and applied in order to fully promote its underlying purposes. If any word, sentence, paragraph or section of this Ordinance is determined to be unenforceable by a court law, it is the intention of the District that the remainder of the Ordinance shall be enforced.

16. If adopted, this ordinance shall be an amendment to the Responsible Water Policy Ordinance adopted by the people in May, 1973, and may not be modified except pursuant to the vote of the electorate of the District. To the extent that the provisions of this ordinance conflict with that ordinance or any prior ordinance or measure previously enacted by the District or the voters of the District, the provisions of this ordinance shall control. To the extent that the provisions of this Ordinance conflict with any other ordinance or measure adopted at the same election, the ordinance or measure receiving the highest number of affirmative votes shall control.

17. Nothing herein is intended to affect the rights of any parties nor the obligations of the District pursuant to the judgment in the action know as Wright v Goleta Water District, Santa Barbara Superior Court Case No. SM57969.

18. This ordinance shall take effect immediately upon being approved by a majority vote of the votes cast at the election.

SAFE Ordinance

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FULL TEXT OF MEASURE J94
GOLETA WATER DISTRICT

AN AMENDMENT TO THE SAFE WATER SUPPLIES ORDINANCE

THE PEOPLE OF THE GOLETA WATER DISTRICT, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, DO ORDAIN AND ENACT THE FOLLOWING ORDINANCE WHICH SHALL BE AN AMENDMENT TO THE SAFE WATER SUPPLIES ORDINANCE:

RECITALS:
WHEREAS, the voters of the Goleta Water District ("District") enacted the SAFE Water Supplies Ordinance ("SAFE") in June 1991 authorizing the participation by the District in the State Water Project and providing for the bond financing to develop the Project Facilities necessary for delivery of that water to the District; and

WHEREAS, the District is now a member of the Central Coast Water Authority, the members of which are cooperating collectively to develop the Project Facilities which are now under construction; and

WHEREAS, SAFE provides for the creation of a Drought Buffer of water stored in the Goleta groundwater basin to protect against future drought emergencies and a Water Supply Distribution Plan to protect the District's water supplies against new demands until deliveries from the State Water Project are available; and

WHEREAS, this proposed amendment to SAFE maintains all the provisions regarding the protection of water supplies provided by the Drought Buffer and the Water Supply Distribution Plan; and

WHEREAS, pursuant to provisions of the judgment in the lawsuit known as Wright v. Goleta Water District, the District is required to develop a Water Plan to provide the necessary water supplies to achieve a balance between supply and demand for water within the District. The District's Water Plan is based on continuing to use the maximum amount of water available from the Cachuma Project; prudent management of the Goleta groundwater basin; use of the newly constructed wastewater reclamation project to replace existing use of potable water for turf irrigation; a continuing water conservation planning effort; participation in the State Water Project; and the necessary level of commitment to a desalinated seawater project. As a result of the long-term water supply deficit in the District, the District has been operating under a water connection moratorium for over twenty years. Once fully implemented the District's Water Plan should provide adequate supplies to meet long-term water demand in the District; and

WHEREAS, the forty year water service contract with the United States Bureau of Reclamation for delivery of water from the Cachuma Project will expire in May 1995. Negotiations are currently under way to renew that contract. The Bureau of Reclamation has required that the Cachuma Project be subjected to an environmental review process which is now being undertaken. It appears likely that the District's yield from the Cachuma Project after contract renewal will be less than the current yield as a result of the dedication of water for environmental enhancement purposes on the lower Santa Ynez River; and

WHEREAS, the Southern California Water Company is a Santa Barbara County water purveyor which currently holds rights to an entitlement to 3,000 acre feet per year of water from the State Water Project and has given notice of its intent to sell 2,500 acre feet of that entitlement. The Goleta Water District has identified itself as a potential purchaser of the entitlement. It is the intent of this Ordinance to authorize the acquisition and use of that entitlement; and

WHEREAS, the District estimates the annual cost of the Southern California Water Company entitlement to be $500 per acre foot of water delivered to the District. The entitlement acquisition is intended to reduce the long-term costs of water to the District and its customers in that alternative supplies that would be available, and necessary to meet the District's long-term demand would be more expensive than the water available from Southern California Water Company. The District's cost analysis of the acquisition is available at the District office.

NOW, THEREFORE, THE FOLLOWING ORDINANCE IS ENACTED INTO LAW:

1. The District is authorized to acquire an additional entitlement to the State Water Project in an amount of up to 2,500 acre feet per year, which is currently available from the Southern California Water Company. This entitlement will supplement the 4,500 acre feet per year authorized by the voters in originally adopting the SAFE Water Supplies Ordinance. This authorization shall provide for the payment of all costs of the acquisition and use of any additional entitlement acquired. Due to the controversy concerning the physical ability of the State Water Project to deliver its full contractual commitments, the District shall plan for the delivery of 3,800 acre feet per year of water as the amount of firm average long-term yield. The District's total State Water Project entitlement includes the basic entitlement of 4,500 acre feet per year, the District's share of the drought buffer held by the Central Coast Water Authority and the entitlement acquired pursuant to this authorization. Any excess water actually delivered over 3,800 acre feet per year shall be stored in the Goleta groundwater Central basin until the basin is replenished to its 1972 level, for use during drought conditions.

2. Enactment of this Ordinance shall comply with all applicable law, including the California Environmental Quality Act.

3. If adopted, this Ordinance shall be an amendment to the SAFE Water Supplies Ordinance adopted by the electorate in June, 1991, which amended and superseded the Responsible Water Policy Ordinance,

originally adopted by the electorate in 1973. Paragraph 1 of this Ordinance shall amend and fully supersede paragraph 6 of the SAFE Water Supplies Ordinance. All other provisions of the SAFE Ordinance shall remain in full force and effect. If adopted, this Ordinance may not be modified except pursuant to a vote of the electorate of the District.

4. This Ordinance shall be liberally construed and applied in order to fully promote its underlying purposes. If any word, sentence, paragraph or section of this Ordinance is determined to be unenforceable by a court of law, it is the intention of the District that the remainder of the Ordinance shall be enforced.

FULL TEXT OF MEASURE H91
GOLETA WATER DISTRICT
Ordinance 91-01
SAFE WATER SUPPLIES ORDINANCE

THE PEOPLE OF THE GOLETA WATER DISTRICT, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, DO ORDAIN AND ENACT THE FOLLOWING ORDINANCE WHICH SHALL BE KNOWN AS THE *SAFE WATER SUPPLIES ORDINANCE*:

RECITALS:

Whereas, the Goleta Water District ("District") faces a significant shortage of water to meet current long-term water demands of its customers as determined by the State Department of Water Resources and the Santa Barbara County Flood Control and Water Conservation District in their 1985 Santa Barbara County Water Project Alternatives study; and

Whereas, a drought emergency was declared in Santa Barbara County in 1990 following four years of below normal precipitation within Santa Barbara County and, in the future, the District will continue to be subject to recurring drought cycles which will threaten the ability of the District to meet the health and safety needs of its customers unless new and diversified, long term water projects are developed; and

Whereas, the District relies exclusively on local water supplies to meet its current water demand, which supplies originate entirely within Santa Barbara County and which supplies are all subject to the same climatic conditions; and

Whereas, in the absence of a system limiting the District's authority to provide new and/or additional water service connections without first mandating groundwater storage of water in wet years for use in dry years (a "drought buffer program") District customers may face severe water shortage in the future; and

Whereas on October 1, 1990 the Board of Directors of the Goleta Water District adopted a Water Supply Management Plan which includes use of water supplies from both a desalting plant and the State of Water Project; and;

Whereas, the District is a party to an agreement with the Santa Barbara County Flood Control and Water Conservation District entitled "Water Supply Retention Agreement" dated December 11, 1984 which it executed on June 28, 1986 (the "WSRA") entitling the District to 4,500 acre feet per year from the State Water Project, and has executed amendments thereto; and

Whereas, the District is also a party to a "Contract for Preliminary Studies for Financial Feasibility, Preliminary Design and Environmental Review Under State Water Supply Contract" (the "Design and EIR Agreement") dated June 2, 1986 but did not identify itself as a proposed participant in the preliminary studies in response to the "Notice of Intent to Request Preliminary Studies" for the Coastal Branch and the Mission Hills Extension of the California Aqueduct given by the city of Santa Maria on or about May 24, 1986; and

Whereas, the WSRA and its amendments and the Design and EIR Agreement contain the ways and means to provide for a long term solution to the existing drought emergency and to the ongoing water shortage within the County of Santa Barbara; and

Whereas, the District has a duty to provide a permanent, reliable water supply to its residents.

NOW, THEREFORE, THE FOLLOWING ORDINANCE IS ENACTED INTO LAW:

I Drought Buffer

1. In each year, commencing in the first year the State Water Project makes deliveries to the District, the District shall, after providing service to its existing customers, commit at least 2,000 acre feet of its water supply (the "Annual Storage Contribution") to the Goleta Central Basin either by direct injection or by reduction in groundwater pumping. The water so stored in the Central Basin shall constitute the District's "Drought Buffer".

2. The Drought Buffer may be pumped and distributed by the District only to existing customers and only in the event that a drought on the South Coast causes a reduction in the District's annual deliveries from Lake Cachuma. The Drought Buffer cannot, under any circumstances, be used by the District as a supplemental water supply to serve new or additional demands for water within the District.

3. Unless and until the Central Basin water level rises to 100% of its 1972 levels, the District shall be required to make its Annual Buffer Commitment. Thereafter, for so long as the District maintains the Central Basin at or above 1972 levels, the District may utilize the yield of the Central Basin to lower the cost of water service to existing customers.

II Water Supply Distribution Plan

4. The District shall be forbidden from providing new or additional potable water service connections to any property not previously served by the District until all of the following conditions are met:

a. District is receiving 100% of its deliveries normally allowed from the Cachuma Project;

b. The District has met its legal obligations required by the judgment in Wright v Goleta Water District;

c. Water rationing by the District is eliminated;

d. The District has met its obligation to make its Annual Storage Commitment to the Drought Buffer.

5. For each year in which the conditions of paragraph 4, have been met, the District shall be authorized to release 1% of its total potable water supply to new or additional service connections and if such new releases are authorized, the District shall permanently increase the size of the Annual Storage Commitment made to the Drought Buffer by 2/3 of the amount of any release for new or additional uses so that safe water supplies in times of drought shall not be endangered by any new or additional demands.

