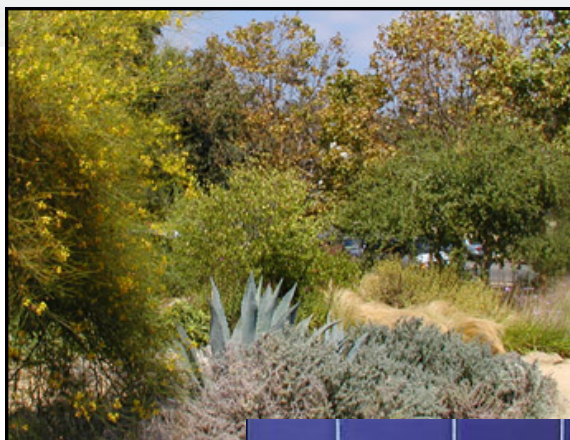


Final Report

Urban Water Management Plan 2005 Update



Carpinteria Valley Water District

July 2007

Kennedy/Jenks Consultants
Engineers & Scientists

Kennedy/Jenks Consultants

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Final Draft Report

Urban Water Management Plan
2005 Update

July 2007

Prepared for
Carpinteria Valley Water District
1301 Santa Ynez Ave
Carpinteria, CA 93013

K/J Project No. 0789022

Table of Contents

<i>List of Tables</i>	<i>iv</i>
<i>List of Figures</i>	<i>iv</i>
<i>List of Appendices</i>	<i>v</i>
Section 1: Introduction	1-1
1.1 Objectives	1-1
1.2 Scope of Document.....	1-1
1.3 Authorization	1-1
Section 2: Urban Water Management Planning Act.....	2-1
2.1 History of Urban Water Management Planning Act.....	2-1
2.2 Recent Changes to Urban Water Management Planning Act.....	2-2
2.3 2005 UWMP Requirements.....	2-3
2.4 District Compliance with UWMP Act	2-4
2.5 Public Participation.....	2-5
2.5.1 Requirements	2-5
2.5.2 Plan Adoption	2-5
2.6 Coordination with Local Agencies	2-5
2.6.1 Requirements	2-5
2.6.2 Local Agencies	2-6
Section 3: Water Service Area.....	3-1
3.1 Requirements	3-1
3.2 Description	3-1
3.2.1 Climate	3-1
3.2.2 Demographic Factors	3-1
3.3 Customer Connections.....	3-3
3.4 Water Demands	3-5
3.4.1 Current Demands	3-5
3.4.2 Unaccounted-For Water	3-6
3.4.3 Future Water Demands	3-6
3.5 Water Resources.....	3-6
3.5.1 Requirements	3-6
3.5.2 Current Resources	3-6
3.5.3 Groundwater Resources.....	3-7
3.5.3.1 Requirements	3-7
3.5.3.2 Existing Resources	3-8
3.5.4 Surface Water Resources	3-11
3.5.4.1 Cachuma Project	3-11

Table of Contents (cont'd)

	3.5.4.2	State Water Project.....	3-12
3.5.5		Current Water Supply Projects	3-13
	3.5.5.1	Requirements	3-13
	3.5.5.2	Projects.....	3-14
3.5.6		Sales, Transfers, and Exchanges.....	3-14
3.5.7		Water Quality of Existing Water Resources	3-15
	3.5.7.1	Requirements	3-15
	3.5.7.2	Water Quality Concerns.....	3-15
	3.5.7.3	Surface Water (Cachuma and SWP Supplies)	3-15
	3.5.7.4	Groundwater	3-15
3.6		Future Water Resources	3-16
3.6.1		Groundwater Resources.....	3-16
3.6.2		Carpinteria Groundwater Bank	3-16
	3.6.2.1	Extraction Options	3-17
	3.6.2.2	Recharge Options	3-17
3.6.3		Carpinteria Basin Deep Aquifer Water	3-18
3.6.4		Surface Water Rights	3-18
3.6.5		Desalinated Water	3-18
3.6.6		Sales, Transfers, and Exchange Opportunities	3-19
	3.6.6.1	Requirements	3-19
	3.6.6.2	Water Transfers	3-19
	3.6.6.3	Water Exchanges.....	3-20
	3.6.6.4	Casitas Municipal Water District	3-20
3.6.7		Recycled Water	3-20
3.7		Reliability Planning.....	3-21
3.7.1		Requirements	3-21
3.7.2		Reliability	3-21
3.7.3		Frequency and Magnitude of Supply Deficiencies	3-22
3.7.4		Drought Planning.....	3-23
3.7.5		Reliability Assessment.....	3-23
	3.7.5.1	Normal Water Year	3-23
	3.7.5.2	Single Dry Water Year Assessment.....	3-24
	3.7.5.3	Multiple Dry Water Year Assessment	3-24
Section 4:		Recycled Water	4-1
4.1		Requirement.....	4-1
4.2		Wastewater Treatment.....	4-1
4.3		Existing Recycled Water Supplies and Demands	4-2
4.4		Incentive to Use Recycled Water	4-2
4.5		Future Recycled Water Supplies and Demands	4-2
4.6		Recycled Water Quality.....	4-4
4.7		Regulatory Requirements for Use of Recycled Water.....	4-4

Table of Contents (cont'd)

Section 5:	Water Shortage Contingency Plan	5-1
5.1	Requirements	5-1
5.2	Introduction	5-1
5.2.1	Supplemental Water Supplies	5-2
5.2.2	Water Shortage Contingency Ordinance/Resolution	5-2
5.2.2.1	Requirements	5-2
5.2.2.2	Water Shortage Ordinance	5-2
5.3	Stages of Action	5-2
5.3.1	Requirements	5-2
5.3.2	Rationing Stages and Reduction Goals	5-2
5.3.3	Priority by Use	5-3
5.3.4	Health and Safety Requirements	5-3
5.3.5	Water Shortage Stages and Triggering Mechanisms	5-3
5.4	Prohibitions, Consumption Reduction Methods, and Penalties	5-5
5.4.1	Requirements	5-5
5.4.2	Mandatory Prohibitions on Water Wasting	5-5
5.4.3	Consumption Reduction Methods	5-5
5.4.4	Water Allotment Methods	5-6
5.4.5	Excessive Use Penalties	5-6
5.5	Revenue and Expenditure Impacts and Measures to Overcome Impacts	5-7
5.5.1	Requirements	5-7
5.5.2	District Actions	5-7
Section 6:	Demand Management Measures	6-1
6.1	Requirement	6-1
6.2	Introduction	6-1
6.3	Best Management Practices	6-1
6.4	Comparison with Prior UWMP	6-2
References	<i>i</i>

Table of Contents (cont'd)

List of Tables

- 2-1 Summary of Requirements for Preparation of the 2005 UWMP
- 2-2 Coordination with the Public
- 3-1 Local Climate
- 3-2 Local Climate Summary
- 3-3 District and Projected Population
- 3-4 Number of Connections and Water Demands 2000 - 2030
- 3-5 Current and Projected Water Supply Allocations (AFY)
- 3-6 Carpinteria Basin Total Pumping 1984 - 2005
- 3-7 Active Groundwater Resources
- 3-8 District Groundwater Extractions (AFY) 2000-2004
- 3-9 Sales to Other Agencies
- 3-10 Estimated District Groundwater Extractions (AFY) 2010-2030
- 3-11 Three-Year Minimum Water Supply (AFY)
- 3-12 Projected Normal Water Year Supply and Demand (AFY)
- 3-13 Projected Single Dry Water Year Supply and Demand (AFY)
- 3-14 Projected Multiple Dry Water Year Supply and Demand (AFY) 2006 – 2010
- 3-15 Projected Multiple Dry Water Year Supply and Demand (AFY) 2011 – 2015
- 3-16 Projected Multiple Dry Water Year Supply and Demand (AFY) 2016 – 2020
- 3-17 Projected Multiple Dry Water Year Supply and Demand (AFY) 2021 – 2025
- 4-1 Recycled Water Production (AFY) 2000 – 2030
- 4-2 Recycled Water Demand (AFY) 2005 – 2030
- 5-1 Water Rationing Stages and Goals
- 5-2 Water Shortage Stages and Triggering Mechanisms
- 5-3 Water Use Registration (Allotments)
- 6-1 Demand Management Program Costs 2004-2005

List of Figures

- 3-1 Vicinity Map
- 3-2 District Boundary
- 3-3 Cachuma Project and SWP Distribution Facilities
- 3-4 Regional Groundwater Basins
- 3-5 Cross Section of Carpinteria Basin
- 3-6 CVWD Facilities
- 3-7 Rainfall In Santa Ynez Watershed 1950-2004

Table of Contents (cont'd)

List of Appendices

- A Definitions for Selected Abbreviations and Terminology
- B Urban Water Management Planning Act
- C Notice of Public Hearing and Resolution Adopting the UWMP
- D 2005 Annual Consumer Confidence Report
- E District Water Rates
- F Groundwater Management Plan
- G Emergency Response Plan
- H California DWR UWMP Review for Completeness Forms
- I BMP Reports 2003-2004
- J Examples of Public Education Materials
- K Selected District Resolutions
- L Program Implementation Report – County of Santa Barbara

Section 1: Introduction

This section presents a summary of the Objectives, Scope of Work, and Authorization for this report.

1.1 Objectives

The Carpinteria Valley Water District (District) has prepared this Urban Water Management Plan (UWMP) 2005 Update. The UWMP 2005 Update is a public statement of the goals, objectives, and strategies needed to maintain a reliable water supply for the District's service area. It is important to understand that this UWMP be viewed as a long-term, general planning document, rather than as policy for supply and demand management.

The State of California Water Code (Section 10610 to 10656) requires water suppliers to prepare an UWMP to promote water conservation and efficient water use. Objectives of this UWMP include the following:

- Accomplishes water supply planning over a 20-year period in 5-year increments
- Identifies and quantifies adequate water supplies, including recycled water, for existing and future demands, in normal, dry, and multiple dry years
- Identifies actions to prepare for and implement during a catastrophic interruption of water supplies
- Implements conservation and efficient use of urban water supplies.

1.2 Scope of Document

This 2005 UWMP Update is divided into five primary sections. Section 2 describes the Urban Water Management Planning Act (Act) (State of California Water Code, Section 10610 to 10656). Section 3 describes the District's water service area including water supply and demands. Section 4 describes the District's recycled water activities. Section 5 describes the District's water shortage contingency planning. Section 6 defines existing and recommended water demand management measures (i.e., water conservation). References are provided following Section 6, and definitions for selected abbreviations and terminology are included in Appendix A.

1.3 Authorization

The District authorized Kennedy/Jenks Consultants (Kennedy/Jenks) to provide engineering services related to preparation of this Report via authorization to proceed dated 28 March 2007 and Proposal dated 14 February 2007.

Section 2: Urban Water Management Planning Act

This section presents a brief description of the Urban Water Management Planning Act (Act). In addition, amendments to the original Urban Water Management Planning Act are defined including provisions that apply to the District.

2.1 History of Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (AB 797; Water Code, Division 6, Part 2.6, Section 10610-10656). This Urban Water Management Planning Act requires water suppliers serving more than 3,000 customers or water suppliers providing more than 3,000 AF of water annually to prepare an UWMP to promote water demand management and efficient water use. Currently, the District serves more than 3,000 customers and provides more than 3,000 AF of water per year. The Urban Water Management Planning Act also required water suppliers to develop, adopt, and file an UWMP (or update) every five years until 1990. In 1990, the Legislature deleted this sunset provision (AB 2661). Accordingly, the UWMP must be updated a minimum of once every five (5) years on or before December 31 in the years ending in 0 and 5. A copy of the current Urban Water Management Planning Act is provided in Appendix B.

The Legislature enacted two measures that modified the Urban Water Management Planning Act in 1991. The first measure requires water suppliers to include an urban water shortage contingency analysis as part of its urban water management plan (AB 11). This measure also exempts the implementation of urban water shortage contingency plans from California Environmental Quality Act (CEQA). The second measure requires an UWMP to describe and evaluate water recycling activities, to be updated once every five years, include an estimate of projected potable and recycled water use, and to describe activities relating to water audits and incentives (AB 1869). Another provision of this bill requires agricultural water suppliers to include in their informational reports and water management plans a description of water recycling activities.

In 1993, the Legislature enacted a measure, which allows members of the California Urban Water Conservation Council (CUWCC) to submit to the state a copy of their annual report to the Council to satisfy current reporting requirements relating to urban water management plans (AB 892).

The Legislature enacted two measures in 1994. The first measure authorizes an urban water supplier to recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan (SB 1017). Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" (CUWCC, 2000) is deemed to be reasonable. The second measure requires water suppliers to give greater consideration to recycled water in their urban management plans (AB 2853).