III State Water Supply

6. Due to controversy concerning the physical ability of the State Water Project to deliver its full contractual commitments, District shall plan for delivery of only 2,500 acre feet per year as the amount of the firm new yield from the State Water Project. Any excess water actually delivered shall be stored in the Goleta Groundwater basin for use in drought.

7. The District shall immediately either (a) give Notice of its Intention to Request Construction of

Described Project Facilities under the State Water Contract, as provided for in Section 5(a)(1) of the WSRA or (b) respond to any such notice previously given by any other Contractor as provided for in Section 5(a)(2) of the WSRA that it wishes to participate in the described project.

8. The Project Facilities to be constructed pursuant to the Notice of Intention shall be the Mission Hills and Santa Ynez Extensions of the Coastal Branch of the California Aqueduct and required water treatment facilities and other appurtenant facilities (herein the "Project Facilities").

9. The District agrees, pursuant to section Section 5(a)(2) of the WSRA, that the time for determination of participation and sizing of the Project Facilities may be any date on or after September 1, 1992 agreeable to the other participants.

10. The District shall, in the shortest time lawfully possible, exercise all of its rights and fulfill all of its obligations under the WSRA, including the payment of any monies required thereunder.

11. The District shall file a Late Request to Amend, pursuant to Secton 3(f) of the Design and EIR Agreement, and agrees to pay its proportionate share of all costs required by said Section 3(f) and any amounts required under Section 3(g) of said Design and EIR Agreement.

12. The District, or the Santa Barbara Water Purveyors Agency, or any other joint powers agency of which the District is a member or may become a member for such purposes, may issue revenue bonds ("bonds") from time to time in an amount not to exceed Forty-Two Million Dollars ($42,000,000.00) to provide funds to finance the District's pro rata share of the costs and expenses under the WSRA and the Design and EIR Agreement. Said bonds shall be used for the purposes of constructing the Project Facilities, including without limitation, any and all necessary facilities required for the delivery of State Project Water pursuant to the WSRA to the District through the Coastal Branch of the California Aqueduct, including any and all expenses incidental thereto or connected therewith, and shall include, without limitation, the cost of acquiring rights of way, the cost of constructing and/or acquiring all buildings, equipment and related personal and real property required to complete the Project Facilities, and the engineering, environmental review, inspection, legal and fiscal agent's fees, costs incurred by the District or joint powers agency in connection with the issuance and sale of such bonds, and reserve fund and bond interest estimated to accrue during the construction period and for a period of not to exceed twelve (12) months after completion of construction, such bonds to be payable from the District's water revenues, to bear interest at a rate or rates not to exceed the legal maximum from time to time, and to mature in not more than forty (40) years from the date of issuance.

13. This Ordinance shall be submitted to a vote of the people of the District in compliance with the requirements of Section 5(a)(4)(1) of the WSRA and pursuant to Elections Code Section 5201.

14. All actions taken pursuant to this Ordinance shall be in compliance with all local, state and federal environmental protection laws. Nothing in the Ordinance shall be construed to require such compliance prior to the election provided for herein.

15. This Ordinance shall be liberally construed and applied in order to fully promote its underlying purposes. If any word, sentence, paragraph or section of this Ordinance is determined to be unenforceable by a court law, it is the intention of the District that the remainder of the Ordinance shall be enforced.

16. If adopted, this ordinance shall be an amendment to the Responsible Water Policy Ordinance adopted by the people in May, 1973, and may not be modified except pursuant to the vote of the electorate of the District. To the extent that the provisions of this ordinance conflict with that ordinance or any prior ordinance or measure previously enacted by the District or the voters of the District, the provisions of this ordinance shall control. To the extent that the provisions of this Ordinance conflict with any other ordinance or measure adopted at the same election, the ordinance or measure receiving the highest number of affirmative votes shall control.

17. Nothing herein is intended to affect the rights of any parties nor the obligations of the District pursuant to the judgment in the action know as Wright v Goleta Water District, Santa Barbara Superior Court Case No. SM57969.

18. This ordinance shall take effect immediately upon being approved by a majority vote of the votes cast at the election.

Appendix E

California Urban Water Conservation Council Reports

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The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Base Year Data

Link to FAQs

Reporting Unit Base Year

Base Year: 2008

What is your reporting period? Calendar

BMP 1.3 Metering

Number of unmetered accounts in Base Year: 0

BMP 3.1 & BMP 3.2 & BMP 3.3 Residential Programs

Number of Single Family Customers in Base Year: 13,301

Number of Multi Family Units in Base Year: 1,559

BMP 3.4 WaterSense Specification (WSS) Toilets

Number of Single Family Housing Units constructed prior to 1992: 11400

Number of Multi Family Units prior to 1992: 13303

Average number of toilets per single family household: 2

Average number of toilets per multi family household: 1.25

Five year average resale rate of single family households: 3.15%

Five-year average resale rate of multi family households: 0.05%

Average number of persons per single family household: 3.5

Average number of persons per multi family household: 2.5

BMP 4.0 & BMP 5.0 CII & Landscape

Total water use (in Acre Feet) by CII accounts: 2702

Number of accounts with dedicated irrigation meters: 185

Number of CII accounts without meters or with Mixed Use Meters: 2,517

Number of CII accounts: 1,023

Comments:

version 1.0

The fields in red are required.

Agency name: Goleta Water District

Division name (Reporting unit): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

Submit Form

WATER SOURCES

2009

Service Area Population: 85000

Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
Lake Cachuma	10,983.00	Surface	
Goleta Groundwater Basin	1,988.00	Groundwater	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported?

The fields in red are required.

Agency name: Goleta Water District

Division name (Reporting unit): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

WATER SOURCES

2010

Service Area Population: 85000

Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
Lake Cachuma	10,983.00	Surface	
Goleta Groundwater Basin	1,988.00	Groundwater	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported?

The fields in red are required.

Agency name: Goleta Water District

Division name (Reporting unit): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

2009

Service Area Population: 85000

Non- Potable Water

If you select Other for type, enter

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
Goleta Sanitary District Recycled	917.00	Recycled Non Potable	Tertiary Recycled Water
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported? such as groundwater recharge, retail,

The fields in red are required.

Agency name: Goleta Water District

Division name (Reporting unit): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

Submit Form

2010

Service Area Population: 85000

Non- Potable Water

If you select Other for type, enter

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
Goleta Sanitary District Recycled	917.00	Recycled Non Potable	Tertiary Recycled Water
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported? such as groundwater recharge, retail,

The fields in red are required.

Agency name: Goleta Water District

Division name (Reporting unit): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

Water Uses

2009

Potable Water Billed

Make sure to enter numbers in AF/Year.

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Single-Family	13,303.00	4,837.00			
Multi-Family	1,582.00	1,899.00			
Commercial	1,003.00	1,940.00			
Institutional	3.00	593.00			
Dedicated Irrigation	204.00	420.00			
Agricultural	141.00	1,899.00			
Fire Lines	309.00	0.00			
Other	7.00	32.00			Conveyance
Other		12.00			Wholesale
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					

Potable Water Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					

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Water Uses 2010

Potable Water Billed

Make sure to enter numbers in AF/Year.

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Single-Family	13,303.00	4,837.00			
Multi-Family	1,582.00	1,899.00			
Commercial	1,003.00	1,940.00			
Institutional	3.00	593.00			
Dedicated Irrigation	204.00	420.00			
Agricultural	141.00	1,899.00			
Fire Lines	309.00	0.00			
Other	7.00	32.00			Conveyance
Other		12.00			Wholesale
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					

Potable Water Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					

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Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

Water Uses

2009

Non-Potable Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Agricultural	25.00	1,170.00			Chlorinated Surface Water
Other	32.00	919.00			Recycled
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					

Non-Potable Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
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Select a Customer Type					
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Select a Customer Type					
Select a Customer Type					
Select a Customer Type					

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Reporting unit number: 126

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First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

Water Uses

2010

Non-Potable Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Agricultural	25.00	1,170.00			Chlorinated Surface Water
Other	32.00	919.00			Recycled
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					

Non-Potable Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					
Select a Customer Type					

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

2009

BMP 1.1 Operations Practices

Comments:

All links would not fit in space provided and are provided with the description.

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Conservation Coordinator

Conservation Coordinator (•) Yes ( ) No

Contact Information

First Name	Misty
Last Name	Williams
Title	Engineering Associate
Phone	805-964-6761 Ext. 643
Email	mwilliams@goletawater.com

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
c. Support legislation or regulations that prohibit water waste
d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
e. Support local ordinances that prohibit water waste
f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

a. A description of, or electronic link to, any ordinances or terms of service
b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

http://www.goletawater.com/assets/documents/other/GWD_Water_Code.pdf, + one link in description

Enter a description:

GWD does the following:
a. Prohibits waste of water through the Goleta Water District Code, Section 6.20.070 Waste of water.
d. Establish "Urban Water Shortage Contingency Plan" as part of the Urban Water Management Plan (http://www.goletawater.com/assets/documents/water_supply/GWD_UWMP-Completed.pdf).

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

2010

BMP 1.1 Operations Practices

Comments:

All links would not fit in space provided and are provided with the description.

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Conservation Coordinator

Conservation Coordinator ◯ Yes ◯ No

Contact Information

First Name	Misty
Last Name	Williams
Title	Engineering Associate
Phone	805-964-6761 Ext. 643
Email	mwilliams@goletawater.com

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
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d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
e. Support local ordinances that prohibit water waste
f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

a. A description of, or electronic link to, any ordinances or terms of service
b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

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Enter a description:

GWD does the following:
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Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

2009 BMP 1.2 Water Loss Control

Did your agency complete a pre-screening system audit in 2009? Yes (●) No ( )

If yes, answer the following:

Determine metered sales in AF: 11,632.00

Definition: other accountable uses not included in metered sales, such as unbilled water use, fire suppression, etc.

Determine system verifiable uses AF:

Determine total supply into the system in AF: 12,971.00

Does your agency keep necessary data on file to verify the answers above? Yes (●) No ( )

Did your agency complete a full-scale system water audit during 2009? Yes ( ) No (●)

Does your agency maintain in-house records of audit results or the completed AWWA worksheet for the completed audit which could be forwarded to CUWCC? Yes ( ) No (●)

Did your agency operate a system leak detection program? Yes ( ) No (●)

Comments:

All links would not fit in space provided and are provided with the description.

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

2009 BMP 1.2 Water Loss Control

View MOU

AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software ◉ Yes ○ No

Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

To complete in 2011.

Water Audit Validity Score from AWWA spreadsheet

Agency Completed Training In The AWWA Water Audit Method ◉ Yes ○ No

Agency Completed Training In The Component Analysis Process ◉ Yes ○ No

Completed/Updated the Component Analysis (at least every 4 years)? ○ Yes ◉ No

Component Analysis Completed/Updated Date

Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective ◉ Yes ○ No

Recording Keeping Requirements:

Date/Time Leak Reported	Leak Location
Type of Leaking Pipe Segment or Fitting	Leak Running Time From Report to Repair
Leak Volume Estimate	Cost of Repair

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective ○ Yes ○ No

Type of Program Activities Used to Detect Unreported Leaks

Annual Summary Information

Complete the following table with annual summary information (required for reporting years 2-5 only)

Total Leaks Repaired	Economic Value Of Real Loss	Economic Value Of Apparent Loss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Interventions	Water Saved (AF/Year)

Comments:

The fields in red are required.

Primary contact:

Agency name: Goleta Water District

First name: Misty

Reporting unit name (District name): Goleta Water District

Last name: Williams

Reporting unit number: 126

Email: mwilliams@goletawater.com

You must enter the [illegible] agency. Click here to open a table to obtain this number.

Submit Form

Link to FAQs

2010 BMP 1.2 Water Loss Control

View MOU

AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software ○ Yes ○ No

Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

To complete in 2011.

Water Audit Validity Score from AWWA spreadsheet

Agency Completed Training In The AWWA Water Audit Method ○ Yes ○ No

Agency Completed Training In The Component Analysis Process ○ Yes ○ No

Completed/Updated the Component Analysis (at least every 4 years)? ○ Yes ○ No

Component Analysis Completed/Updated Date

Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective ○ Yes ○ No

Recording Keeping Requirements:

Date/Time Leak Reported	Leak Location
Type of Leaking Pipe Segment or Fitting	Leak Running Time From Report to Repair
Leak Volume Estimate	Cost of Repair

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective ○ Yes ○ No

Type of Program Activities Used to Detect Unreported Leaks

Annual Summary Information

Complete the following table with annual summary information (required for reporting years 2-5 only)

Total Leaks Repaired	Economic Value Of Real Loss	Economic Value Of Apparent Loss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Interventions	Water Saved (AF/Year)

Comments:

version 1.0

2009

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

BMP 1.3 Metering with Commodity

Link to FAQs

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Implementation

Does your agency have any unmetered service connections? ○ Yes ◉ No

If YES, has your agency completed a meter retrofit plan? ○ Yes ○ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? ◉ Yes ○ No

Are all new service connections being billed volumetrically? ◉ Yes ○ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? ◉ Yes ○ No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	13,303	13,303	13,303	Monthly	159,636
Multi-Family	1,582	1,582	1,582	Monthly	18,984
Commericial	1,003	1,003	1,003	Monthly	1,236
Institutional	3	3	3	Monthly	36
Dedicated Irrigatic	236	236	236	Monthly	2,832
Agricultural	166	166	166	Monthly	1,992
Fire Lines	309	309	309	Monthly	3,708
Other	7	7	7	Monthly	84
Select a Custome				Monthly	
Select a Custome				Monthly	

Number of CII Accounts with Mixed-use Meters: 767

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period: 0

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? ○ Yes ◉ No

If YES, please fill in the following information:

A. When was the Feasiblity Study conducted

B. Email or provide a link to the feasibility study (or description of):

File name(s): Email files to natalie@cuwcc.org Enter the file name here e.g. WaterWastePreventionOrdinance

Web address(s) URL: comma-separated list Enter the URL to your documentation.

General Comments about BMP 1.3: All links would not fit in space provided and are provided with the description.

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

BMP 1.3 Metering with Commodity

2010

Link to FAQs

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Implementation

Does your agency have any unmetered service connections? Yes No

If YES, has your agency completed a meter retrofit plan? Yes No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? Yes No

Are all new service connections being billed volumetrically? Yes No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? Yes No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	13,303	13,303	13,303	Monthly	159,636
Multi-Family	1,582	1,582	1,582	Monthly	18,984
Commericial	1,003	1,003	1,003	Monthly	1,236
Instiitional	3	3	3	Monthly	36
Dedicated Irrigatic	236	236	236	Monthly	2,832
Agricultural	166	166	166	Monthly	1,992
Fire Lines	309	309	309	Monthly	3,708
Other	7	7	7	Monthly	84
Select a Custome				Monthly	
Select a Custome				Monthly	

Number of CII Accounts with Mixed-use Meters: 767

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period: 0

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? Yes No

If YES, please fill in the following information:

A. When was the Feasiblity Study conducted

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

File name(s): Email files to natalie@cuwcc.org Enter the file name here e.g. WaterWastePreventionOrdinance

Web address(s) URL: comma-separated list Enter the URL to your documentation.

Comments: All links would not fit in space provided and are provided with the description.

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number agency. Click here to open a table to obtain this number.

Submit Form

Link to FAQs

View MOU

BMP 1.4 Retail Conservation Pricing

2009

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Uniform		531,549.00	341,903.00
Uniform		219,116.00	79,780.00
Uniform		197,412.00	92,882.00
Uniform		66,598.00	5,896.00
Uniform		29,320.00	14,138.00
Uniform		69,959.00	24,552.00
Select a Rate Struc			

Implementation Option (Conservation Pricing Option)

- (•) Use Annual Revenue As Reported
- ( ) Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service ( ) Yes (•) No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Service Not Provide			
Select a Rate Struc			
Select a Rate Struc			
Select a Rate Struc			
Select a Rate Struc			
Select a Rate Struc			
Select a Rate Struc			

Comments:

All links would not fit in space provided and are provided with the description.

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

CUWCC

2010

Link to FAQs

View MOU

BMP 1.4 Retail Conservation Pricing

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

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Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

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Select a Rate Struc			

Implementation Option (Conservation Pricing Option)

- ○ Use Annual Revenue As Reported
- ○ Use Canadian Water & Wastewater Association Rate Design Model

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Agency Provide Sewer Service ○ Yes ○ No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Service Not Provide			
Select a Rate Struc			
Select a Rate Struc			
Select a Rate Struc			
Select a Rate Struc			
Select a Rate Struc			
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Comments:

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First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2009

BMP 2.1 Public Outreach - Retail Reporting

View MOU

Is a Wholesale Agency Performing Public Outreach?

Are there one or more wholesale agencies performing public outreach which can be counted to help your agency comply with the BMP? (•) Yes ( ) No

Enter the name(s) of the wholesale agency (comma delimited): Santa Barbara County Water Agency

Is your agency performing public outreach?

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

Public Information Programs List

Did at least one contact take place during each quarter of the reporting year? ☑

Number of Public Contacts	Public Information Programs
2	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
12	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
2	Landscape water conservation media campaigns
400	General water conservation information
12	Website

Contact with the Media

Are there one or more wholesale agencies performing media outreach which can be counted to help your agency comply with the BMP? (•) Yes ( ) No

Enter the name(s) of the wholesale agency (comma delimited): Santa Barbara County Water Agency

OR Retail Agency (Contacts with the Media)

Media Contacts List

Did at least one contact take place during each quarter of the reporting year? ☐

Number of Media Contacts	Did at least one contact take place during each quarter of the reporting year?	Media Contact Types
	Select a type of media contact	
	Articles or stories resulting from outreach	
	Select a type of media contact	
	Select a type of media contact	
	Select a type of media contact	
	Select a type of media contact	

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? (•) Yes ( ) No

Enter the name(s) of the wholesale agency (comma delimited)

Santa Barbara County Water Agency

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address): http://www.goletawater.com/

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

- add searchable plant database
- add graywater info
- graywater standards update
- graywater webpage edit

Did at least one Website Update take place during each quarter of the reporting year? (•) Yes ( ) No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount		Personnel Costs Included? If yes, check the box.	Comments	
Community Relati	$1,000			FY 08/09 budgeted from FY 2009-2010 FINAL	

Comments:

The first program listed under Public Information Programs List should be Newsletter Articles. The drop down menu would save this selection and defaulted back t

The fields in red are required.

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Link to FAQs

2010

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View MOU

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2	Newsletter articles on conservation
400	General water conservation information
12	Website

Contact with the Media

Are there one or more wholesale agencies performing media outreach which can be counted to help your agency comply with the BMP? ◉ Yes ○ No

Enter the name(s) of the wholesale agency (comma delimited): Santa Barbara County Water Agency

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	Select a type of media contact	
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	Select a type of media contact	

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Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2009

BMP 2.1 Public Outreach Cont'd

View MOU

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?	
Community Relations & Information	$3,575		If yes, check the check box.

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts? ○ Yes ◉ No

Public Outreach Additional Information

Public Information Programs	Importance	

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? ◉ Yes ○ No

Describe the brand, theme or mascot.

Goleta Water District participates in the local website www.sbwater.org with the "Family of Santa Barbara County Water Providers." In addition, we often write that there is, "Never enough water to waste."

Market Research

Have you sponsored or participated in market research to refine your message? ○ Yes ◉ No

Market Research Topic	
Brand Message	
Brand Mission Statement	

Community Committees

Do you have a community conservation committee? ○ Yes ◉ No

Enter the names of the community committees:

Training

Training Type	# of Trainings	# of Attendees	Description of Other	

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description	

Partnering Programs - Partners

Name	Type of Program
☐ CLCA?	
☐ Green Building Programs?	
☐ Master Gardeners?	
☐ Cooperative Extension?	
☐ Local Colleges?	
☐ Other	Green Business Program of Santa Barbara County

☐ Retail and wholesale outlet; name(s) and type(s) of programs:

Santa Barbara County Water Agency	Regional Water Efficiency Program

Partnering Programs - Newsletters

Number of newsletters per year

Number of customers per year

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new

Goleta Water District headquarters has a demonstration garden that is open during regular business hours.