In 1995, the Legislature enacted two additional measures. The first measure requires urban water suppliers to include, as part of their urban water management plans, a prescribed water supply and demand assessment of the reliability of their water service to their customers during

normal, dry, and multiple dry water years (AB 1845). The assessment shall compare total water supply sources available to the supplier with the total projected water use over the next 20 years, in 5-year increments. It also requires the supplier to provide the water service reliability assessment to any District or county within which it provides water within 60 days of the adoption of its urban water management plan. The second measure made the following changes to the Urban Water Management Plan Act (SB 1011):

- Revises the components required to be included in the plan.
- Requires urban water suppliers to update their plans at least once every five years on or before December 31 in the years ending in 5 and 0.
- Requires urban water suppliers to include a prescribed water supply and demand assessment.
- Requires suppliers to encourage active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during preparation of the plan.
- Prior to adopting the plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon.
- Deletes the provision requiring action alleging failure to adopt a plan to be commenced within 18 months after commencement of urban water service after January 1, 1984.
- Defines “demand management” and “recycled water,” revises the definition of “plan” and deletes the definition of “conservation.”
- Exempts suppliers who are implementing a conservation program from conducting a cost-benefit analysis of those conservation programs.
- Requires the Department of Water Resources to submit a report to the Legislature summarizing the status of plans on or before December 31 in the years ending in 1 and 6.

2.2 Recent Changes to Urban Water Management Planning Act

In September of 2000, Governor Davis signed legislation (AB 2552) that requires urban water suppliers to submit their UWMPs to cities and counties where the water supplier provides water. The intent of this new requirement is to help ensure that District and county planning agencies have reliable water supply information on which to make growth decisions.

Additional changes approved in 2001 include AB 901, SB 221, SB 610, and SB 672. AB 901 requires UWMP to include information, relating to the water quality of source supplies and the manner in which the water quality affects water management strategies and supply reliability. This bill requires the plan to describe plans to supplement a water source that may not be available at a consistent level of use. SB 221 prohibits a city or county from approving a residential subdivision of more than 500 units unless the city council or the board of supervisors provides written verification from the area’s water service provider that a sufficient water supply

is available for the development. SB 610 requires additional information to be included as part of the UWMP for urban water supplies whose water supply includes groundwater. It requires a city or county that determines that a development project is subject to the California Environmental Quality Act to identify any public water system that may supply water for the project and to request that system to prepare a specific water supply assessment. It requires urban water suppliers to include in the UWMP a description of all water supply projects and programs that may be undertaken to meet total projected water use. This bill requires the DWR to take into consideration whether an urban water supplier has submitted an updated UWMP in determining eligibility for funds made available pursuant to any program administered by DWR. SB 672 requires urban water suppliers to describe in the UWMP water management tools and other options used by that agency to maximize resources and minimize the need to import water from other regions. A copy of the current Urban Water Management Planning Act is provided in Appendix B.

In addition, the State of California Department of Water Resources (DWR) developed a set of worksheets to aid water suppliers preparing urban water management plans and to guide DWR staff with the review of submitted plans. These worksheets include the "2005 UWMP Review for Completeness Form" which covers the general provisions of the Urban Water Management Planning Act. A copy these completed worksheets is provided in Appendix H. The worksheets are useful organization tools to ensure that various provisions of the law have been addressed in the plan. The Urban Water Management Planning Act does not require a water supplier to use either of the worksheets. The use of these tools is optional.

2.3 2005 UWMP Requirements

Table 2-1 provides requirements for preparation of an UWMP from the "Guidebook to Assist Water Suppliers in the Preparation of a 2005 UWMP" by the California Department of Water Resources:

**TABLE 2-1
SUMMARY OF REQUIREMENTS FOR PREPARATION OF THE 2005 UWMP**

	Requirement	Code Section	Report Section
1.	Specifies who must prepare an UWMP	10620	Page 2-1
2.	Addresses who must prepare an UWMP	10717	Page 2-1
3.	Discuss whether Agency participated in a regional, watershed or basin plan	10620 ^(d)	Page 3-12
4.	Describe coordination with other agencies	10620 ^(d)	Page 2-6
5.	Discuss tools and options to maximize resources and minimize need to import water	10620 ^(e)	Sections 3-5 & 3-6
6.	Suppliers must notify cities and counties	10621 ^(a)	Page 2-6
7.	Must cover 20 years in 5-year increments	10631	The entire report
8.	Provide service area population		Page 3-3
9.	Provide climate information based on 30 years		Page 3-1

Requirement	Code Section	Report Section
10. Describe demographic factors - housing density, future development, income levels		Page 3-1
11. Identify current and planned water sources	10631	Sections 3-5 & 3-6
12. Provide information on groundwater - basins, extractions, pumping levels, water quality, storage, recharge, adjudication	10631	Page 3-8
13. Describe reliability of water supply and vulnerability to seasonal or climatic shortage and describe alternative sources	10631	Sections 3-6 & 3-7
14. Describe opportunities for exchanges and transfers	10631	Page 3-20
15. Describe water use by customer type	10631	Page 3-3
16. Identify sales to other agencies , additional water uses and losses and total water use	10631	Page 3-15
17. Demand Management Measures (DMM)	10631	Page 6-1
18. Describe evaluation of DMMs not implemented	10631	Page 6-1
19. Planned water supply projects/programs	10631	Page 3-16
20. Describe development of desalinated water	10631 ⁽ⁱ⁾	Page 3-18
21. Describe current or projected supply		Sections 3-5 & 3-6
22. Include copies of annual DMM implementation	10631.5	Appendix I
23. Provide water shortage contingency plan - stages of action	10632 ^(a)	Page 5-1
24. Estimate minimum supply next 3 years	10632 ^(b)	Page 3-25
25. Describe catastrophic supply interruption plan	10632 ^(c)	Page 5-1
26. Describe prohibitions, penalties, etc.	10632 ^(d-f)	Page 5-6
27. Analyze revenue impacts due to reduced sales during shortages	10632 ^(g)	Page 5-7
28. Provide draft ordinance and use monitoring procedure	10632 ^(h&i)	Appendix K
29. Coordinate with other users	10633	Page 2-5
30. Provide wastewater quantity, quality and current uses	10633 ^(a-c)	Page 4-1
31. Discuss recycled water plan	10633 ^(d-g)	Page 4-1
32. Discuss water quality impacts on reliability	10634	Page 3-15
33. Discuss water service reliability- normal year	10635	Page 3-24
34. Discuss water service reliability - single dry year	10635	Page 3-25
35. Discuss water service reliability - multiple dry years	10635	Page 3-25
36. Adoption and implementation of UWMP	10640	Page 2-5

2.4 District Compliance with UWMP Act

In accordance with the Urban Water Management Planning Act, this plan is to be updated at least once every 5 years on or before December 31 in the years ending in 5 and 0. Following

an update, warranted amendments or changes must be made. The amended plan must be readopted by the District and filed with the DWR.

In preparing for this update the District has reviewed its Urban Water Management Plan, as originally adopted by the District in December 1985, and as updated by the District in August 1988, March 1992, February 1997, and April 2001.

2.5 Public Participation

2.5.1 Requirements

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published ... After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

2.5.2 Plan Adoption

The District has actively encouraged public participation in its water management planning efforts, hosting annual public hearings to describe new capital water projects, budgets, rates, conducting “open house” and neighborhood meetings at new facilities.

District staff and the firm of Kennedy/Jenks Consultants prepared this UWMP 2005 Update. Prior to adopting the plan, the urban water supplier shall make the plan available to the public inspection and shall hold a public hearing thereon. All public comments are reviewed and taken into consideration when preparing the updates. In addition, many of the components of the plan are embodied in District ordinances and resolutions, which have been developed with significant public comment over the past several years. For this UWMP, legal public notices and mailings were used to ensure full participation by District customers, interest groups, local water agencies, and planning agencies.

The UWMP must be adopted by the District, and is subject to California Government Code pertaining to legal public noticing. The Plan was adopted by the Board of Directors on 25 July 2007. A copy of the public hearing announcement and District Resolution adopting the UWMP is provided in Appendix C. The UWMP must be filed with the DWR within 30 days of adoption. A copy of this UWMP 2005 Update will be available at the District headquarters.

2.6 Coordination with Local Agencies

2.6.1 Requirements

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

2.6.2 Local Agencies

The District coordinates water planning with the City of Carpinteria, which is the only municipality located within the District, and with the County of Santa Barbara, and has provided copies of this Plan for comment to the City’s Community Development Department, the County Planning and Development Department, Central Coast Water Authority (CCWA), and the County Water Agency.

Information for this UWMP 2005 update was gathered from City of Carpinteria Planning Staff, Cachuma Operation and Maintenance Board (COMB) Staff, and County of Santa Barbara Planning and Development Staff.

Table 2-2 summarizes the efforts taken to include various agencies and citizens in its planning process.

**TABLE 2-2
COORDINATION WITH THE PUBLIC**

	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the Final Draft Plan	Was sent a notice of intention to adopt	Not Involved / No Information
Central Coast Water Authority					X	X	
Cachuma Operations & Maintenance Board				X	X	X	
United States Bureau of Reclamation					X		
City Of Carpinteria				X	X	X	
Montecito Water District					X	X	
Santa Barabara County Water Agency					X	X	
Santa Barbara County P & D				X	X	X	
General Public			X			X	

Section 3: Water Service Area

This section documents the District's history, climate, land use, water demands, water resources, water quality, and reliability planning.

3.1 Requirements

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

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

3.2 Description

3.2.1 Climate

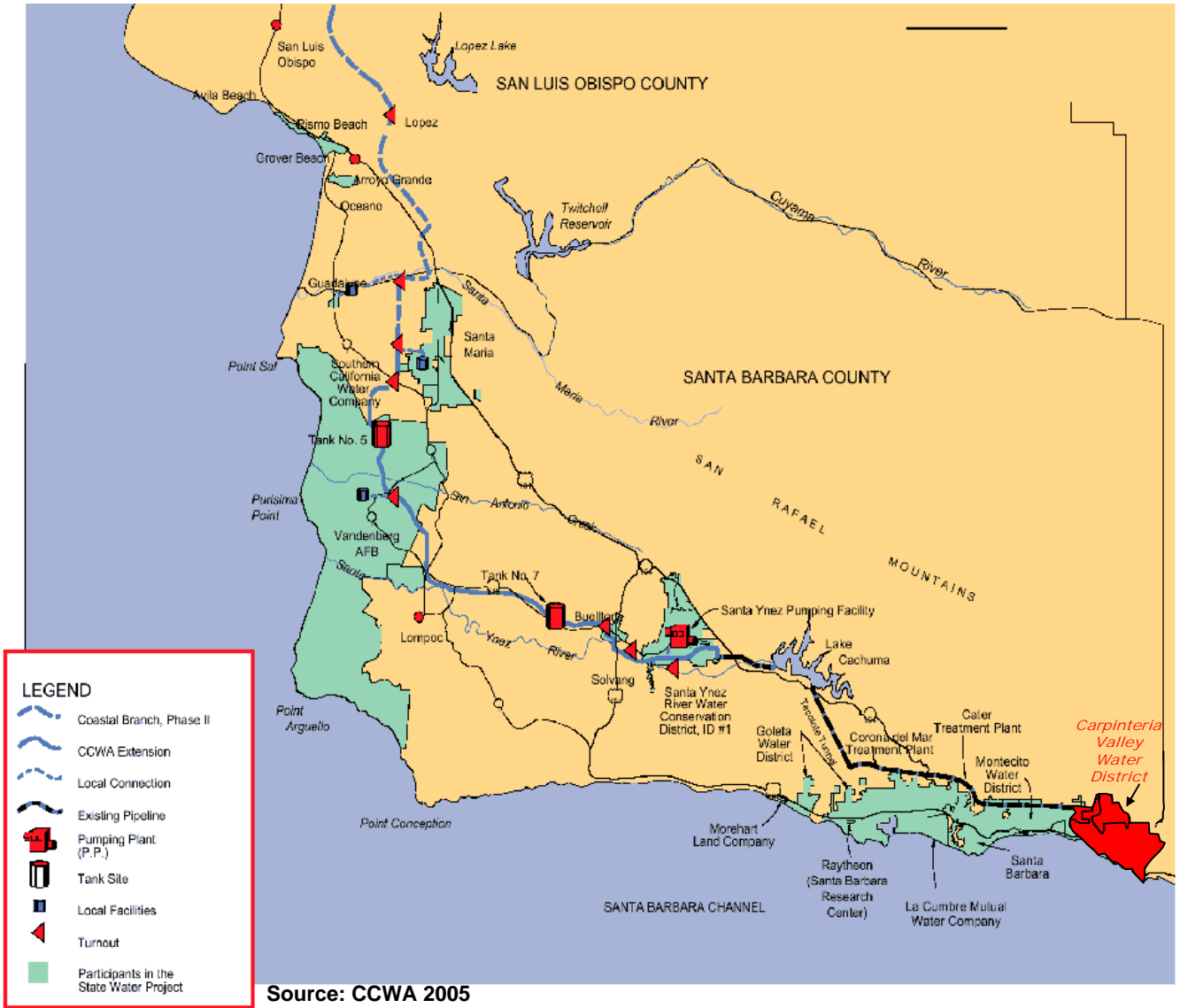
Climate within the District's service area is Mediterranean-like in character. That is, the summers are usually dry with generally mild temperatures and the winters are cool and have light to moderate quantities of precipitation (predominantly in the form of rainfall) with cool temperatures. Average annual rainfall is approximately 18 inches.

Water from the Cachuma Project is collected from the Santa Ynez mountain watershed, which is subject to its own local climatic variations. Cachuma Project water, stored in Lake Cachuma, is a major source of surface water for the District making up as much as 64 percent of its overall supply (see Section 3.5.4 for details). Rainfall in the Santa Ynez watershed is greater than that of local patterns due to the orographic affect created by the mountains and the offshore winds.

Average monthly air temperature varies between 54.1°F and 66.1 °F (WRCC, 2007). Additional temperature, precipitation, and evapotranspiration data is provided in Tables 3-1 and 3-2. Annual rainfall for the area is 20.2 inches. Annual average evapotranspiration (ET_o) for the area is 44.6 inches (DWR, 1987).

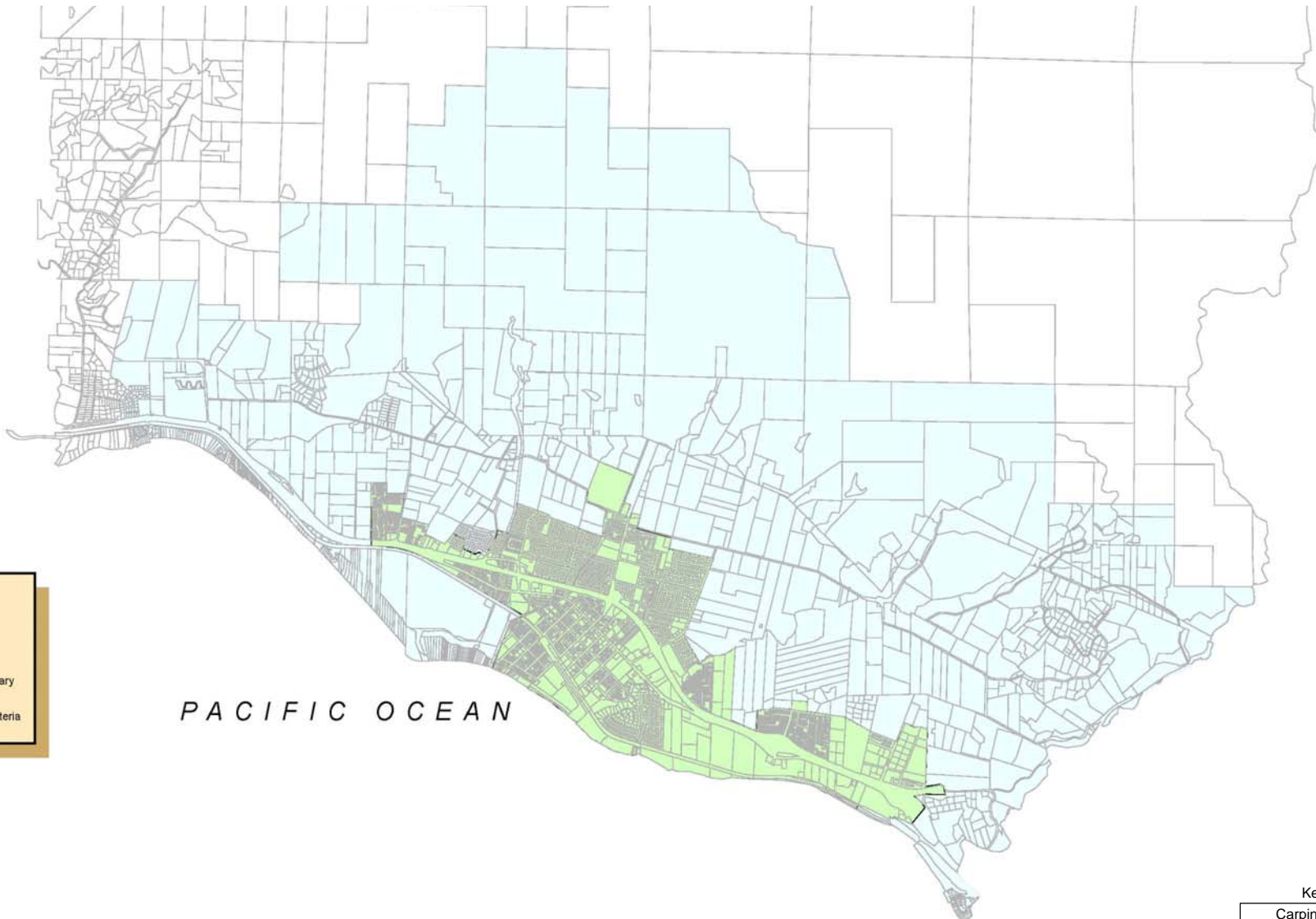
3.2.2 Demographic Factors

The District is located on the coast of California 80 miles north of Los Angeles and 12 miles south east of Santa Barbara (see Figure 3-1 for a vicinity map). The District's service area encompasses an area extending along the south coast of the County of Santa Barbara easterly from the Toro Canyon area to the Ventura County line. See Figure 3-2 for map of District boundary. Foothills of the Santa Ynez Mountains lay to the north and the ocean to the south of the valley. The District's service area contains approximately 11,098 acres. Domestic water service is provided to a population of about 18,200 and approximately 3,883 acres of irrigated crops, ranging from lemons and avocados to many various nursery products, through a total of 4,160 service connections.



Kennedy/Jenks Consultants
**CARPINTERIA VALLEY WATER DISTRICT
 URBAN WATER MANAGEMENT PLAN**
 VICINITY MAP
 K/J 0789022
 MAY 2007
 FIGURE 3-1

G:\PROJECTS\2007\789022_CVWD\UWMP\03-Reports\03-09-DraftReports\Figure3-2_boundary.ppt



Legend

- Parcels
- CVWD Boundary
- City Of Carpinteria



PACIFIC OCEAN

Carpinteria Valley Water District

Source: CVWD, 2007

Kennedy/Jenks Consultants
Carpinteria Valley Water District
Urban Water Management Plan
District Boundary
K/J 0789022
June 2007
Figure 3-2

**TABLE 3-1
LOCAL CLIMATE**

	January	February	March	April	May	June
Standard Average Eto (in)	1.67	2.24	3.43	4.94	4.99	5.24
Average Rainfall (in)	4.28	4.49	3.42	1.52	0.43	0.09
Average Temperature (°F)	54.3	55	56.3	58	60.6	62.8
	July	August	September	October	November	December
Standard Average Eto (in)	5.29	5.33	3.89	3.51	2.22	1.86
Average Rainfall (in)	0.01	0.07	0.35	0.58	2.08	2.87
Average Temperature (°F)	65.2	66.1	65.3	61.9	57.7	54.1

**TABLE 3-2
LOCAL CLIMATE SUMMARY**

	Annual
Standard Average Eto (in)	44.6
Average Rainfall (in)	20.2
Average Temperature (°F)	59.8

Much of the land within the City limits is residential or commercial use with some industrial and manufacturing. Almost all the agricultural land lies outside the City limits. Land use within the District is regulated by the City of Carpinteria within its boundaries, and by the County of Santa Barbara for the unincorporated area of the District. The City has a water allocation program as required by the Local Coastal Plan. A water allocation is given to each new development to ensure that the available supply of water is not exceeded. The City has reached its General Plan build-out population but has the potential for approximately 250 more residential units. It is unknown at this time if the City will allow 250 more units to be developed in the future. Many of the undeveloped parcels outside the City limits are being developed as ranchettes or small farm operations. These lands will produce only a small increase in the number of housing units in the Valley.

In 2002, the County Administrator's Office requested that a review of the projected population growth in conjunction with a water supply forecast be completed by the County Water Agency. Population estimates were generated from the present to 2020 for the City of Carpinteria but did not include outlying unincorporated areas. However, the District has estimated the population the period 2005-2030 using the last known "District" population generated by Department of Finance and 2000 Census data and projecting into 2030 using similar rates of growth. Table 3-3 provides a summary of the 25 year projected population.

**TABLE 3-3
DISTRICT CURRENT AND PROJECTED POPULATION**

	2005	2010	2015	2020	2025	2030 - opt
Service Area Population	18,500	20,600	21,150	21,700	22,300	22,900

3.3 Customer Connections

Currently, the District serves water to over 3,300 single family and multi-family accounts, 330 commercial, industrial, and government/institutional accounts, and over 400 agricultural accounts. See Table 3-4 for details of customer connections for 2000 to 2030. All of the District's customers are metered accounts. The majority of the growth in the number of connections through 2030 will be in the residential sector. All future new accounts will be metered and billed via volume-based rates.

**TABLE 3-4
NUMBER OF CONNECTIONS AND WATER DEMANDS 2000-2030**

Water Use Sectors	2000			
	metered		unmetered	
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	2,925	715		
Multi-family	300	988		
Commercial	212	385		
Industrial	69	124		
Institutional/gov	56	113		
Landscape	0	0		
Agriculture	424	2,043		
other	90	0		
Total	4,076	4,369	0	0

Water Use Sectors	2005			
	metered		unmetered	
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	2,995	1,016		
Multi-family	308	500		
Commercial	216	368		
Industrial	64	116		
Institutional/gov	56	121		
Landscape	0	0		
Agriculture	424	1840		
other	111	0		
Total	4,174	3,962	0	0

Water Use Sectors	2010			
	metered		unmetered	
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	3,065	1,066		
Multi-family	330	550		
Commercial	220	384		
Industrial	64	116		
Institutional/gov	56	121		
Landscape	0	0		
Agriculture	424	1,941		
other	132	0		
Total	4,291	4,178	0	0

Water Use Sectors	2015			
	metered		unmetered	
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	3,135	1,116		
Multi-family	345	600		
Commercial	224	400		
Industrial	64	124		
Institutional/gov	56	113		
Landscape	0	0		
Agriculture	424	2,042		
other	153	0		
Total	4,401	4,395	0	0

Water Use Sectors	2020			
	metered		unmetered	
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	3,205	1,166		
Multi-family	360	650		
Commercial	228	416		
Industrial	64	124		
Institutional/gov	56	113		
Landscape	0	0		
Agriculture	424	2,143		
other	174	0		
Total	4,511	4,612	0	0

Water Use Sectors	2025			
	metered		unmetered	
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	3,275	1,216		
Multi-family	375	700		
Commercial	232	432		
Industrial	64	124		
Institutional/gov	56	113		
Landscape	0	0		
Agriculture	424	2,244		
other	195	0		
Total	4,621	4,829	0	0

Water Use Sectors	2030 - opt			
	metered		unmetered	
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	3,345	1,266		
Multi-family	390	750		
Commercial	236	448		
Industrial	64	124		
Institutional/gov	56	113		
Landscape	0	0		
Agriculture	424	2,345		
other	216	0		
Total	4,731	5,046	0	0

3.4 Water Demands

3.4.1 Current Demands

Water demands for the period 2000 to 2005 are presented in Table 3-4. According to District Water Division staff, total water sold in 2000 was 4,369 acre-feet (AF). District water demand in 2005 was 3,962 AF. The 2005 demands were over 400 AF less than the 2000 demands. Single family and multi-family residential customers accounted for 38 percent (1,516 AF) of water demands in 2005. Agricultural customers accounted for over 46 percent (1,840 AF) of water demands in 2005.

Water demand is a function of several factors. Geographic location, topography, land use, demography, and water system characteristics (i.e., system pressures, water quality and metering of connections) all influence water usage. Water demand characteristics within the District will therefore differ from water demands of other areas in California according to these factors of influence.

Reasons for differences in water demand between local communities can be numerous and complex. Differences in per capita demand are primarily attributable to variations in outdoor

demands (Vickers, 2000). Other factors may include, but are not limited to, the following: parcel size, housing density, house age, condition of plumbing, use of water conservation fixtures, conservation practices, land use, climate, water rates, local ordinances, record keeping, statistical anomalies, etc.

3.4.2 Unaccounted-For Water

In addition to the traditional demand sources, another component that significantly impacts the District's water resources is water system losses (also known as "unaccounted-for water"). This component is typically defined as the difference between water production and water sales. These water losses can be due to authorized activities such as fire fighting and main flushing. In addition, water losses may be due to unauthorized sources such as leakage, illegal connections, theft, and inaccurate flow meters. Unaccounted-for water within the District was approximately 6 percent during the period 2000 to 2005. It is anticipated that the District will have approximately 6 percent unaccounted-for water for the period 2010 to 2030.

This average unaccounted-for water value is slightly lower than most water agencies. Estimates from USEPA Region 9, indicate an average of 6.4 percent total unaccounted-for water. California Department of Water Resources, Office of Water Conservation uses 9.5 percent for long-range planning of municipal water production. The District may consider additional measures to reduce the unauthorized component of the unaccounted-for water. These measures may include additional water main replacement and meter replacement/exchange.

3.4.3 Future Water Demands

Projected water use estimates are based on the small increases to the District's customer base and the trend of increased residential demands. Projected water demands for each water use sector in 5-year increments through 2030 are summarized in Table 3-4. Total estimated water demands will be approximately 4,200 AFY in 2010, 4,400 AFY in 2015, 4,600 AFY in 2020, 4,830 AF in 2025, and 5,050 AF in 2030.