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency

Comments:

All links would not fit in space provided and are provided with the description.

The fields in red are required.

Agency name: Goleta Water District

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Link to FAQs

2010

BMP 2.1 Public Outreach Cont'd

View MOU

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Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

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Public Information Programs	Importance	

Social Marketing Programs

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Market Research Topic	
Brand Message	
Brand Mission Statement	

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Do you have a community conservation committee? ○ Yes ○ No

Enter the names of the community committees:

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Training Type	# of Trainings	# of Attendees	Description of Other	

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Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description	

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Name	Type of Program
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☐ Green Building Programs?	
☐ Master Gardeners?	
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☐ Local Colleges?	
☐ Other	Green Business Program of Santa Barbara County

☐ Retail and wholesale outlet; name(s) and type(s) of programs:

Santa Barbara County Water Agency	Regional Water Efficiency Program

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Number of newsletters per year

Number of customers per year

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Describe other utilities your agency partners with, including electrical utilities

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Last name: Williams

Email: mwilliams@goletawater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2009

BMP 2.2 School Education Programs, Retail Agencies

View MOU

School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? (•) Yes ( ) No

Enter Wholesaler Names, separated by commas: Santa Barbara County Water Agency

[ ] Materials meet state education framework requirements?

Description of Materials: Free materials distributed to interested teachers.

[ ] Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students:

Number of students reached:

[ ] Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students: Water Conservation and County information distributed upon request for the Santa Barbara County Water Efficiency High School Video Contest

Number of Distribution:

Annual budget for school education program:

Description of all other water supplier education programs:

School Program Activities

Classroom presentations:

Number of presentations: 19 Number of attendees:

Large group assemblies:

Number of presentations: 1 Number of attendees: 500

Children's water festivals or other events:

Number of presentations: 3 Number of attendees: 55

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations: 3 Number of attendees: 30

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed

Staffing children's booths at events & festivals:

Number of booths | Number of attendees

Water conservation contests such as poster and photo:

Description

Number distributed

Offer monetary awards/funding or scholarships to students:

Number Offered: 3 | Total Funding: 150

Teacher training workshops:

Number of presentations | Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips | Number of participants

College internships in water conservation offered:

Number of internships: 1 | Total funding

Career fairs/workshops:

Number of presentations | Number of attendees

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable) | Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs): 0

Comments

All links would not fit in space provided and are provided with the description.

The fields in red are required.

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Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2010

BMP 2.2 School Education Programs, Retail Agencies

View MOU

School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? ○ Yes ○ No

Enter Wholesaler Names, separated by commas: Santa Barbara County Water Agency

☐ Materials meet state education framework requirements?

Description of Materials: Free materials distributed to interested teachers.

☐ Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students:

Number of students reached:

☐ Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students: Water Conservation and County information distributed upon request for the Santa Barbara County Water Efficiency High School Video Contest

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Description of all other water supplier education programs:

School Program Activities

Classroom presentations:

Number of presentations: 19 Number of attendees:

Large group assemblies:

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Number of presentations: 3 Number of attendees: 30

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed

Staffing children's booths at events & festivals:

Number of booths | Number of attendees

Water conservation contests such as poster and photo:

Description

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Offer monetary awards/funding or scholarships to students:

Number Offered: 3 | Total Funding: 150

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Number of presentations | Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips | Number of participants

College internships in water conservation offered:

Number of internships: 1 | Total funding

Career fairs/workshops:

Number of presentations | Number of attendees

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable) | Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs): 0

Comments

All links would not fit in space provided and are provided with the description.

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

2009

BMP 3 Residential

◉ **Traditional (Sections A - D)** ○ **Flex Track (All Sections)**

For Traditional Track please answer the fields within the traditional boxes.
For Flex Track option, please answer the fileds within the flex track boxes.
You must enter all measured water savings manually. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings were measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data points also requested in form which are necessary to show that the measure was implemented as described.

A) Residential Assistance / Leak Detection

Traditional / Flex Track

	Single Family	Multi Family	Total Water Savings AF/YR	Measured Water Savings AF/YR
Total Number of Accounts	13,303.00	1,582.00		
Total Number of Participants Overall	72.00	21.00		
Total Number of Leak Det Surveys	72.00	21.00		
Total Number of Showerheads	72.00	21.00		
Total Number of Faucet Aerators	0.00	0.00		
Total Number of Landscape Water Survey	72.00	12.00		

Number of Other Components: 3.00

Description of Other Components Distributed: Brochures, dye tabs, and catch cans provided at water checkup.

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)

(Enter the file name and Email file to Natalie@cuwcc.org)

B) High Efficiency Clothes Washers (HECWs)

Traditional / Flex Track

Number of incentives for HECWs with an AVERAGE Water Factor of 5.0: 48.00

Are Financial incentives provided for HECWs ? ◉ Yes ○ No

Has your Agency completed a HECW Market Penetration Study (this question does not impack your coverage report, purely informational) ○ Yes ◉ No

HECW Market Penetration Study Documents (Enter the file name and Email file to Natalie@cuwcc.org)

Measured water savings (AF/Year)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

C) WaterSense Specification (WSS) Toilets

(Agency must complete information for at least one coverage option (For Traditional 1, 2, or 3; For Flex Tarck 1, 2, 3, or 4).
You are encouraged to include information on other coverage options, as available.
If seeking credit for additional water savings, you must select Flex Track option)

Traditional

1. Retrofiton Resale Ordinance is in Place ○ Yes ⊙ No

If Yes, Choose A File (Enter the file name and Email file to Natalie@cuwcc.org)

2. A 75% Market Saturation Achieved ○ Yes ⊙ No

If yes, Choose A File (Enter the file name and Email file to Natalie@cuwcc.org)

3. WSS Toilets Installed

	Single Family	Multi Family
Number of WSS Toilets Installed		
Measured Water Savings AF/YR		

Flex Track

4. Non-WSS Toilets

	Single Family		Multi Family	
Type of Toilets	Number of Toilets	Water Savings	Number of Toilets	Water Savings
ULFT	8.00			

Description of Other Non-WSS Type of Toilets

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

D) WSS for New Residential Development

(Agency must complete information for at least one coverage option.You are encouraged to include information on other coverageoptions, as available. If seeking credit for additional water savings you must select the Flex Track option)

Traditional

	Single Family	Multi Family
Residential development Rebates	Yes ○ No ◉	Yes ○ No ◉
Recognition Programs	Yes ○ No ◉	Yes ○ No ◉
Reduced connection Fees	Yes ○ No ◉	Yes ○ No ◉
Ordinances	Yes ○ No ◉	Yes ○ No ◉

New Development Ordinance
(Enter the file name and Email file to Natalie@cuwcc.org)

Number of new Single Family Units built in Service Area 6.00

Number of new Multi Family Units built in Service Area 2.00

Flex Track

In the following table, enter one row for each incentive typr program you offer

List of Incentive Amount

Incentive Type	Incentive Amount	Number of WSS fixtures installed	Number of Participating		Measured Water Savings	
			Single Family	Multi Family	Single Family	Multi Family

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

For Traditional Option, Stop Here, do not go further.
For Flex Track Option, please continue...

Flex Track Menu Options

In addition to the measures on the BMP List, the Flex Track menu options may be implemented to meet the savings goal for this BMP. Fill in the water savings measures that your agency has implemented.

E) High bill contact with single-family and multi-family customers

Measured water savings (AF/Year)

Select the Types of Contact:

☐ Email ☐ Phone ☐ Letter ☐ Others (describe)

Upload sample of contact contents (email, letter, etc.)
– if applicable; enter the file name and email file to Natalie@cuwcc.org

Who initiated the contact: (Please Specify customer, agencies, or both)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)

(Enter the file name and Email file to Natalie@cuwcc.org)

F) Educate residential customers about the behavioral aspects of water conservation

Measured water savings (AF/Year)

Select types of educational methods used:	**# Events**	**# Customers Reached**
☐ Workshop		
☐ Community Event		
☐ Letter		
☐ On-Site Visit		
☐ Phone Call		
☐ Water Survey		
☐ Website Hit		
☐ Door Hanger		
☐ Other (Describe)		

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

G) Notify residential customers of leaks on the customer's side of the meter

Type of Notification (Describe)

How many were sent out?

Measured water savings (AF/Year)

Upload sample notification method(email, letter, etc.) – if applicable

(Enter the file name and Email file to Natalie@cuwcc.org

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

H) Provide bill or surcharge refunds for customers to repair leaks on the customer's side of the meter.

Number of Leaks Repaired

Number of bill adjustments/credits/refunds provided

Describe here or upload a document with a policy description below:

Measured water savings (AF/Year)

Upload file describing Policy (Enter the file name and Email file to Natalie@cuwcc.org)

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

I) Provide unique water savings fixtures that are not included in the BMP list above

Fixture or Device	Description	Quantity Installes	Measured water savings (AF/YR)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

J) Install residence water use monitors.

Type of Monitor	Brand	Number Installed	Measured water savings (AF/Year)
☐ Dashboard			
☐ Leak Detector			
☐ Data Logger			

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

K) Participate in programs that provide residences with school water conservation kits.

Number of Kits Distributed

Kit contents (including model of fixtures)

List of what was actually installed in the homes (number of showerheads, aerators etc.).

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

L) Implement an automatic meter reading program for residential customers.

AMR or AMI Select an Option Type of Network Select an Option

Number of connections installed

☐ Is your agency using these to contact high water-use customers?

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

OTHER Types of Measures.

Type of Program	Sample / Description	Measured Water Savings (AF/YR)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

Comments

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

2010 BMP 3 Residential

○ **Traditional (Sections A - D)** ○ **Flex Track (All Sections)**

For Traditional Track please answer the fields within the traditional boxes.
For Flex Track option, please answer the fileds within the flex track boxes.
You must enter all measured water savings manually. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings were measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data points also requested in form which are necessary to show that the measure was implemented as described.

A) Residential Assistance / Leak Detection

Traditional / Flex Track

	Single Family	Multi Family	Total Water Savings AF/YR	Measured Water Savings AF/YR
Total Number of Accounts	13,303.00	1,582.00		
Total Number of Participants Overall	72.00	21.00		
Total Number of Leak Det Surveys	72.00	21.00		
Total Number of Showerheads	72.00	21.00		
Total Number of Faucet Aerators	0.00	0.00		
Total Number of Landscape Water Survey	72.00	12.00		

Number of Other Components: 3.00

Description of Other Components Distributed: Brochures, dye tabs, and catch cans provided at water checkup.