3.5 Water Resources

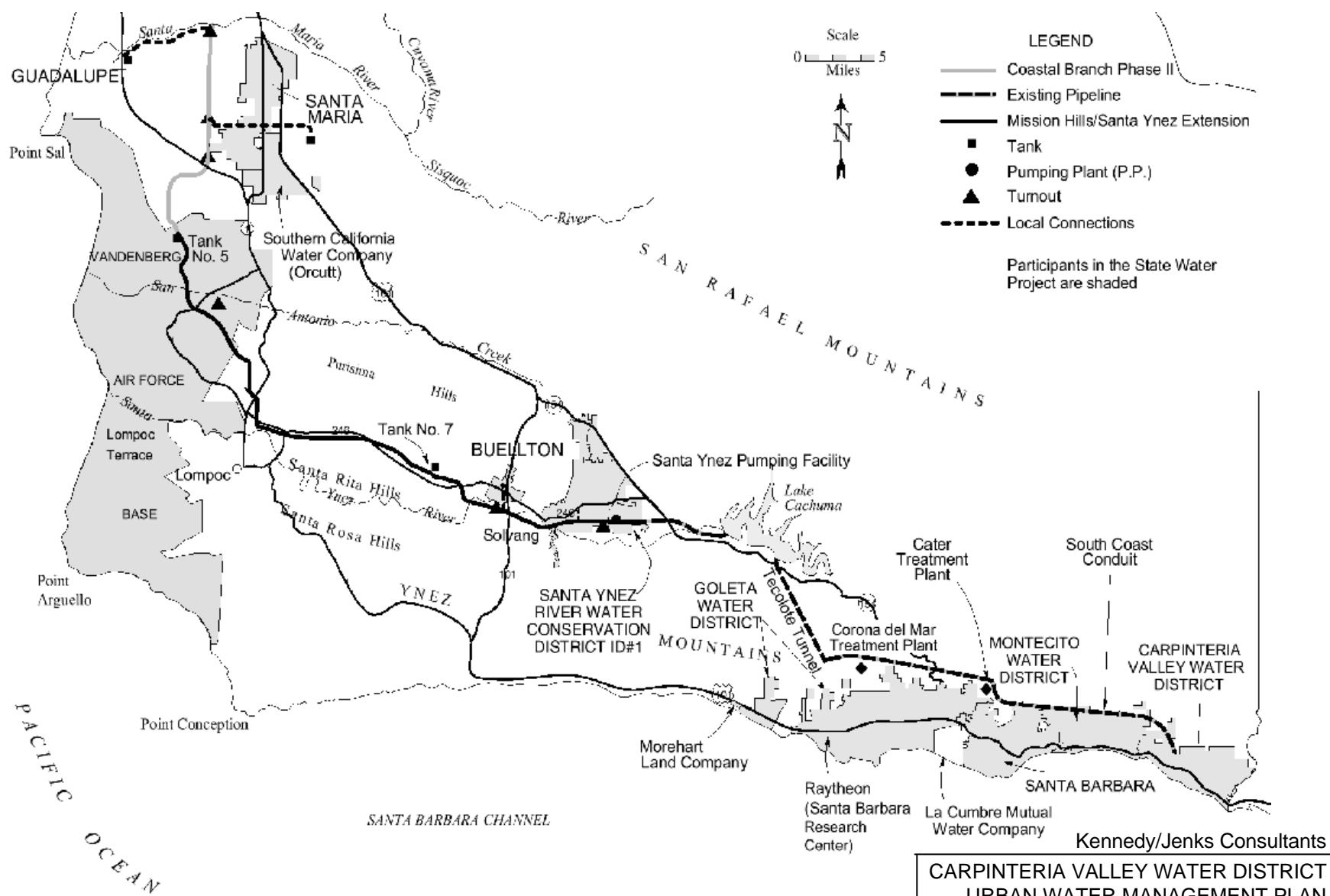
3.5.1 Requirements

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

10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments [to 20 years or as far as data is available.]

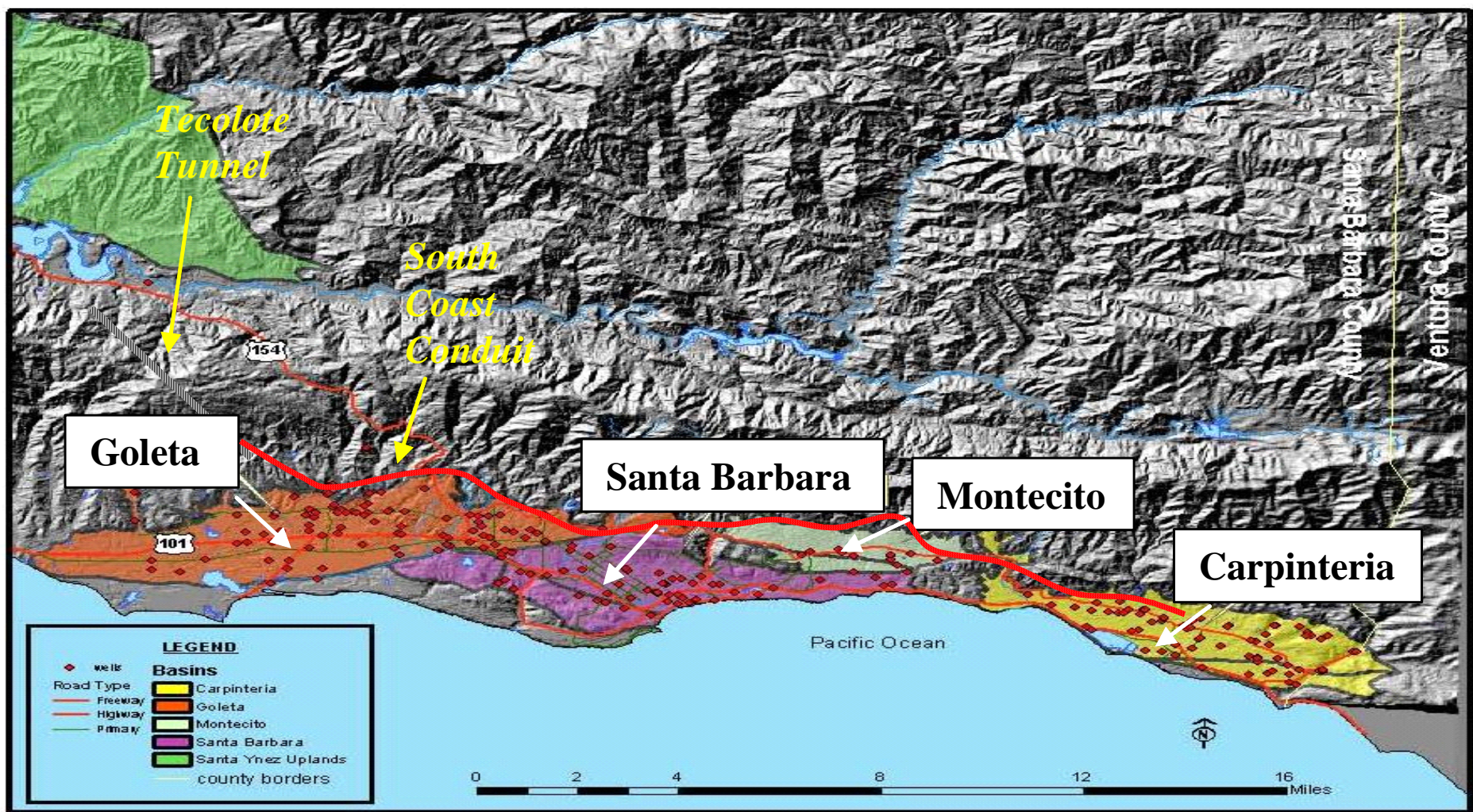
3.5.2 Current Resources

CVWD has a balanced water supply portfolio with surface water from the Cachuma Project (2,813 AFY), imported surface water from the SWP (2,200 AFY), and local groundwater from the Carpinteria Groundwater Basin (2,500 AFY). See Figure 3-3 (Cachuma and SWP facilities) and Figure 3-4 (groundwater basins) for additional details. Local groundwater currently



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**CARPINTERIA VALLEY WATER DISTRICT
 URBAN WATER MANAGEMENT PLAN**
 CACHUMA PROJECT AND SWP
 DISTRIBUTION FACILITIES
 K/J 0789022
 JUNE 2007
 FIGURE 3-3

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Kennedy/Jenks Consultants
Carpinteria Valley Water District
Urban Water Management Plan
Regional Groundwater Basins

K/J 0789022
June 2007
Figure 3-4

provides the largest amount - 30 to 65 percent of the water supply. Having three supplies provides CVWD with a number of supply alternatives to reduce the risk of a failure to meet customer water demands. In 2005, the District owned a total maximum water supply allocation of 7,513 AFY. Table 3-5 summarizes the current and projected water supplies from existing water sources that are available to meet demands within the CVWD service area. Maximum allocations in 2030 will be approximately 6,510 AFY. Existing water resources are anticipated to be sufficient for existing demands.

In addition to these supplies, the CVWD will periodically purchase water from or exchange water with neighboring water purveyors, such as the Santa Ynez River Water Conservation District, Improvement District No. 1 (Santa Ynez ID No. 1). CVWD primarily depends on Lake Cachuma and groundwater to meet demands, with SWP water utilized as a source of supply in drought conditions. A variety of future water sources and/or management actions using existing supplies (including increased groundwater production, participation in banking projects, and participation in SWP allocation transfers) could be strategically implemented to ensure future development planned for the CVWD service area out to 2030 is met efficiently and effectively. Future water supply alternatives are discussed in Section 3.6, while water reliability strategies are described in Section 3.7.

**TABLE 3-5
CURRENT AND PROJECTED WATER SUPPLY ALLOCATIONS (AFY)**

Water Supply Sources	2005	2010	2015	2020	2025	2030 - opt
Water purchased from:						
U.S. Bureau of Reclamation	2,813	2,813	2,250	2,250	2,250	2,250
Department of Water Resources	2,200	1,760	1,760	1,760	1,760	1,760
CVWD produced groundwater	2,500	2,500	2,500	2,500	2,500	2,500
Supplier surface diversions	0	0	0	0	0	0
Transfers in or out	0	0	0	0	0	0
Exchanges In or out	0	0	0	0	0	0
Recycled Water (projected use)	0	0	0	0	0	0
Desalination	0	0	0	0	0	0
Total	7,513	7,073	6,510	6,510	6,510	6,510

3.5.3 Groundwater Resources

3.5.3.1 Requirements

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the Plan's five-year scope. If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the Plan:

- 1) A copy of any groundwater management plan adopted by the urban water supplier.....*

2) *A description of any groundwater basin or basins from which the urban water supplier pumps groundwater.....*

For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted

3) *A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years.....*

4) *A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier....*

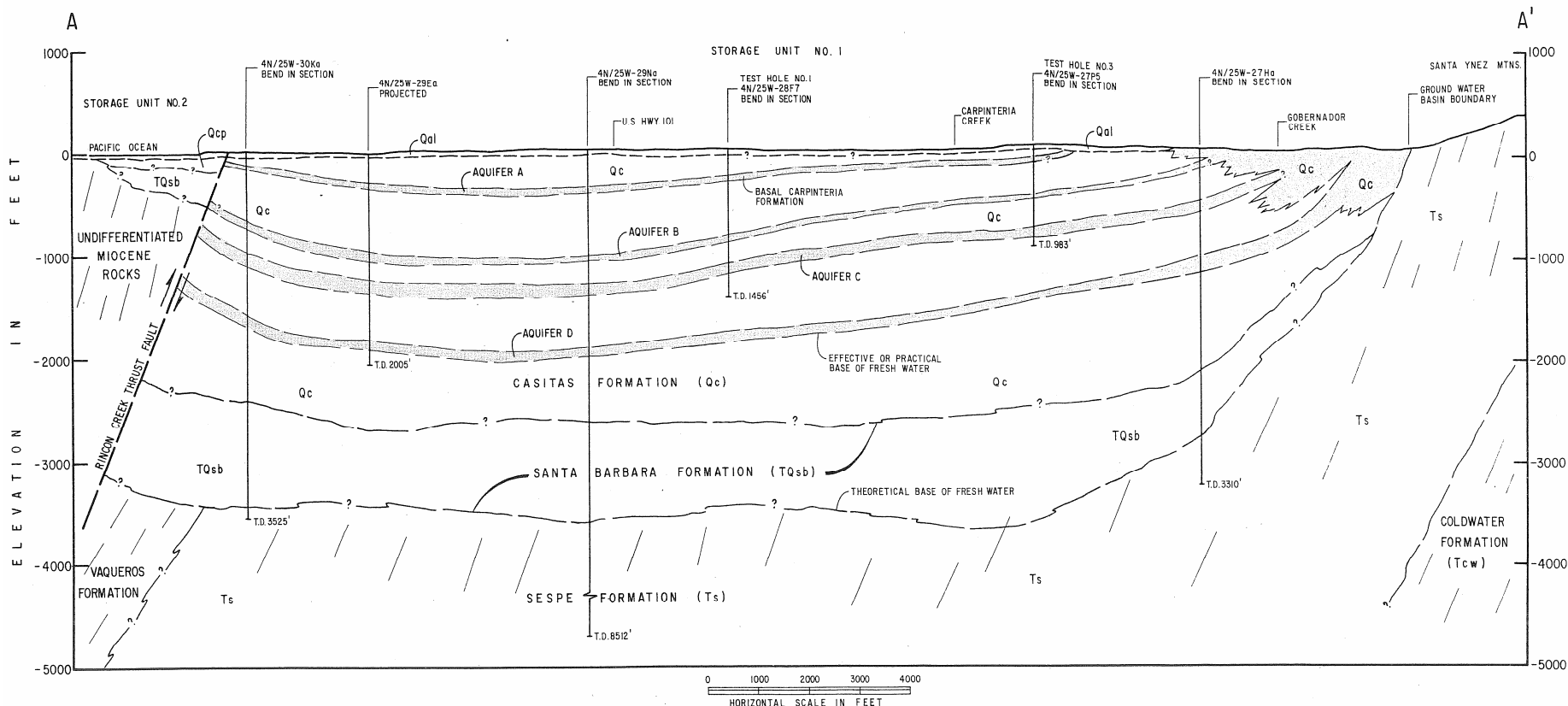
3.5.3.2 Existing Resources

The CVWD overlays the Carpinteria Groundwater Basin (DWR Basin No. 3-18), a relatively large groundwater aquifer that extends from beyond the Ventura County line on the east to Toro Canyon on the west. Figure 3-4 displays the regional groundwater basins. Figure 3-5 displays a cross-section of the Carpinteria Groundwater Basin. Total storage in the aquifer is estimated to be approximately 700,000 AF (CVWD, 1986). The aquifer is divided by the Rincon Creek fault into two storage units; storage Unit No. 1 is the superior unit in both storage quality and storage capacity. Estimated total storage capacity of Unit No. 1 is 170,000 AF (CVWD, 1986). Estimated perennial yield of Unit No. 1 is between 4,500 and 5,500 AFY (CVWD, 2005; Integrated Water, 2003). However, these estimates have not been tested for extended periods where the aquifer is stressed such that negative effects were observed. CVWD currently operates four active wells in Unit No. 1. Additional details provided below.