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

B) High Efficiency Clothes Washers (HECWs)

Traditional / Flex Track

Number of incentives for HECWs with an AVERAGE Water Factor of 5.0: 48.00

Are Financial incentives provided for HECWs ? ○ Yes ○ No

Has your Agency completed a HECW Market Penetration Study
(this question does not impack your coverage report, purely informational) ○ Yes ○ No

HECW Market Penetration Study Documents (Enter the file name and Email file to Natalie@cuwcc.org)

Measured water savings (AF/Year)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

C) WaterSense Specification (WSS) Toilets

(Agency must complete information for at least one coverage option (For Traditional 1, 2, or 3; For Flex Tarck 1, 2, 3, or 4).
You are encouraged to include information on other coverage options, as available.
If seeking credit for additional water savings, you must select Flex Track option)

Traditional

1. Retrofiton Resale Ordinance is in Place ○ Yes ○ No

If Yes, Choose A File (Enter the file name and Email file to Natalie@cuwcc.org)

2. A 75% Market Saturation Achieved ○ Yes ○ No

If yes, Choose A File (Enter the file name and Email file to Natalie@cuwcc.org)

3. WSS Toilets Installed

	Single Family	Multi Family
Number of WSS Toilets Installed		
Measured Water Savings AF/YR		

Flex Track

4. Non-WSS Toilets

	Single Family		Multi Family	
Type of Toilets	Number of Toilets	Water Savings	Number of Toilets	Water Savings
1	8.00			

Description of Other Non-WSS Type of Toilets

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

D) WSS for New Residential Development

(Agency must complete information for at least one coverage option.You are encouraged to include information on other coverageoptions, as available. If seeking credit for additional water savings you must select the Flex Track option)

Traditional

	Single Family	Multi Family
Residential development Rebates	Yes ○ No ○	Yes ○ No ○
Recognition Programs	Yes ○ No ○	Yes ○ No ○
Reduced connection Fees	Yes ○ No ○	Yes ○ No ○
Ordinances	Yes ○ No ○	Yes ○ No ○

New Development Ordinance
(Enter the file name and Email file to Natalie@cuwcc.org)

Number of new Single Family Units built in Service Area 6.00

Number of new Multi Family Units built in Service Area 2.00

In the following table, enter one row for each incentive typr program you offer

List of Incentive Amount

Incentive Type	Incentive Amount	Number of WSS fixtures installed	Number of Participating		Measured Water Savings	
			Single Family	Multi Family	Single Family	Multi Family

Flex Track

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

For Traditional Option, Stop Here, do not go further.
For Flex Track Option, please continue...

Flex Track Menu Options

In addition to the measures on the BMP List, the Flex Track menu options may be implemented to meet the savings goal for this BMP. Fill in the water savings measures that your agency has implemented.

E) High bill contact with single-family and multi-family customers

Measured water savings (AF/Year)

Select the Types of Contact:

☐ Email ☐ Phone ☐ Letter ☐ Others (describe)

Upload sample of contact contents (email, letter, etc.)
– if applicable; enter the file name and email file to Natalie@cuwcc.org

Who initiated the contact: (Please Specify customer, agencies, or both)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)

(Enter the file name and Email file to Natalie@cuwcc.org)

F) Educate residential customers about the behavioral aspects of water conservation

Measured water savings (AF/Year)

Select types of educational methods used:	**# Events**	**# Customers Reached**
☐ Workshop		
☐ Community Event		
☐ Letter		
☐ On-Site Visit		
☐ Phone Call		
☐ Water Survey		
☐ Website Hit		
☐ Door Hanger		
☐ Other (Describe)		

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

G) Notify residential customers of leaks on the customer's side of the meter

Type of Notification (Describe)

How many were sent out?

Measured water savings (AF/Year)

Upload sample notification method(email, letter, etc.) – if applicable

(Enter the file name and Email file to Natalie@cuwcc.org

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

H) Provide bill or surcharge refunds for customers to repair leaks on the customer's side of the meter.

Number of Leaks Repaired

Number of bill adjustments/credits/refunds provided

Describe here or upload a document with a policy description below:

Measured water savings (AF/Year)

Upload file describing Policy (Enter the file name and Email file to Natalie@cuwcc.org)

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

I) Provide unique water savings fixtures that are not included in the BMP list above

Fixture or Device	Description	Quantity Installes	Measured water savings (AF/YR)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

J) Install residence water use monitors.

Type of Monitor	Brand	Number Installed	Measured water savings (AF/Year)
☐ Dashboard			
☐ Leak Detector			
☐ Data Logger			

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

K) Participate in programs that provide residences with school water conservation kits.

Number of Kits Distributed

Kit contents (including model of fixtures)

List of what was actually installed in the homes (number of showerheads, aerators etc.).

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

L) Implement an automatic meter reading program for residential customers.

AMR or AMI Select an Option Type of Network Select an Option

Number of connections installed

☐ Is your agency using these to contact high water-use customers?

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

OTHER Types of Measures.

Type of Program	Sample / Description	Measured Water Savings (AF/YR)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

Comments

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

2009

Link to FAQs

View MOU

BMP 4 CII

Traditional ○ (Section A - L)

Flex Track ○ (All Sections)

For Traditional Track please answer the fields within the traditional boxes.
For Flex Track option, please answer the fileds within the flex track boxes.

You must enter all measured water savings manually in the summary cells on the right. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings was measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data points also requested in the flex track data entry form which are necessary to show that the measure was implemented as described.

CII Type of measure implemented

Traditional

A) High - Efficiency Toilets.

Measured water savings (AF/Year)

Number: 0

Type of program: Select an Option

Other type of program:

Flex Track

Do you accept the Council's default savings number for this measure? ○Yes ○No

Council's Annual Water Savings 0.041748 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

B) High -Efficiency Urinals (0.5 gpf)

Flex Track

Traditional

Number 0

Type of program

Other type of program

Measured water savings (AF/Year)

Do you accept the Council's default savings number for this measure? ◯Yes◯No

Council's Annual Water Savings 0.069086 AF per device

If not, Please provide the following

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

C) Ultra Low Volume Urinals (0.125 gpf)

Flex Track

Traditional

Number 0

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Do you accept the Council's default savings number for this measure? ◯Yes◯No

Council's Annual Water Savings 0.080603 AF per device

If not, Please provide the following

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

D) Zero Consumption Urinals (0.0 gpf)

Flex Track

Traditional

Number 0

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Do you accept the Council's default savings number for this measure? ◯Yes ◯ No

Flex Track

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

Council's Annual Water Savings 0.0921146 AF per device

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

E) Commercial High - Efficiency Single Load Clothes Washers

Traditional

Number 0

Type of program

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Counsil's default savings number for this measure ? ◯Yes◯No

Council's Annual Water Savings 0.116618 AF per device

If not , Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

F) Cooling Tower Conductivity Controllers.

Traditional

Number

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ◯Yes◯No

Council's Annual Water Savings 1.032250 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

G) Cooling Tower pH Controllers

Traditional

Number: 0

Type of program: Select an Option

Other type of program:

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ○Yes○No

Council's Annual Water Savings 3.981543 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

H) Connectionless Food Steamers.

Traditional

Number: 0

Type of program

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ○Yes○No

Council's Annual Water Savings 0.25 AF per Steamer Compartment

mIf not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

I) Medical Equipment Steam Sterilizers

Flax Track

Traditional

Number: 0

Type of program

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure? ○Yes○No

Council's Annual Water Savings 1.538 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org

J) Water - Efficient Ice Machines.

Traditional

Number 0

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ○Yes○No

If not, Please provide the following:

Council's Annual Water Savings 0.0834507 AF per device

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org

K) Pressurized Water Brooms.

Traditional

Number 0

Type of program Incentive

Other type of program Rebate offered through Smart Rebate Program. No applications for Water Brooms were received.

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure? ○Yes○No

Council's Annual Water Savings 0.1534 AF per device

Flex Track

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

L) Dry Vacuum Pumps.

Traditional

Number 0

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ○Yes○No

Council's Annual Water Savings 0.064 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Traditional Reporting Stop Here, Do not continue

Flex Track Reporing Please Continue...

M) Industrial Process Water Use Reduction.

Number

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Type of Process Water Reduced

If re-using water, what was the secondary use of the water? (such as pre-rince cycle or landscaping)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

N) Commercial Laundry Retrofits.

Number of customers

Measured water savings (AF/Year)

Type of customer

- ☐ hotels
- ☐ campuses
- ☐ prisons
- ☐ laundromats

Lease / own machines

○ Lease ○ Own Machines ○ Both

Type of program

Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

O) Industrial Laundry Retrofits.

Measured water savings (AF/Year)

Total Number of customers

Total Volume of laundry processed annually

Select an Option

Type of program

Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

P) Filter Upgrades (for pools, spas, and fountains).

Number of pools upgraded

Number of spas upgraded

Number of fountains upgraded

Measured water savings (AF/Year)

Type of program — Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Q) Car Wash Reclamation Systems

Measured water savings (AF/Year)

	Conveyor	In-bay
Total Number of program participants (accounts)		
Total Number of vehicles washed annually		

Do you accept the Council's default savings number for this measure? ○Yes○No

Council's Annual Water Savings 0.00004607 (or 15 gals) per vehicle

If not, Please provide the following:

Total Measured Water Savings(AF/Year)	
Measure life (years)	
Lifetime water savings (years)	

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

R) Wet Cleaning.

		Measured water savings (AF/Year)
Brief description of program		

Total Measured Water Savings(AF/Year)	
Measure life (years)	
Lifetime water savings (years)	

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

S) Water Audits (To avoid double counting, do not include device/replacement water savings.)

Number of water audits by type of business

Measured water savings (AF/Year)

Auto	
Food	
Health	
Hotels	

Manufacturing	
Membership	
Multi-use	
Office	
Religious	
Restaurant	
Retail/ Wholesale	
School	
Other (with description)	
Description of Other	

Total Measured Water Savings(AF/Year)	
Measure life (years)	
Lifetime water savings (years)	

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

T) Clean In Place (CIP) Technology (such as bottle sterilization in a beverage processing plant)

		Measured water savings (AF/Year)
Number of customers		
Type of program	Select an Option	
Other type of program		

Total Measured Water Savings(AF/Year)	
Measure life (years)	

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

U) Waterless Wok

Number

Type of program — Select an Option

Measured water savings (AF/Year)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

V) Alternative On-site Water Sources (For Rain Water Harvesting, commercial rain barrels are excluded. For Foundation Drain Water, exclude permeable paving.)

Measured water savings (AF/Year)

Select type	Number	Description
☐ Cooling Condensate		
☐ Foundation Drain Water		
☐ Gray Water		
☐ Storm Water		
☐ Rain Water		
☐ Pond and Water Feature Recycling		

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

W) Sub - metering

Measured water savings (AF/Year)

Select type	Number	Description
☐ Condominiums		
☐ Apartments		
☐ Mobile Homes		

Do you accept the Council's default savings numbers for this measure? ○Yes○No

Council's Annual Water Savings
Appartments & Condos=0.024419 AF/YR
Mobile Home = 0.056774 AF/Yr

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

X) High Efficiency Showerheads

Measured water savings (AF/Year)

Number

Type of program Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Y) Faucet Flow Restrictors

Measured water savings (AF/Year)

Number

Type of program — Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Z) Water Efficient Dishwashers

Measured water savings (AF/Year)

Select type — Number

- ☐ Rack
- ☐ Conveyor
- ☐ Other

Description of Other

Type of program — Select an Option

Other type of program

Total Measured Water Savings(AF/Year)
Measure life (years)
Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

AA) Hot Water on Demand

Measured water savings (AF/Year)

Number
Type of program — Select an Option
Other type of program

Total Measured Water Savings(AF/Year)
Measure life (years)
Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

BB) Pre-rinse Spray Valves of 1.3 gpm (gallons per minute) or less

Measured water savings (AF/Year)

Number
Type of program — Select an Option
Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

CC) Central Flush Systems

Measured water savings (AF/Year)

Number

Type of program — Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Other Measures chosen by the Agency

Measured water savings (AF/Year)

Description of program

Sample (if applicable)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

The fields in red are required.

Agency name: Goleta Water District

Reporting unit name (District name): Goleta Water District

Reporting unit number: 126

Primary contact:

First name: Misty

Last name: Williams

Email: mwilliams@goletawater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

2010

Link to FAQs

View MOU

BMP 4 CII

Traditional ○ (Section A - L)

Flex Track ○ (All Sections)

For Traditional Track please answer the fields within the traditional boxes.
For Flex Track option, please answer the fileds within the flex track boxes.

You must enter all measured water savings manually in the summary cells on the right. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings was measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data points also requested in the flex track data entry form which are necessary to show that the measure was implemented as described.

CII Type of measure implemented

Traditional

A) High - Efficiency Toilets.

Measured water savings (AF/Year)

Number: 0

Type of program: Select an Option

Other type of program:

Flex Track

Do you accept the Council's default savings number for this measure? ○Yes ○No

Council's Annual Water Savings 0.041748 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

B) High -Efficiency Urinals (0.5 gpf)

Flex Track

Traditional

Number 0

Type of program

Other type of program

Measured water savings (AF/Year)

Do you accept the Council's default savings number for this measure? ◯Yes◯No

Council's Annual Water Savings 0.069086 AF per device

If not, Please provide the following

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

C) Ultra Low Volume Urinals (0.125 gpf)

Flex Track

Traditional

Number 0

Type of program Secect an Option

Other type of program

Measured water savings (AF/Year)

Do you accept the Council's default savings number for this measure? ◯Yes◯No

Council's Annual Water Savings 0.080603 AF per device

If not, Please provide the following

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

D) Zero Consumption Urinals (0.0 gpf)

Flex Track

Traditional

Number 0

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Do you accept the Council's default savings number for this measure? ◯Yes ◯ No

Flex Track

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

Council's Annual Water Savings 0.0921146 AF per device

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

E) Commercial High - Efficiency Single Load Clothes Washers

Traditional

Number 0

Type of program

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Counsil's default savings number for this measure ? ◯Yes◯No

Council's Annual Water Savings 0.116618 AF per device

If not , Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

F) Cooling Tower Conductivity Controllers.

Traditional

Number

Type of program Secect an Option

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ◯Yes◯No

Council's Annual Water Savings 1.032250 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

G) Cooling Tower pH Controllers

Traditional

Number: 0

Type of program: Select an Option

Other type of program:

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ○Yes○No

Council's Annual Water Savings 3.981543 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

H) Connectionless Food Steamers.

Traditional

Number: 0

Type of program

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ○Yes○No

Council's Annual Water Savings 0.25 AF per Steamer Compartment

mIf not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet

Enter the file name and Email to Natalie@cuwcc.org

I) Medical Equipment Steam Sterilizers

Flax Track

Traditional

Number: 0

Type of program

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure? ○Yes○No

Council's Annual Water Savings 1.538 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org

J) Water - Efficient Ice Machines.

Traditional

Number 0

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ○Yes○No

If not, Please provide the following:

Council's Annual Water Savings 0.0834507 AF per device

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org

K) Pressurized Water Brooms.

Traditional

Number 0

Type of program 1

Other type of program Rebate offered through Smart Rebate Program. No applications for Water Brooms were received.

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure? ○Yes○No

Council's Annual Water Savings 0.1534 AF per device

Flex Track

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

L) Dry Vacuum Pumps.

Traditional

Number 0

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Flex Track

Do you accept the Council's default savings number for this measure ? ○Yes○No

Council's Annual Water Savings 0.064 AF per device

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Traditional Reporting Stop Here, Do not continue

Flex Track Reporing Please Continue...

M) Industrial Process Water Use Reduction.

Number

Type of program Select an Option

Other type of program

Measured water savings (AF/Year)

Type of Process Water Reduced

If re-using water, what was the secondary use of the water? (such as pre-rince cycle or landscaping)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

N) Commercial Laundry Retrofits.

Number of customers

Measured water savings (AF/Year)

Type of customer

- ☐ hotels
- ☐ campuses
- ☐ prisons
- ☐ laundromats

Lease / own machines

○ Lease ○ Own Machines ○ Both

Type of program

Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

O) Industrial Laundry Retrofits.

Measured water savings (AF/Year)

Total Number of customers

Total Volume of laundry processed annually

Select an Option

Type of program

Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

P) Filter Upgrades (for pools, spas, and fountains).

Number of pools upgraded

Number of spas upgraded

Number of fountains upgraded

Measured water savings (AF/Year)

Type of program — Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Q) Car Wash Reclamation Systems

Measured water savings (AF/Year)

	Conveyor	In-bay
Total Number of program participants (accounts)		
Total Number of vehicles washed annually		

Do you accept the Council's default savings number for this measure? ○Yes○No

Council's Annual Water Savings 0.00004607 (or 15 gals) per vehicle

If not, Please provide the following:

Total Measured Water Savings(AF/Year)	
Measure life (years)	
Lifetime water savings (years)	

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

R) Wet Cleaning.

		Measured water savings (AF/Year)
Brief description of program		

Total Measured Water Savings(AF/Year)	
Measure life (years)	
Lifetime water savings (years)	

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

S) Water Audits (To avoid double counting, do not include device/replacement water savings.)

Number of water audits by type of business

Measured water savings (AF/Year)

Auto	
Food	
Health	
Hotels	

Manufacturing	
Membership	
Multi-use	
Office	
Religious	
Restaurant	
Retail/ Wholesale	
School	
Other (with description)	
Description of Other	

Total Measured Water Savings(AF/Year)	
Measure life (years)	
Lifetime water savings (years)	

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

T) Clean In Place (CIP) Technology (such as bottle sterilization in a beverage processing plant)

		Measured water savings (AF/Year)
Number of customers		
Type of program	Select an Option	
Other type of program		

Total Measured Water Savings(AF/Year)	
Measure life (years)	

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

U) Waterless Wok

Number

Type of program — Select an Option

Measured water savings (AF/Year)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

V) Alternative On-site Water Sources (For Rain Water Harvesting, commercial rain barrels are excluded. For Foundation Drain Water, exclude permeable paving.)

Measured water savings (AF/Year)

Select type	Number	Description
☐ Cooling Condensate		
☐ Foundation Drain Water		
☐ Gray Water		
☐ Storm Water		
☐ Rain Water		
☐ Pond and Water Feature Recycling		

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

W) Sub - metering

Measured water savings (AF/Year)

Select type	Number	Description
☐ Condominiums		
☐ Apartments		
☐ Mobile Homes		

Do you accept the Council's default savings numbers for this measure? ○Yes○No

Council's Annual Water Savings
Appartments & Condos=0.024419 AF/YR
Mobile Home = 0.056774 AF/Yr

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

X) High Efficiency Showerheads

Measured water savings (AF/Year)

Number

Type of program Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Y) Faucet Flow Restrictors

Measured water savings (AF/Year)

Number

Type of program — Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Z) Water Efficient Dishwashers

Measured water savings (AF/Year)

Select type — Number

- ☐ Rack
- ☐ Conveyor
- ☐ Other

Description of Other

Type of program — Select an Option

Other type of program

Total Measured Water Savings(AF/Year)
Measure life (years)
Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

AA) Hot Water on Demand

Measured water savings (AF/Year)

Number
Type of program — Select an Option
Other type of program

Total Measured Water Savings(AF/Year)
Measure life (years)
Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

BB) Pre-rinse Spray Valves of 1.3 gpm (gallons per minute) or less

Measured water savings (AF/Year)

Number
Type of program — Select an Option
Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

CC) Central Flush Systems

Measured water savings (AF/Year)

Number

Type of program — Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Other Measures chosen by the Agency

Measured water savings (AF/Year)

Description of program

Sample (if applicable)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Appendix F

Water Shortage Contingency Plan

- Ordinance 91-3
- Draft Ordinance Updating Ordinance 91-3
- Relevant Sections from Goleta Water District's System Reliability Report

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Goleta Water District Ordinance 91-3

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ORDINANCE NO. 91-3

AN EMERGENCY ORDINANCE OF THE
BOARD OF DIRECTORS OF GOLETA WATER DISTRICT
MODIFYING THE ADMINISTRATION OF WATER ALLOTMENT POLICIES

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF GOLETA WATER DISTRICT as follows:

Section 1. Purpose and Scope

This ordinance adopts regulations to deal with the water shortage emergency which the Board has found to exist. These regulations are effective immediately and shall be effective until the Board finds that the drought-induced water shortage no longer exists.