Overall groundwater pumping from the basin has not approached the estimated perennial yield since the drought in the early 1990's and the recovery of generally high water levels has corroborated this. It is not anticipated that CVWD and the private well owners would operate on a long-term basis above the safe yield without implementing efforts to replenish the basin.

Groundwater rights in the Basin have not been adjudicated. The District under the authority of State Assembly Bill 3030 adopted a Groundwater Management Plan in order to establish its role as groundwater manager for the Carpinteria Groundwater Basin. This Plan was adopted on August 14, 1996 by the District's Board of Directors (CVWD, 1996) and provides direction for the District as the managing entity for the Carpinteria Groundwater Basin. Elements of the plan include; water level & quality monitoring, sanitary seal retrofit program, abandoned well destruction program, educational goals, and a well inventory database. A copy of this Plan is provided in Appendix F.

California Department of Water Resources (DWR) in Bulletin 118 stated that the Carpinteria Groundwater Basin, Basin Number 3-18, was nearly at the high levels seen in 1979 in which artesian conditions existed at many wells. No projections were made by DWR on the future storage of the Carpinteria basin; however basin pumping has not approached the estimated safe yield since 1990. It is not anticipated that the District will operate on a long term basis above the safe yield without implementing a means to replenish the basin.



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Carpinteria Valley Water District
 Urban Water Management Plan

Cross-Section of Carpinteria Basin

K/J 0789022

June 2007

Figure 3-5

Source: CVWD, 2007

Total pumping within the Carpinteria Basin by CVWD and private owners has averaged nearly 3,700 AFY since 1984 (see Table 3-6 for details). Additional analyses indicated that average annual historical production has been 3,200 AFY since 1935 (CVWD, 2003).

**TABLE 3-6
CARPINTERIA BASIN TOTAL PUMPING 1984-2005**

Year	Private Pumping (AFY)	District Pumping (AFY)	Total Basin Pumping (AFY)
1984	1242	2599	3841
1985	905	1793	2698
1986	1077	2046	3123
1987	1122	2287	3409
1988	1117	2546	3663
1989	1556	3035	4591
1990	1964	3508	5472
1991	2351	2664	5015
1992	2174	1178	3352
1993	2434	1524	3958
1994	2780	1305	4085
1995	2418	1340	3758
1996	2597	1410	4007
1997	2504	1242	3746
1998	2418	469	2950
1999	2400	535	2935
2000	2400	1210	3610
2001	2400	84	2484
2002	2400	662	3062
2003	3116	446	3562
2004	2696	535	3960
2005	2268	466	3210
AVERAGE	2,120	1,541	3,661

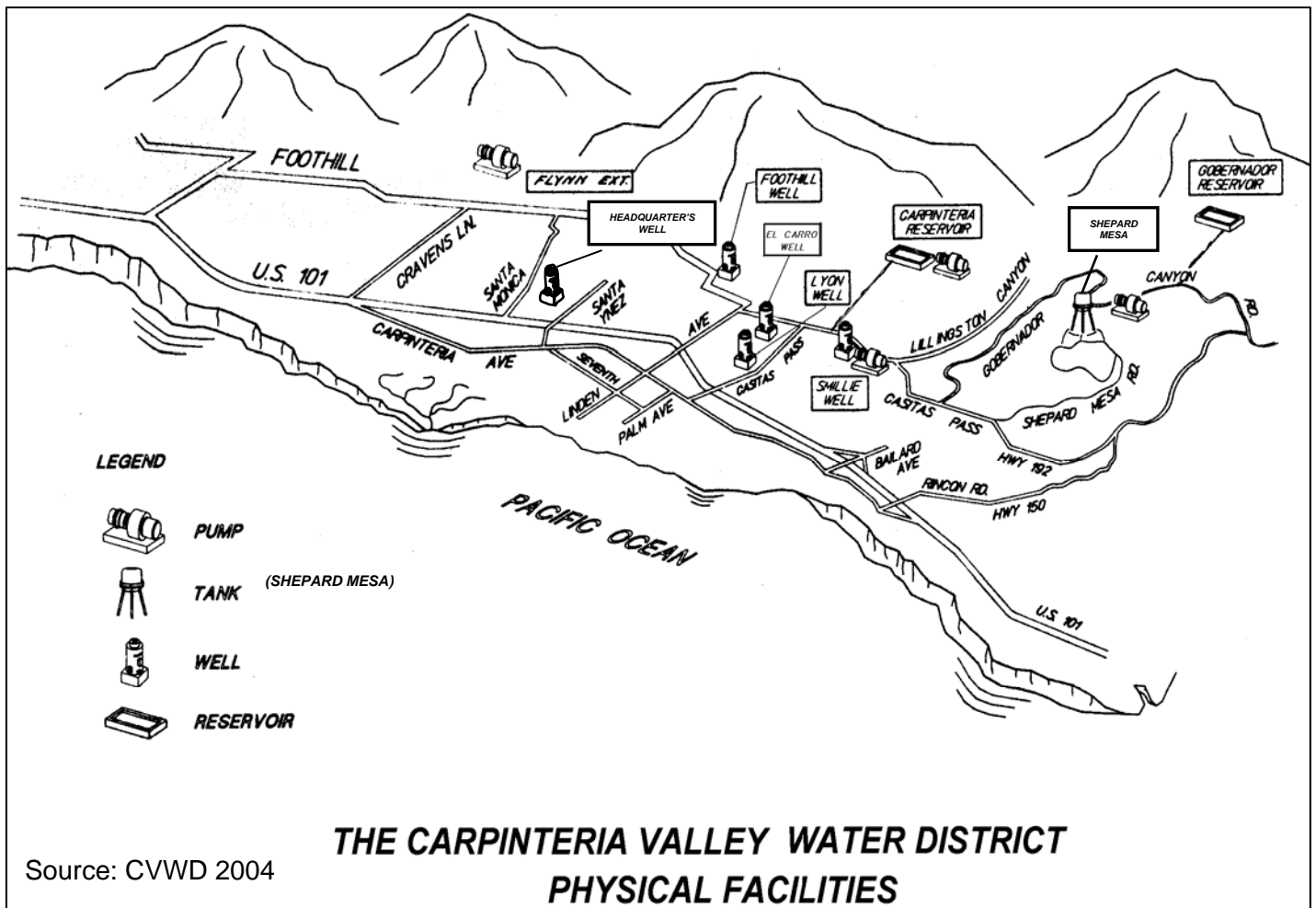
The District operates 4 active municipal wells with a combined capacity to produce 3.98 MGD. Table 3-7 provides a summary of the District's wells. These wells are located central to the sub-urban section of Carpinteria. Figure 3-6 displays the CVWD facilities and location of each well. The District recently constructed a new well, Headquarters Well, which has the capability to extract as well as inject groundwater. The Headquarters Well will help meet the peak demands and provide some redundancy in the groundwater supply reliability.

**TABLE 3-7
ACTIVE GROUNDWATER RESOURCES**

Well Name	Status	Typical Capacity (gallons/min.)	Typical Production (MG/day)	Comments
El Carro Well	Inactive	0	0	
High School Well	Active	300	0.43	
Headquarters Well	Active	1,400	2.00	
Lyon Well	Active	850	1.22	
Smillie Well	Active	230	0.33	
TOTALS		2,780	3.98	

Notes: Source – CVWD, 2006.

**FIGURE 3-6
CVWD FACILITIES**



Groundwater extraction from Unit No. 1 by CVWD between 1984 and 2005 has varied between 84 AF (2001) and 3,508 AF (1990), with a long-term average of approximately 1,600 AF. The District pumped an average of approximately 708 AF per year from 2000 to 2004 (see Table 3-8). In Table 3-8, the percent of total water supply refers to the percent of groundwater pumped compared to the total amount of water supply allocations including surface water and groundwater sources.

**TABLE 3-8
DISTRICT GROUNDWATER EXTRACTIONS (AFY) 2000-2004**

Basin Name (s)	2000	2001	2002	2003	2004
Carpinteria	1210	84	535	446	1,264
% of Total Water Supply	29.00%	2.00%	15.00%	11.00%	26.00%

For the last 20 years private pumpers have an average extraction amount of approximately 2,100 AF (see Table 3-6) which is approximately 57 percent of the total extraction from the basin. These private wells are located throughout the basin with a high concentration of large users north of Foothill Road. Estimates for private groundwater extraction are derived from land use analyses by CVWD since there was little measured water use data (CVWD, 2005). In order to manage this component of local groundwater use an estimate using crop types and water demand factors is done each year to estimate the private pumping in the basin. Additionally, levels are monitored every 2 months over the entire basin to ensure that no localized overdrafting occurs in part of the basin. No significant localized depressions in water level have been noted to date.

However, it is likely that groundwater use will increase in the future due to the reliance by CVWD on well water to blend to meet water quality standards and the estimated increase in groundwater being extracted by private well owners. CVWD estimates that the blending portion of groundwater is about 25 percent of the total demand, or about 1,000 AFY currently and up to 1,400 AFY by 2030. Maximum average pumping by the District will be approximately 2,500 AFY through 2030. See Table 3-5 for the District's current water supply allocations.

3.5.4 Surface Water Resources

3.5.4.1 Cachuma Project

The District receives 50 to 70 percent of its water supplies from the Cachuma Project which stores water in Lake Cachuma. Lake Cachuma and Bradbury Dam were constructed by the U.S. Bureau of Reclamation (Bureau) as part of the Cachuma Project in the early 1950s. Principal features of the Cachuma Project are Lake Cachuma, Bradbury Dam, Tecolote Tunnel, and South Coast Conduit (SCC) and related distribution systems (see Figure 3-3). Water diverted from Lake Cachuma passes through the Tecolote Tunnel, which brings water through the Santa Ynez Mountains to the SCC. The SCC facilities include a steel distribution pipeline that has lateral pipelines bringing water to four regulating reservoirs; Glen Anne Dam and Reservoir, Lauro Dam and Reservoir, Ortega Dam and Reservoir, and Carpinteria Reservoir. Tecolote Tunnel, SCC, and the regulating reservoir facilities are operated by the Cachuma

Operation and Maintenance Board (COMB). The COMB Board consists of five Member Units, of which CVWD is one. CVWD has a contractual agreement with COMB for delivery of its Cachuma Project water. Surface water stored in Lake Cachuma is treated at the Cater Water Treatment Plant (WTP), before being conveyed to CVWD. The Cater WTP is owned and operated by the City of Santa Barbara and has a capacity to treat 37 MGD.

Water stored in Lake Cachuma is used to maintain and improve stream conditions in the Santa Ynez River below Bradbury Dam, in addition to providing water to member units. Water releases for fish from Bradbury Dam have occurred since 1993, with additional water releases from Lake Cachuma used to fulfill groundwater rights agreements held by the Bureau. Effects of future water rights decisions on Cachuma yield have not been estimated by the Bureau or any other agency in Santa Barbara County (CVWD, 2005). Lake Cachuma occasionally spills, on average about every three years. Spill water goes toward the ocean, and is used for river recharge, habitat and sediment management, and is not available to the Cachuma Member Units, except for Santa Ynez ID No. 1.

Lake Cachuma's full storage is approximately 190,000 AF and would provide the member units 6 to 7 years of water supply at a consumption of 25,814 AFY without any rainfall. It is unlikely that the District would experience a drought of that duration or intensity. However, in the event that lake levels are drawn down to less than 100,000 AF, then the member units will begin cutting back allocations by 20 percent each year in an effort to preserve the supply. In normal years, more than half of CVWD's water supply comes from the Cachuma Project. The District's current annual allocation for Cachuma Project Water is 2,813 AFY. See Table 3-5 for the District's current water supply allocations.