Section 2. Findings

This Board finds, determines and declares that the following facts are true:

1. This Board has conducted a noticed public meeting on May 28, 1991 to determine whether a drought induced water shortage emergency exists and, if so, what regulations should now be adopted in response to that shortage.
2. This Board finds that the demand for water by District customers can be met during water year 1991-92, but only so long as the actual consumption of water remains at a level close to that experienced during 1990-91. If, instead, water consumption now returns to the unrestricted level of use that existed before the current drought began, the District will face a substantial shortage.
3. To avoid that shortage, this Board adopts the following regulations, and finds that the regulations set forth herein are necessary and proper to protect the water supply for human consumption, sanitation, and fire protection during the duration of the shortage.

Section 3. Definitions

The following terms are defined for the purposes of the ordinance

a. "Customer" means a person receiving water from the water distribution system of the District.
b. "District" means Goleta Water District.
c. "General Manager" means the general manager of the District, or the Manager's designate
d. "Seasonally adjusted average annual usage" means the amount of water delivered to each customer's property during the bimonthly period's from January 1, 1984 to December 31, 1988.

Section 4. Prohibition of Certain Uses

a. No customer shall waste water. As used herein, the term "waste" means:
    1. Use of potable water to irrigate grass, lawns, ground-cover, shrubbery, crops, vegetation, and trees between the hours of 10:00 A.M. and 4:00 P.M. or in such a manner as to result in runoff for more than five 5 minutes;
    2. Use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground or other hard surfaced areas by direct application;

3. Allowing potable water to escape from breaks within the customer's plumbing system for more than eight hours after the customer is notified or discovers the break.

b. The General Manager may allow potable water to be used for irrigation for commercial nurseries or farms between the hours of 10:00 A.M. and 4:00 P.M.

Section 5. Limits on Certain Uses

a. The following classes of use are hereby created:
   1. "Single family residential" which consists of water service to land improved with structures designed to serve as a residence for a single family.
   2. "Multiple family residential" which consists of water service to land improved with structures designed to serve as a residence f or more than a single family.
   3. "Nonresidential" which consists of water service to land improved with structures designed to serve for other than residential uses. Commercial, recreational, charitable, agricultural and cultural uses are included within this class.
   4. "Contractual" which consists of water service to La Cumbre Mutual Water Company, the University of California at Santa Barbara, and the City of Santa Barbara pursuant to contracts with each of these entities.

b. Water use in excess of the monthly amounts established below shall be subject to a charge at an increased rate in accordance with Section 7. herein:
   1. Each customer in the single family residential class shall receive no more than 11 hundred cubic feet (HCF) per monthly period plus 55% of the seasonally adjusted average usage in excess of 11 HCF.
   2. Each customer in the multiple family residential class shall receive no more than 7 HCF per billing period plus 40% of the seasonally adjusted average annual usage in excess of 7 HCF.
   3. Each customer in the nonresidential class shall receive during each monthly period no more than 85% of the seasonally adjusted average annual usage.
   4. Each commercial account used only for ornamental landscaping shall receive 55% of the seasonally adjusted average annual usage.
   5. Each customer in the contractual class shall receive during a monthly billing period no more than 85% of the seasonally adjusted average annual usage.

c. The General Manager shall classify each customer and calculate each customer's allotment. The allotment shall reflect seasonal patterns. Each customer shall receive notice of the allotment specified above, or as modified in accordance with Section 6. herein, on each monthly billing for service. Each new customer not already in receipt of an allotment in accordance with previous ordinance No. 90-2, shall be notified of the General Manager's determination by first class mail within 30 days of the commencement of water service.

d. Any customer may contest the General Manager's classification on the basis of use or the General Manager's allotment on the basis of hardship or incorrect calculation. Appeals shall be processed as set forth below.

Section 6. Appeals

a. Any person who wishes to appeal the classification or allotment shall do so in writing by using the forms provided by the District and submitted to the General Manager, or the Manager's designate.

b. If the General Manager and the applicant are unable to reach accord, then the appeal shall be heard by the Resource Management Committee of the Board of Directors with a recommendation for approval or denial.
c. All appeals shall be reported monthly to the Board of Directors as a part of the Water Supply Report.

Section 7. Water Use Subject to Increased Charge

A urban customer who exceeds the allotment established in conformance with Section 5. or 6. herein for any monthly period shall pay for the water consumed in excess of the allotment at a unit rate established from time to time by resolution of this Board of Directors.

An agricultural, recreational or reclamation customer who exceeds the allotment established in conformance with Section 5. or 6. herein for any annual period shall pay for the water consumed in excess of the allotment at a unit rate established from time to time by Resolution of this Board of Directors.

Section 8. Rule Making

The General Manager shall present periodical reports to the Board concerning the effectiveness of this ordinance, including a report within four months of the date of adoption of this ordinance concerning the first 3 months of ordinance administration. Said Reports shall review the nature and scope of appeals and exceptions. The Board shall periodically consider the adoption of rules implementing this ordinance in light of the Manager's reports. Such rules shall be adopted by the Board by resolution and shall deal with the administration of this ordinance. Any proposal to change the meaning of this ordinance shall be adopted by the Board by ordinance following a duly-noticed public hearing.

Section 9. Urgency

This ordinance is an urgency ordinance. It is necessary that the regulations set forth in this ordinance be adopted as .set forth herein in order to protect the supply of water for human consumption, sanitation and fire protection.

Section 10. Miscellaneous

Ordinance No. 90-2 is hereby repealed on the effective date of this ordinance.

Draft Ordinance Updating Ordinance 91-3

Draft Water Shortage Contingency ORDINANCE (Modeled on Ordinance NO. 91-3)

AN ORDINANCE OF THE

BOARD OF DIRECTORS OF GOLETA WATER DISTRICT

MODIFYING THE ADMINISTRATION OF WATER ALLOTMENT POLICIES

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF GOLETA WATER DISTRICT as follows:

Section 1. Purpose and Scope

This ordinance adopts regulations to deal with water shortages, which the Board has found to exist. These regulations are effective immediately and shall be effective until the Board finds that the drought-induced water shortage no longer exists.

Section 2. Findings

This Board finds, determines and declares that the following facts are true:

1. California Water Code Section 350 provides that the Board of Directors has the authority to declare a water shortage emergency condition. California Water Code Section 353 enables the Board of Directors to adopt regulations and restrictions to conserve the water supply for the greatest public benefit.
2. This Board has conducted a noticed public meeting on [INSERT DATE] to determine whether a drought induced water shortage emergency exists and, if so, what regulations should now be adopted in response to that shortage.
3. This Board finds that the demand for water by District customers can be met so long as the actual consumption of water remains at a level close to that experienced during [INSERT YEAR]. If, instead, water consumption now returns to the unrestricted level of use that existed before the current drought began, the District will face a substantial shortage.
4. To avoid that shortage, this Board adopts the following regulations, and finds that the regulations set forth herein are necessary and proper to protect the water supply for human consumption, sanitation, and fire protection during the duration of the shortage.

Section 3. Definitions

The following terms are defined for the purposes of the ordinance:

a. "Customer" means a person receiving water from the water distribution system of the District.
b. "District" means Goleta Water District.
c. "General Manager" means the general manager of the District, or the Manager's designate.
d. "Seasonally adjusted average annual usage" means the amount of water delivered to each customer's property during the bimonthly period's from [INSERT 5-YEAR PERIOD].

Section 4. Prohibition of Certain Uses

a. No customer shall waste water. As used herein, the term "waste" means:
    1. Use of potable water to irrigate grass, lawns, ground-cover, shrubbery, crops, vegetation, and trees between the hours of 10:00 A.M. and 4:00 P.M. or in such a manner as to result in runoff for more than five 5 minutes;
    2. Use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground or other hard surfaced areas by direct application;
    3. Allowing potable water to escape from breaks within the customer's plumbing system for more than eight hours after the customer is notified or discovers the break.
b. The General Manager may allow potable water to be used for irrigation for commercial nurseries or farms between the hours of 10:00 A.M. and 4:00 P.M.

Section 5. Limits on Certain Uses

a. The following classes of use are hereby created:
    1. "Single family residential" which consists of water service to land improved with structures designed to serve as a residence for a single family.
    2. "Multiple family residential" which consists of water service to land improved with structures designed to serve as a residence f or more than a single family.
    3. "Nonresidential" which consists of water service to land improved with structures designed to serve for other than residential uses. Commercial, recreational, charitable, agricultural and cultural uses are included within this class.
    4. "Contractual" which consists of water service to La Cumbre Mutual Water Company, the University of California at Santa Barbara, and the City of Santa Barbara pursuant to contracts with each of these entities.
b. Water use in excess of the monthly amounts established below shall be subject to a charge at an increased rate in accordance with Section 7, herein:
    1. Each customer in the single family residential class shall receive no more than 11 hundred cubic feet (HCF) per monthly period plus 55% of the seasonally adjusted average usage in excess of 11 HCF.
    2. Each customer in the multiple family residential class shall receive no more than 7 HCF per billing period plus 40% of the seasonally adjusted average annual usage in excess of 7 HCF.
    3. Each customer in the nonresidential class shall receive during each monthly period no more than 85% of the seasonally adjusted average annual usage.
    4. Each commercial account used only for ornamental landscaping shall receive 55% of the seasonally adjusted average annual usage.
    5. Each customer in the contractual class shall receive during a monthly billing period no more than 85% of the seasonally adjusted average annual usage.
c. The General Manager shall classify each customer and calculate each customer's allotment. The allotment shall reflect seasonal patterns. Each customer shall receive notice of the allotment specified above, or as modified in accordance with Section 6 herein, on each monthly billing for service. Each new customer not already in receipt of an allotment in accordance with previous

ordinance No. 90-2, shall be notified of the General Manager's determination by first class mail within 30 days of the commencement of water service.

d. Any customer may contest the General Manager's classification on the basis of use or the General Manager's allotment on the basis of hardship or incorrect calculation. Appeals shall be processed as set forth below.