However, the District's Cachuma Project annual allocation could decrease in the future due to sedimentation which reduces reservoir storage capacity, water rights and fish flow releases, and hydrologic conditions. Current sedimentation rates in Lake Cachuma are estimated to average 410 AFY; a rate which is expected to increase by 170 AFY by 2021 (CVWD, 2005). It is anticipated that from 2015 to 2030, CVWD's annual allocation from Lake Cachuma will decline by 213 AF to 2,600 AF due to sedimentation (personal communication, Jim Stubchaer, June 2005 in CVWD 2005). The Cachuma dry year supply can be as low as 55 percent. For planning purposes, CVWD assumes an overall 20 percent reduction in Cachuma supplies from 2015 to 2030, reducing the CVWD allocation to 2,240 AFY (CVWD, 2005). This estimate includes a 10 percent decline in allocation for Cachuma sedimentation, a 5 percent decline for fish species, and a 5 percent decline due to down-stream water rights.

CVWD also participates regularly in a SWP exchange program with Santa Ynez ID No. 1, located downstream of Lake Cachuma. Under the exchange program, CVWD typically purchases 300 AF of SWP and supplies it to Santa Ynez ID No. 1 for its use. In exchange, Santa Ynez ID No. 1 supplies an equal amount of Lake Cachuma water for CVWD's use. This exchange eliminates the need to pump SWP water into Lake Cachuma and the retreatment of this water prior to use, thereby lowering the overall cost to both parties. CVWD saves \$110/AF in pumping charges by exchanging up to 300 AFY of SWP supply with Santa Ynez ID No. 1.

3.5.4.2 State Water Project

The SWP's California Aqueduct is owned and operated by DWR, with the Coastal Branch serving the San Luis Obispo and Santa Barbara counties. The Central Coast Water Authority

(CCWA) was formed to finance, construct, manage, and operate the 42-mile extension of the SWP pipeline from Vandenberg to Lake Cachuma. CCWA contracts with the Santa Barbara County Flood Control and Water Conservation District (SBCFC and WCD) for SWP water. The SBCFC and WCD is a SWP Contractor, and has a SWP allocation of 45,486 AFY divided to 14 Allocation Holders. CVWD contracts directly with CCWA for its SWP allocation. Initially, the District sought an allocation of 2,700 AFY which was later scaled back to 2,000 AFY plus a 200 AFY drought buffer.

The District's allocation of 2,000 AFY was determined in 1991 when citizens within CVWD, along with the other Central Coast water agencies, voted to participate in the SWP. A drought buffer of 200 AFY was added later for a total SWP allocation of 2,200 AFY. Estimates to support that level of allocation were based on the 1987 through 1991 drought conditions, and the rate of growth in the region at the time.

It was thought at the time that the SWP could deliver about 50 percent of its entitlement in a very dry year. According to the Department of Water Resources, the SWP is reliable to deliver an average of 70 percent of all entitlements (2005). For planning purposes the District only relies on 69 percent of its SWP allocation (1,518 AFY) for supply during a dry year.

SWP has been available to CVWD since 1995, but only in the last couple of years has CVWD requested an appreciable volume from the SWP. In Water Year 2002-2003 CVWD utilized 600 AF of its allocation, while in Water Year 2003-2004 CVWD utilized 1,200 AF.

While increased uses for the SWP pipeline capacity are being found for wheeling water, the SWP allocation may not always provide sufficient drought protection and CVWD elects to not receive SWP water in normal and wet years by not using its full SWP allocation.

The District has entered into an option agreement with Plains Exploration Production (PXP) to sell up to 400 AFY of State Water Project (SWP) entitlement. The option can be exercised anytime before September of 2011. During the option period PXP pays the District \$300,000 per year to maintain the option. When and if the option is exercised PXP will purchase up to 400 AFY. If PXP purchases the SWP, then PXP will pay an upfront buy-in amount and begin paying all related SWP charges for its share of the SWP entitlement. If PXP purchases the entire 400 acre foot entitlement, then the District will have effectively reduced its maximum SWP allocation to 1,760 AFY (2,000 AFY – 400 AFY entitlement; and drought buffer 10 percent of 1,600 AFY). See Table 3-5 for the District's current water supply allocations.

3.5.5 Current Water Supply Projects

3.5.5.1 Requirements

10631. (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635.....

The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years.

The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

3.5.5.2 Projects

Currently the District relies on three sources of supply to meet water demand in its service area. These are the Cachuma Project, the State Water Project, and local groundwater. Additionally, The District from time to time will purchase or exchange water from neighboring water purveyors. The District anticipates sufficient supply to meet demand for the next 20 years (see Section 3.7). Current District Capital Improvement Projects relate to reliability and water quality issues rather than supply.

As the District moves forward with the planning of its capital improvements, the focus has been on creating a flexible, reliable, and robust water system including water supply reliability and water quality. Among these improvements the District is currently exploring the feasibility of an aquifer storage and retrieval (ASR) program, recently completed a new production/injection well, installed covers on surface reservoirs to protect water quality, and completed a new 3 million gallon storage tank to provide additional finished water storage. While these projects will not directly increase the quantity of supply they will provide a means to better utilize the available water supply and improve water quality.

Conjunctive use of the Carpinteria Groundwater Basin would potentially allow local storage of excess water such as spill water from Lake Cachuma that would normally be lost. Additionally, use of the groundwater in excess of the annual basin yield during dry periods is being considered to extend the surface water supply through drought periods.

In 2004, COMB completed an improvement to Lake Cachuma spillway to increase storage by approximately 9,300 acre feet by extending the flash boards 4 feet to bring the maximum lake elevation from 749 feet above sea level to 753 feet above sea level. The purpose of the project was to provide additional storage for downstream releases related to fish habitat and water rights. This additional storage capacity was put to use in the winter of 2004-2005 in which Lake Cachuma filled during a single extreme winter storm.

3.5.6 Sales, Transfers, and Exchanges

The District is not a wholesaler and in general does not sell water to other agencies. The District sold 250 AF in 2004 to Montecito Water Agency as a one-year contract. The District does not anticipate selling water through 2030. See Table 3-9 for details.

The District also entered into an option agreement with Plains Exploration Production (PXP) to sell up to 400 acre feet of State Water Project (SWP) entitlement. The option can be exercised anytime before September of 2011. Additional details were provided in Section 3.5.4.2.

**TABLE 3-9
SALES TO OTHER AGENCIES**

Water Distributed	2000	2004	2010	2015	2020	2025	2030 - opt
Montecito Water District	0	250	0	0	0	0	0
Total	0	250	0	0	0	0	0

3.5.7 Water Quality of Existing Water Resources

3.5.7.1 Requirements

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.

3.5.7.2 Water Quality Concerns

The District has both surface water and groundwater sources which present very different water quality issues. Surface water comes from State Water Project (Sacramento Delta) and Lake Cachuma (from the Santa Ynez River watershed) and the groundwater is locally produced via District wells.

3.5.7.3 Surface Water (Cachuma and SWP Supplies)

The source of SWP water is rain and snow from the Sierra Nevada, Cascade, and Coastal mountain ranges. SWP water is delivered to Lake Cachuma where it is stored when purchased by CVWD, where it then travels to CVWD via the SCC. There are two water treatment plants (WTPs) along the SCC; Corona Del Mar, and Cater. The Cater WTP treats all Cachuma water delivered to the CVWD. Water treated at this plant can be drawn directly from the SCC or from Lauro Reservoir. Water in the SCC comes directly from Lake Cachuma via the Tecolote Tunnel. Normal operation for the Cater WTP is to draw water from the Lauro Reservoir.

Water quality issues of concern that affect SWP water held in surface reservoirs and in Lake Cachuma include total organic carbon, taste and odor, color, bacteriological and disinfection byproducts. These issues are typical of surface waters in California, and are resolved via treatment modifications.

3.5.7.4 Groundwater

No known contamination issues exist with respect to the groundwater supply (CVWD, 2004). However, manganese arises as a secondary water quality concern for groundwater, and this is controlled via a treatment system. Groundwater is also used to blend with the imported supplies to reduce disinfection by-products.

3.6 Future Water Resources

The District's maximum allocation for all water resources will likely be reduced to 7,073 AFY in 2010 and 6,510 AFY in 2015. See Table 3-5 for additional details. As summarized in Section 3.4, demands are anticipated to increase to slightly more than 5,000 AFY by 2030.

There are several alternatives that the District may consider for increasing future water resources including: add groundwater resources, groundwater banking, maximize use of surface water rights, transfer or exchange of water rights, use of recycled water, and additional support for water demand management programs (see Section 6). Implemented over time, these programs are expected to provide the District with sufficient supplies to meet future water demands. The following sections summarize future water supply programs that could be used to increase the District's potable water supplies.

3.6.1 Groundwater Resources

In Table 3-10, the percent of total water supply refers to the percent of groundwater pumped compared to the total amount of water supply allocations including surface water and groundwater sources. Based on projected demands groundwater extractions will average approximately 2,000 AFY in 2010 to 2030 (see Table 3-10 for details). It is anticipated that groundwater extractions will be approximately 30 percent of the District's total water supply from 2010 to 2030.

**TABLE 3-10
ESTIMATED DISTRICT GROUNDWATER EXTRACTIONS (AFY) 2010-2030**

Basin Name(s)	2010	2015	2020	2025	2030 - opt
Carpinteria	2,000	2,000	2,000	2,000	2,000
% of Total Water Supply	28.3%	30.7%	30.7%	30.7%	30.7%

3.6.2 Carpinteria Groundwater Bank

Since CVWD is reliant on groundwater, any discussion of water reliability strategies should include discussion of greater use of groundwater storage and conjunctive use management of the Carpinteria Basin. Direct recharge, in-lieu recharge, and ASR can be used in the deposit or "put" side of a water bank operation, and existing and new wells can be used for the withdrawal or "take" operations. Increased recharge of local creeks or recycled water could enhance the amount of water that can later be extracted.

For initial estimates of storage quantities for a groundwater bank, CVWD could consider obtaining 6,300 AF of storage, based on 5 percent storage losses over five years, and a storage account to accommodate six drought years. A water bank of this size would accommodate a similar period as the DWR defined six-year drought of 1987 to 1992 (DWR, 2000). An additional storage buffer could be added for a typical water bank mechanism for reducing rapid changes in the storage account's groundwater levels that limit withdrawals to one-third the storage account.

A water banking program would need evaluation of the Basin response if it is stressed to a greater degree than has occurred historically. Groundwater modeling and well pumping tests would be needed to test for subsidence, sea water intrusion, or other potential effects of increasing use of the Carpinteria Basin.

3.6.2.1 Extraction Options

A local water bank could be used by CVWD, but would need cooperation by users of private wells in the Basin. During many years, well owners would receive the benefit of higher groundwater levels and reduced pumping costs. In the drought years, the groundwater levels would be drawn down, and water levels could drop to historic lows. Extraction limits would need to be determined to avoid negative effects of subsidence, having water levels below well pump intakes, or sea water intrusion. Further modeling and aquifer testing would be needed to determine how water levels would respond over a series of years. The bank would have the potential to be expanded to allow for use by Montecito Water District, CMWD, or other nearby entities during a drought. Currently extraction rates (without capital costs) for CVWD are approximately \$135/AF.

3.6.2.2 Recharge Options

Groundwater storage and banking projects generally have rules of operation, whereby an agency can “rent” storage space in a groundwater basin. In-lieu recharge in conjunction with Lake Cachuma and SWP deliveries present an opportunity for groundwater banking. When surplus water is available from the SWP or Lake Cachuma (due to spill events or high carryovers), the CVWD could reduce its well production and use the surplus surface water to meet demands. In this manner, low cost surplus surface water is used ‘in-lieu’ of using the groundwater, causing a net recharge of the groundwater. Withholding use of the groundwater resource prolongs the availability of the basin yield, and may allow CVWD to increase its extractions of water from the basin to enhance dry year reliability during drought conditions.

Other direct recharge methods are also available including recharge along the creek beds, and ASR. ASR is the practice of injecting water in a well during times when water is available, and recovery of the water from the same well during times when it is needed. ASR, as a water supply management option, allows for storing water during times of flood, surplus, or when water quality is good, and recovering it later during emergencies or times of water shortage, or when water quality from the source would otherwise be poor. Large water volumes are stored deep underground, reducing or eliminating the need to construct large and expensive surface reservoirs. ASR has the additional advantage of being easily measurable. CVWD (2005) has identified an increasing interest in ASR to enhance groundwater recharge and if needed, protect the aquifer from sea water intrusion. The District has analyzed ASR in several previous investigations.

Increased use of the Carpinteria Basin would involve agriculture/growers and other possible stakeholders. Grant money from the State (AB3030 funding) could be available for more detailed groundwater modeling to better quantify how much the Carpinteria Basin could be used for all the stakeholders and to test various groundwater management plans. The District plans to formally evaluate groundwater banking in the Carpinteria Basin.

3.6.3 Carpinteria Basin Deep Aquifer Water

CVWD currently does not pump groundwater from the deeper aquifer in the Carpinteria Basin. Groundwater at these depths is typically of lesser quality than the shallower groundwater. Groundwater modeling and monitoring studies would be performed on the underlying aquifer to determine the storage amount within these deeper layers, should this option be considered in more detail. Costs for this water would likely be greater than the costs assumed for current groundwater production, because of the increased pumping lifts to bring the water from the deeper layers to the surface and to treat the water adequately. These costs are likely less than desalination, but will need more detailed studies. The District plans to formally evaluate extracting Carpinteria Basin deep aquifer water.

3.6.4 Surface Water Rights

The District currently owns a maximum of approximately 4,513 AFY of surface water rights (see Table 3-5 for details). However, a maximum of 3,940 AF will be available from 2015 to 2030. Availability of surface water, particularly during summer months and periods of prolonged drought, and water quality considerations may restrict the surface water options.

For the purposes of this UWMP 2005 Update, the District does not anticipate pursuing additional surface water rights to supplement future water resources. However, this does not restrict the District's future efforts to pursue additional surface water resources to supplement existing groundwater production.

3.6.5 Desalinated Water

With population growth and the recent prolonged drought contributing to an increase in Californians' concerns about water scarcity, several communities and industries in California are looking towards desalination plants to convert saline water (e.g., seawater, brackish water or treated wastewater) into fresh water. As of 2002, twenty desalination plants within California were operational, with a capacity of 69,940 AFY (DWR, 2005a). By 2030, the number of operational plants is expected to increase to 33 plants, for a total desalination capacity for the state close to 300,000 AFY (DWR, 2005a). Use of desalinated water could aid in offsetting CVWD's reliance on their other available water supplies during drought periods, and allow for their more efficient management. Additionally, use of desalinated water could be used to improve water quality of new and existing potable water supplies.

Seawater desalination options potentially available to CVWD include:

- Construct a sea water desalination facility in the City
- Participate in the City of Santa Barbara's desalination project
- Participate in a desalination facility outside of Santa Barbara County and receive water by exchange.

The City of Santa Barbara has a seawater desalination plant that can produce up to 10,000 AFY. The plant was completed in 1992 in response to the severe drought of 1987 through 1991. Since that time, the desalination plant has been decommissioned because the

City of Santa Barbara has sufficient water supply from other sources that are more economical to use.

Assuming that Santa Barbara would consider reintroducing desalination with some cost-sharing partners, CVWD could purchase desalinated water from the City of Santa Barbara. Because the City of Santa Barbara is a SWP contractor, CVWD could receive SWP water while paying the City of Santa Barbara to operate the desalination plant to produce the water that Santa Barbara needs. The Santa Barbara desalination plant would provide more economy of scale, but require an exchange agreement with CVWD. Additionally, to reduce the overall costs to CVWD, other agencies such as the City of Santa Maria or the Montecito Water District could also participate in this option and could utilize the desalinated water to meet their own demands.

The costs associated with the City of Santa Barbara desalination plant (Nipomo, 2001):

- \$2,000,000 to \$3,000,000 for re-commissioning including new membranes, new filters, new computer and controls equipment. For a production requirement of 3,000 AF, estimated capital costs are \$670/AF to \$1,000/AF.
- \$1,300/AF operations and treatment cost. The treatment cost could increase significantly if energy prices increase. It is estimated that 30 percent of the operations and treatment cost is associated with energy and that the reverse osmosis system requires 6,600 kilowatt-hour (kwh)/AF produced. The operations and treatment cost assumes that energy supply costs 8 cents/kwh for high voltage, interruptible energy supply.

Total cost would be approximately \$2,000 to \$2,300/AF (Nipomo, 2001). These costs would need to be reevaluated.

3.6.6 Sales, Transfers, and Exchange Opportunities

3.6.6.1 Requirements

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

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

3.6.6.2 Water Transfers

The idea of banking water or exchanging water with other purveyors has been considered by the District but to date has not been planned. The District annually looks at its customer base demand, District population growth, and economic changes to determine if additional water resources need to be acquired. The District is currently exploring options for the use of a groundwater bank located outside of the County. However, an agreement is not in place at this time.

Opportunities exist with Casitas Municipal Water District to the south and a State Water Project connection to the north (CCWA Extension). The District will continue to assess its future supply needs and if necessary will explore water banking and/or exchange possibilities.

3.6.6.3 Water Exchanges

As described in Section 3.5.4.1, CVWD also participates regularly in a SWP exchange program with Santa Ynez ID No. 1, located downstream of Lake Cachuma. Under the exchange program, CVWD typically purchases 300 AF of SWP and supplies it to Santa Ynez ID No. 1 for its use. In exchange, Santa Ynez ID No. 1 supplies an equal amount of Lake Cachuma water for CVWD's use.

3.6.6.4 Casitas Municipal Water District

During the 1987 to 1991 drought the District and other Cachuma project members made use of another source of water from Ventura County. This source was Casitas Lake managed by Casitas Municipal Water District (CMWD). Although the drought affected CMWD supply, they still had excess water to sell to water purveyors in Santa Barbara County. An 8 inch piped connection exists between CMWD and CVWD systems. If more flow is required than the capacity of the existing 8 inch can deliver, as was the case in 1987 to 1991 drought, then an overland pipe would be installed to convey the additional flow. An emergency water exchange agreement remains in place. For this reason the District has considered this a limited potential water supply.

3.6.7 Recycled Water

The District has considered recycled water to meet future water demands. Acceptable uses of recycled water include irrigating crops, parks, and golf courses, as well as water needed for groundwater recharge, industrial processes, power plants, fire fighting, and other similar uses. Increased use of recycled water for non-potable uses could reduce the District's reliance on SWP and Lake Cachuma resources and reduce use of local groundwater supplies.

Issues associated with the use of recycled water include:

- Water quality as it relates to the end use; is recycled water suitable for irrigation of agricultural or public park lands, groundwater recharge, or other reuse
- Regulatory requirements associated with the end use and the public's contact with the recycled water
- Cost for additional treatment beyond what the wastewater treatment plant already required to provide.

Current and future District recycled water activities are summarized in Section 4.

3.7 Reliability Planning

3.7.1 Requirements

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

10631 (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable.

Provide data for each of the following:

(1) An average water year, (2) A single dry water year, (3) Multiple dry water years.

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

10631 (c) 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

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

3.7.2 Reliability

In order to plan for a reliable water supply District staff examined both the possibility of short-term and long-term shortages. A short-term water shortage could result from a disaster such as an earthquake, flood, or even a widespread power outage. A long-term water shortage would most likely result from a long period of drought in the region.

The Urban Water Management Planning Act requires urban water suppliers to assess water supply reliability and vulnerability to seasonal and climatic shortage. Reliability is a measure of a water service system's anticipated success in managing water shortages.

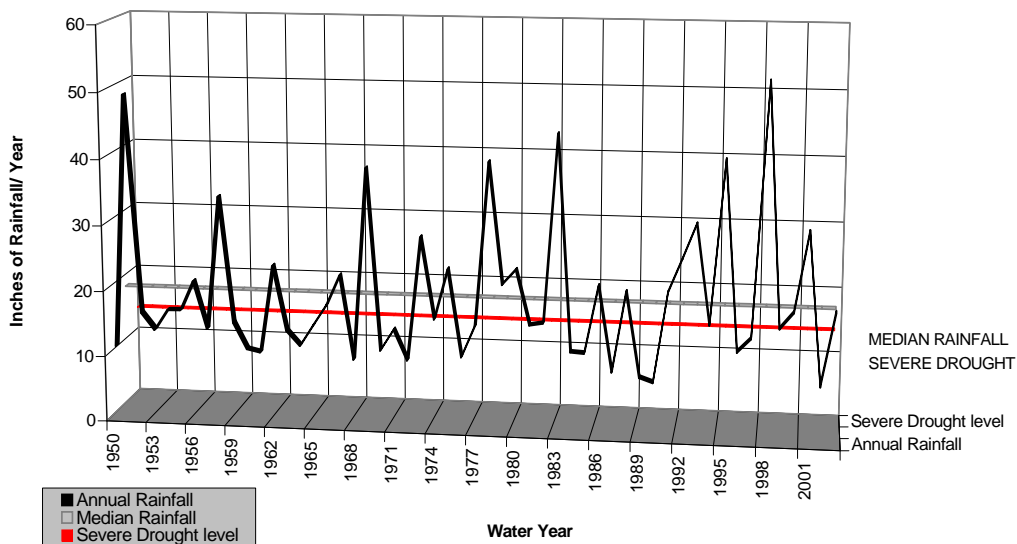
Costs of demand management or supply augmentation options to reduce the frequency and severity of shortages are now high enough that planners must look more carefully at the costs of unreliability to make the best possible estimate of the net benefit of taking specific actions, hence the term "reliability planning." To plan for long-term water supply reliability, planners examine an increasingly wide array of supply augmentation and demand reduction options to determine the best courses of action for meeting water service needs. Such options are generally evaluated using the water service reliability planning approach. Reliability planning requires information about the following: (1) expected frequency and severity of shortages; (2) how additional water management measures are likely to affect the frequency and severity of shortages; (3) how available contingency measures can reduce the impact of shortages when they occur.

3.7.3 Frequency and Magnitude of Supply Deficiencies

In January of 1990, the District Board of Directors declared a water shortage emergency in response to significant drought-related cutbacks in supply from Lake Cachuma, and soon thereafter instituted a moratorium on new water connections and established a water allocation ordinance limiting water use by existing District customers. Copies of selected District Resolutions are provided in Appendix K.

The District has not experienced any drought periods resulting in water shortages since 1990. Durations of severe droughts in this region have historically lasted 3 to 5 years. Data for the past 50 years on the rainfall in the Santa Ynez watershed is shown graphically in Figure 3-7. The years in which the rainfall is less that 75 percent of the median rainfall (18.95 inches) is considered to be severe drought years. In the last 50 years there appears to have been 13 occurrences of severe drought of which three events were more than one year in duration, namely in the mid 1940's, late 1950's and late 1980's.

**FIGURE 3-7
RAINFALL IN SANTA YNEZ WATERSHED 1950-2004**



3.7.4 Drought Planning

The District evaluated minimum supplies which would be available during an extended drought. During a drought period, estimated available CVWD Cachuma allocations (currently 2,813 AFY) would be reduced by approximately 45 percent resulting in 1,547 AFY. This was based on an extreme dry period that occurred in the late 1980s and extended to the early 1990s. Since that time the District acquired a 2,000 AFY allocation plus a 200 AF drought buffer from the State Water Project. For purposes of planning the District assumed that the SWP allocation (currently 2,200 AFY) would be reduced by approximately 31 percent resulting in 1,518 AFY maximum available during a drought. Estimated groundwater available during a drought is approximately 2,000 AFY, although the District may pump additional water as needed to meet demands. The District would have a three-year minimum water supply totaling approximately 4,762 AFY as summarized in Table 3-11.

**TABLE 3-11
ESTIMATED THREE-YEAR MINIMUM WATER SUPPLY (AFY)**

Source	Normal	2006	2007	2008
Cachuma	2,813	1,547	1,547	1,547
SWP	1,760	1,214	1,214	1,214
Groundwater	2,500	2,000	2,000	2,000
Total	7,073	4,762	4,762	4,762

For short term reliability the District relies on the many possible sources available. These short-term supplies include local groundwater, exchanges with other water districts on the central coast, local storage, an emergency connection to Casitas Municipal Water District, and State Water. Additional emergency procedures are summarized in Section 5.

3.7.5 Reliability Assessment

In compliance with the Urban Water Management Planning Act an assessment was developed to determine the District's water supply reliability. This assessment includes a comparison of the total projected water demand with the water supplies available for the following conditions: (1) normal/average water year, (2) single dry water year, and (3) five consecutive dry years. Results for the assessment for each of these three conditions are described below.

3.7.5.1 Normal Water Year

For normal water year assessment for groundwater supply, the District selected the average for the period 1941 to 2005 as the basis for the evaluation. For normal year assessment of surface water supplies, the District selected the average for the period 1995 to 2005 as the basis for the evaluation. For normal year assessment of SWP supplies, the District selected the average for the period 1922 to 1994 as the basis for the evaluation. Table 3-12 summarizes the reliability assessment of normal water year supplies and demands. Local groundwater, Cachuma surface water, and SWP surface water are anticipated to be the primary water resources through 2030. This assessment indicates that the District would have net surplus of 2,695 AF in 2010, and

continue to have a net surplus of 1,264 AF through 2030. Thus, no deficit was observed during the assessment of normal water year supplies and demands.

**TABLE 3-12
PROJECTED NORMAL WATER YEAR SUPPLY AND DEMAND (AFY) 2010-2030**

	2010	2015	2020	2025	2030 - opt
Supply totals	7,073	6,510	6,510	6,510	6,510
Demand totals	4,378	4,595	4,812	5,029	5,246
Difference	2,695	1,915	1,698	1,481	1,264
Difference as % of Supply	38%	29%	26%	23%	19%
Difference as % of Demand	62%	42%	35%	29%	24%

3.7.5.2 Single Dry Water Year Assessment

The District selected Water Year 1976-1977 as the basis for the single dry water year assessment of groundwater and Cachuma surface water. Similarly, the District selected 1977 as the basis for the single dry water year assessment of SWP water. Table 3-13 summarizes the reliability assessment of single dry water year supplies and demands. Local groundwater, Cachuma surface water, and SWP surface water are anticipated to be the primary water resources through 2030. This assessment indicates that the District would have net surplus of 1,490 AF in 2010, and continue to have a net surplus of 62 AF through 2030. Thus, no deficit was observed during the single dry water year assessment of supplies and demands.