Section 6. Appeals

a. Any person who wishes to appeal the classification or allotment shall do so in writing by using the forms provided by the District and submitted to the General Manager, or the Manager's designate.
b. If the General Manager and the applicant are unable to reach accord, then the appeal shall be heard by the Resource Management Committee of the Board of Directors with a recommendation for approval or denial.
c. All appeals shall be reported monthly to the Board of Directors as a part of the Water Supply Report.

Section 7. Water Use Subject to Increased Charge

An urban customer who exceeds the allotment established in conformance with Section 5 or 6 herein for any monthly period shall pay for the water consumed in excess of the allotment at a unit rate established from time to time by resolution of this Board of Directors.

An agricultural, recreational or reclamation customer who exceeds the allotment established in conformance with Section 5 or 6 herein for any annual period shall pay for the water consumed in excess of the allotment at a unit rate established from time to time by Resolution of this Board of Directors.

Section 8. Rule Making

The General Manager shall present periodical reports to the Board concerning the effectiveness of this ordinance, including a report within four months of the date of adoption of this ordinance concerning the first 3 months of ordinance administration. Said Reports shall review the nature and scope of appeals and exceptions. The Board shall periodically consider the adoption of rules implementing this ordinance in light of the Manager's reports. Such rules shall be adopted by the Board by resolution and shall deal with the administration of this ordinance. Any proposal to change the meaning of this ordinance shall be adopted by the Board by ordinance following a duly-noticed public hearing.

Section 9. Urgency

This ordinance is an urgency ordinance. It is necessary that the regulations set forth in this ordinance be adopted as forth herein in order to protect the supply of water for human consumption, sanitation and fire protection.

Sections from System Reliability Report

Section 7
System Reliability Evaluation

Section 6 addressed the water infrastructure needs for normal operations of the year 2000 and 2020 distribution systems. This section reviews the potential impacts of water supply emergencies and droughts on the District's water supply and water distribution system.

7.1 Description of Emergency and Drought Scenarios

Earthquakes, landslides, floods and other natural events can impact water treatment and conveyance facilities, potentially disrupting water service for an extended period of time. In addition to emergencies caused by natural disasters, water supply and distribution systems can also be impacted by normal flood and drought cycles. Eight emergency/ drought scenarios have been identified to assess how such events could impact the District's water supply and distribution system. Five emergency scenarios have been identified for the purposes of planning for events, which could impact 20 percent or more of the District's customers. Three drought scenarios have also been identified. A summary of each of these scenarios is provided below.

- Scenario 1 - Loss of Coastal Branch pipeline (loss of State Project water). Failure of the Coastal Aqueduct or other State Water Project facilities would reduce the District's available water supply by 4,500 AFY. During such an event, it is assumed that the District would receive water from Lake Cachuma and the District wells, and that water would not be available from the City of Santa Barbara interconnections, as the City would be facing a similar water supply emergency. For planning purposes, it is assumed that such an emergency would last for up to 2 months.

- Scenario 2 - Loss of Tecolote Tunnel (loss of State Project and Cachuma water). Failure of the Tecolote Tunnel would result in a loss of both State Project and Lake Cachuma water, reducing the District's available water supply by 13,421 AFY. During this scenario, the only available water supply would be the District's groundwater wells. This emergency scenario is assumed to have 4-month duration.

- Scenario 3 - Loss of the 42-inch Lateral. The 42-inch lateral is one of the District's two main supply pipelines, delivering water from the Corona Del Mar WTP and Reservoir to the central and east portions of the District. A break in this pipeline would impede the District's ability to move water through the distribution system. For planning purposes, it is assumed that repair of the 42-inch Lateral could take up to 2 months.

- Scenario 4 - Loss of the Glen Annie Lateral. The Glen Annie Lateral is the District's second main supply pipeline, delivering water from the Corona Del Mar WTP and the Ellwood Reservoir to the west portion of the water distribution system. It is assumed that the Glen Annie Lateral could require up to I month to repair.

- Scenario 5 - Loss of the Corona Del Mar Water Treatment Plant. With the groundwater wells currently offline, the Corona Del Mar WTP is the District's sole potable water source. In the event of a major process failure, fire or severe earthquake, water service from the treatment plant could be interrupted. During such a scenario, it is assumed that the District would utilize its groundwater wells and interconnections with the City of Santa Barbara for water supply. It is assumed that the

treatment plant could be offline for up to I month.

The potential drought scenarios include:

- Scenario 6 - State Project water cutbacks. During a drought or because of other environmental considerations, the State Water Project could cutback its deliveries of water. These cutbacks are calculated based on the District's State Water Project entitlement of 7,000 AFY.

- Scenario 7- Cachuma water cutbacks. Cachuma water supplies are currently being assessed based on a 25,714 AFY yield agreed upon by the COMB member agencies. The District is entitled to 9,421 acre-feet of water in normal water years, that is, when Cachuma storage levels are above 100,000 acre-feet. This 9,421 AFY entitlement includes 100 AFY transferred annually from TD Bishop (Camino Real Shopping Center) in exchange for service. When water levels drop below the 100,000 acre-foot threshold, water deliveries to the member agencies will be cutback.

- Scenario 8 - State Project and Cachuma water cutbacks. This scenario addresses the potential for cutbacks of SWP and Cachuma water supplies to occur concurrently.

The last scenario addresses the potential loss of the District's groundwater wells.

- Scenario 9- Loss of Groundwater Wells. The District's groundwater supply could be interrupted on a long-term basis due to degradation in the groundwater extraction capacity or water quality, or changes in regulatory requirements for groundwater quality. Service could also be interrupted on a short-term basis due to loss of power, equipment failure, etc.

7.2 Existing System Reliability

A measure of system reliability is its ability to contend with water supply emergencies and droughts. One way to gage this ability is by the level of service (LOS) provided during such events. For the purpose of this study, LOS is defined as the ratio of the water supply capacity during an emergency or drought scenario to the total water demand.

Appendix G

Adoption Resolution

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RESOLUTION NO. 2011-35

RESOLUTION OF THE GOLETA WATER DISTRICT BOARD OF DIRECTORS ADOPTING THE 2010 URBAN WATER MANAGEMENT PLAN

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

WHEREAS, the Act requires that said Plan be updated and adopted every five years; and

WHEREAS, Goleta Water District is an urban water supplier for purposes of the Act; and

WHEREAS, the 2010 Urban Water Management Plan has been prepared at the direction of Goleta Water District; and

WHEREAS, Goleta Water District has prepared those portions of the plan applicable to Goleta Water District in accordance with the Act and SBX7-7 and, in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its 2010 Plan; and

WHEREAS, as authorized by Water Code Section 10620(e), Goleta Water District staff has prepared the 2010 Urban Water Management Plan with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its 2010 Plan, and has also utilized the California Department of Water Resources Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan (March 2011) and the California Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Act of 2009) (February 2011) in preparing the 2010 Urban Water Management Plan; and

WHEREAS, in accordance with applicable law, including Water Code sections 10608.26 and 10642, and Government Code section 6066, a Notice of a Public Hearing regarding Goleta Water District adoption of the 2010 Urban Water Management Plan was published within the jurisdiction of the Goleta Water District on October 24, 2011 and November 1, 2011; and

WHEREAS, in accordance with applicable law, a public hearing was held on Tuesday November 8, 2011 at 5:30 pm, or soon thereafter, in the boardroom of the offices of the Goleta Water District, at 4699 Hollister Ave., Goleta, CA 93110, in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the 2010 Plan and issues related thereto; and

WHEREAS, pursuant to said public hearing on the 2010 Urban Water Management Plan, Goleta Water District, among other things, encouraged the active involvement of diverse social, cultural, and economic elements of the population within Goleta Water District's service area with regard to the preparation of the Plan, allowed community input regarding Goleta Water District's implementation plan for complying with SBX7-7, considered the economic impacts of Goleta Water District's implementation plan for complying with SBX7-7, and adopted Method 3 under Water Code section 10608.20(b) for determining its water use targets; and

WHEREAS, pursuant to Water Code Section 10652 and California Code of Regulations (CCR), Title 14, Section 15282(v), the preparation and adoption of the 2010 Urban Water Management Plan is statutorily exempt from the California Environmental Quality Act (CEQA) (Division 13, commencing with Section 21000, of the Public Resources Code); and

WHEREAS, the Board of Directors desires to adopt the 2010 Urban Water Management Plan in order to comply with the Act and SBX7-7.

NOW, THEREFORE, be it resolved by the Board of Directors of Goleta Water District as follows:

SECTION 1 The Goleta Water District does hereby adopt the Urban Water Management Plan as submitted and modified.

SECTION 2 The General Manager is hereby authorized and directed to include a copy of this Resolution in Goleta Water District's 2010 Plan.

SECTION 3 The General Manager is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit copies of the 2010 Plan to the California Department of Water Resources, the California State Library, and any city or county within which the Goleta Water District provides water supplies no later than thirty (30) days after this adoption date.

SECTION 4 The General Manager is hereby authorized and directed, in accordance with Water Code Section 10645, to make the 2010 Plan available for public

review during normal business hours no later than thirty (30) days after filing a copy of the Plan with the California Department of Water Resources.

SECTION 5 The General Manager is hereby authorized and directed, in accordance with Water Code Section 10635(b), to provide that portion of the 2010 Plan prepared pursuant to Water Code Section 10635(a) to any city or county within which the Goleta Water District provides water supplies no later than sixty (60) days after submitting a copy of the Plan with the California Department of Water Resources.

SECTION 6 The General Manager is hereby authorized and directed to implement the 2010 Plan in accordance with the Act and SBX7-7 and to provide recommendations to the Board of Directors regarding necessary budgets, procedures, rules, regulations or further actions to carry out the effective and equitable implementation of the 2010 Plan.

This resolution shall take effect immediately.

PASSED AND ADOPTED by the Board of Directors of the Goleta Water District this 8th day of November, 2011 by the following roll call vote:

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

NAY: **Director Bertrando**

ABSENT: **None**

ABSTAIN: **None**

ATTEST:

JOHN D. MCINNES
DISTRICT SECRETARY

WILLIAM C. ROSEN, PRESIDENT
BOARD OF DIRECTORS