**TABLE 3-13
PROJECTED SINGLE DRY WATER YEAR SUPPLY AND DEMAND (AFY) 2010-2030**

	2010	2015	2020	2025	2030 - opt
Supply totals	5,868	5,308	5,308	5,308	5,308
Demand totals	4,378	4,595	4,812	5,029	5,246
Difference	1,490	713	496	279	62
Difference as % of Supply	25.4%	13.4%	9.3%	5.3%	1.2%
Difference as % of Demand	34.0%	15.5%	10.3%	5.5%	1.2%

3.7.5.3 Multiple Dry Water Year Assessment

The District selected Water Year 1988-1992 as the basis for the multiple dry water year assessment of groundwater and Cachuma surface water. Similarly, the District selected 1931-1934 as the basis for the multiple dry water year assessment of SWP water. Local groundwater, Cachuma surface water, and SWP surface water are anticipated to be the primary water resources through 2030.

2006-2010

Table 3-14 summarizes the reliability assessment of multiple dry water year supplies and demands for the period 2006 to 2010. This assessment indicates that the District would have net surplus of 2,355 AF in 2006, and continue to have a net surplus of 1,622 AF through 2010. Thus, no deficit was observed during this multiple dry water year assessment of supplies and demands.

**TABLE 3-14
PROJECTED MULTIPLE DRY WATER YEAR SUPPLY AND
DEMAND (AFY) 2006-2010**

	2006	2007	2008	2009	2010
Supply totals	6,360	6,360	6,360	5,980	5,801
Demand totals	4,006	4,049	4,093	4,136	4,180
Difference	2,355	2,311	2,268	1,844	1,622
Difference as % of Supply	37.0%	36.3%	35.7%	30.8%	28.0%
Difference as % of Demand	58.8%	57.1%	55.4%	44.6%	38.8%

2011-2015

Table 3-15 summarizes the reliability assessment of multiple dry water year supplies and demands for the period 2011 to 2015. Local groundwater, Cachuma surface water, and SWP surface water are anticipated to be the primary water resources through 2030. This assessment indicates that the District would have net surplus of 1,580 AF in 2011, and continue to have a net surplus of 958 AF through 2015. Thus, no deficit was observed during this multiple dry water year assessment of supplies and demands.

**TABLE 3-15
PROJECTED MULTIPLE DRY WATER YEAR SUPPLY AND
DEMAND (AFY) 2011-2015**

	2011	2012	2013	2014	2015
Supply totals	5,801	5,801	5,801	5,353	5,353
Demand totals	4,221	4,265	4,308	4,352	4,395
Difference	1,580	1,536	1,493	1,001	958
Difference as % of Supply	27.2%	26.5%	25.7%	18.7%	17.9%
Difference as % of Demand	37.4%	36.0%	34.7%	23.0%	21.8%

2016-2020

Table 3-16 summarizes the reliability assessment of multiple dry water year supplies and demands for the period 2016 to 2020. Local groundwater, Cachuma surface water, and SWP surface water are anticipated to be the primary water resources through 2030. This assessment indicates that the District would have net surplus of 1,363 AF in 2016, and continue to have a net surplus of 741 AF through 2020. Thus, no deficit was observed during the multiple dry water year assessment of supplies and demands.

**TABLE 3-16
PROJECTED MULTIPLE DRY WATER YEAR SUPPLY AND
DEMAND (AFY) 2016-2020**

	2016	2017	2018	2019	2020
Supply totals	5,801	5,801	5,801	5,353	5,353
Demand totals	4,438	4,482	4,525	4,569	4,612
Difference	1,363	1,319	1,276	784	741
Difference as % of Supply	23.5%	22.7%	22.0%	14.7%	13.8%
Difference as % of Demand	30.7%	29.4%	28.2%	17.2%	16.1%

2021-2025

Table 3-17 summarizes the reliability assessment of multiple dry water year supplies and demands for the period 2021 to 2025. Local groundwater, Cachuma surface water, and SWP surface water are anticipated to be the primary water resources through 2030. This assessment indicates that the District would have net surplus of 1,146 AF in 2021, and continue to have a net surplus of 524 AF through 2025. Thus, no deficit was observed during the multiple dry water year assessment of supplies and demands.

**TABLE 3-17
PROJECTED MULTIPLE DRY WATER YEAR SUPPLY AND
DEMAND (AFY) 2021-2025**

	2021	2022	2023	2024	2025
Supply totals	5,801	5,801	5,801	5,353	5,353
Demand totals	4,655	4,699	4,742	4,786	4,829
Difference	1,146	1,102	1,059	567	524
Difference as % of Supply	19.7%	19.0%	18.3%	10.6%	9.8%
Difference as % of Demand	24.6%	23.5%	22.3%	11.9%	10.9%

Section 4: Recycled Water

This section describes the District's wastewater characteristics, flows, and treatment facilities. In addition this Section evaluates the feasibility of recycled water use for landscape irrigation, groundwater recharge with recycled water, and utilizing recycled water for agricultural irrigation.

4.1 Requirement

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

10633 (a) A description of the wastewater collection and treatment systems in the supplier's service area...

10633 (a) A [...] quantification of the amount of wastewater collected and treated...

10633 (a) A description of the [...] methods of wastewater disposal.

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

10633 (c) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

10633 (d) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years.

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

10633 (f) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems and to promote recirculating uses.

4.2 Wastewater Treatment

Carpinteria Valley Water District does not collect or treat wastewater. Wastewater within CVWD's service area is collected and treated by Carpinteria Sanitary District (CSD). The collection system covers most of the City of Carpinteria and some outlying areas of unincorporated County of Santa Barbara.

The collection system consists of approximately 40 miles of piping and serves 3,820 residential, 35 mixed commercial/residential, and 251 non-residential parcels within the CSD service area. Estimated maximum peak flow of the collection system is 6.5 MGD, peaking for a period of 20 minutes. Peak flows occurring during heavy rainfall are likely attributable to infiltration and intrusion flows.

The CSD treatment plant is located on a low lying section of an alluvial deposit adjacent to Carpinteria Creek. Plant Capacity is 2.5 MGD with treatment meeting secondary standards. Treated water is disposed via an ocean outfall located 1,000 feet out from the treatment plant. Average inflow to the plant is approximately 1.4 MGD.

However, this treatment plant is capable of meeting secondary standards only. In order to adequately treat the wastewater, the plant would need to be outfitted with tertiary treatment capabilities. According to CVWD (2005), the CSD currently has enough acreage at the Carpinteria treatment facilities to implement a tertiary system that would produce between 200 and 400 AFY of recycled water. The CSD does not have any current plans to upgrade treatment facilities to meet tertiary standards.

4.3 Existing Recycled Water Supplies and Demands

Water recycling, also known as water reclamation, involves water that, as a result of treatment of wastewater, is suitable for direct beneficial use. Currently only localized recycled water systems exist. Those are located in privately owned agricultural greenhouse operations and at the Carpinteria Sanitary District grounds. It is unknown to what degree greenhouse operators are using recycled water but it does appear that recycled systems are common within that industry. Carpinteria Sanitary District uses recycled water on the treatment plant premises for treatment processes and some landscape irrigation.

4.4 Incentive to Use Recycled Water

Because it is not feasible to deliver recycled water at this time, no incentives to do so have been developed. Additionally, the District does not promote the installation of dual systems because there are no definite plans to begin using recycled water.

4.5 Future Recycled Water Supplies and Demands

There are some potential uses within the District for recycled water, mostly large turf applications such as parks, schools and a commercially operated polo field. However, since there is no distribution system to deliver to these sites, construction of a distribution system would be required. It is estimated that at least 33,000 linear feet of pipe would be required to serve most of the potential large users. It is estimated that a distribution system of this magnitude would cost approximately \$4,000,000 (CVWD, 2005). Further, CVWD would need to consider the cost to upgrade the treatment plant from secondary treatment to tertiary treatment and storage facilities costs for an additional \$4,000,000 (CVWD, 2005), and would need to consider financial impact of using recycled water.

**TABLE 4-1
RECYCLED WATER PRODUCTION (AFY) 2000-2030**

	2010	2015	2020	2025	2030 - opt
Projected use of Recycled Water	0	0	0	0	0

Future recycled water production is anticipated to be 0 AF per year from 2010 to 2030 (see Table 4-1). Commitments for future recycled water demands are 0 AF per year (see Table 4-2). Potential maximum demand for recycled water is estimated to be approximately 200 AF per year. Using current agriculture water unit rates (\$595.44/AF) the District could expect to see a revenue stream of \$119,088. However, the District would lose an existing revenue stream of \$191,960 from those users switching to recycled water. This means that the District would be essentially subsidizing certain customers to use recycled water. This would not meet the District's goal to spread costs fairly over its entire customer base.

**TABLE 4-2
RECYCLED WATER DEMAND (AFY) 2005-2030**

User type	2005	2010	2015	2020	2025	2030 - opt
Agriculture	0	0	0	0	0	0
Landscape	0	0	0	0	0	0
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
Other (user type)						
Other (user type)						
Total	0	0	0	0	0	0

Assuming in the long term (5 years or more) that potable water customer use lost to recycled water use would be replaced by new customers at residential or commercial rates we can see that the break even period is not favorable. Distribution system construction costs of \$2,000,000 dollars and the treatment plant modifications and storage facilities cost of \$2,000,000 dollars would require approximately 33 years to break even on the capital investment. Construction of a recycled water system does not appear currently feasible given the limited potential use within the District's service area and the low growth in potable water demand. The District plans to conduct a formal evaluation (Master Plan) of potential recycled water use.

A regional recycled water system is also possible. Cost sharing of recycled water in the South Coast area would involve the participation of other recycled water users, such as the City of Santa Barbara and/or the Goleta Sanitation District to take advantage of economics of scale. Under this alternative, City of Santa Barbara for example, would use more recycled water to meet its needs and less potable water. Potable water, not being used as a result of this increase in recycled water use, could be sold to CVWD. This would avoid the need for new conveyance facilities.

4.6 Recycled Water Quality

The CSD is currently permitted to discharge secondary-23 recycled water. Secondary-23 means the water has been oxidized and disinfected so that the median concentration of total coliform bacteria does not exceed a Most Probable Number (MPN) of 23 per 100 milliliters (ml) and the single day maximum does not exceed a MPN of 240 per 100 ml in any 30 day period. There are no known plans to upgrade to tertiary treatment at CSD.

4.7 Regulatory Requirements for Use of Recycled Water

This section provides a brief summary of the regulatory requirements for recycled water use within the District. These regulations apply to use of recycled water for landscape irrigation, agricultural and commercial/industrial users, and groundwater recharge.

Use of recycled water for nonpotable purposes is governed by regulations promulgated by the California Department of Health Services (DHS), Division of Drinking Water and Environmental Health. These regulations have been developed to ensure protection of public health, and as such provide water quality criteria only for coliform bacteria and turbidity. Other water quality constituents that may impact irrigation (e.g., plant growth) are not directly addressed in the regulations. The main criteria under the DHS regulations that will need to be addressed include: level of treatment to achieve tertiary quality (filtration and disinfection), minimum distance to domestic wells, and cross connection requirements between recycled water systems and potable systems.

Use of recycled water for nonpotable purposes requires a permit from the Regional Water Quality Control Board (RWQCB) with input and concurrence by DHS. In some counties the Environmental Health Department also takes an active role in monitoring and commenting on a project and is a county-by-county decision. In addition, approval by the State Water Resources Control Board (SWRCB) for "Petition for Change of Place and Purpose of Use" is required for any change in discharge location or quantity of wastewater.

Section 5: Water Shortage Contingency Plan

The following section summarizes the District's plan to respond to water shortage emergencies so that water demands are met promptly and equitably.

5.1 Requirements

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

10632 (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

5.2 Introduction

In 1997, in accordance with the requirements of Assembly Bill 11X, The District developed its Emergency Response Plan (ERP). The District's plan contains procedures for the distribution of potable water in a disaster. These procedures are consistent with guidelines prepared by the California State Office of Emergency Services. The District's ERP identifies various levels of natural and man-caused emergencies and provides examples of actions for a number of given emergencies, including earthquake and power failure.

The District owns and operates sufficient water production capacity to meet demands during a water supply shortage. In addition, specific water-critical customers (such as hospitals, schools, and a few individual customers with medical conditions dependent on continuous water availability) have been identified. Emergency potable water distribution sites have been identified as City Hall, Carpinteria Middle School, Carpinteria Valley Water District offices, and Carpinteria High School. Standby procurement documents are being developed for emergency bulk purchase of bottled water; standby arrangements with several local trucking firms to provide tankers to distribute potable water (certified by the California Department of Health Services for safe transportation of potable water) are being developed. All existing water supply storage, treatment, and distribution, facilities are now inspected weekly.

In the event of a major earthquake the District has an emergency response plan, which includes procedures for assessment of damage, public notification and procedures to determine appropriate actions to restore service as quickly as possible. It is likely in such an event that District customers will be required to ration water to some degree. The District would implement its Water Shortage Contingency Plan if necessary.

In the event of a flood that knocks out transmission or distribution lines the District staff will assess the damage and re-valve to get water to where it is needed. This type of disaster will probably result in isolated damage that can be worked around until the damage can be repaired. The District distribution is looped and in most cases water could be rerouted to any area of the District.

In the event of a power outage, the District has generators with automatic transfer switches on all the major booster stations and a portable 300 kW generator to run the wells. Critical treatment equipment is all run from an uninterruptible power supply (UPS). All future treatment equipment will be equipped with an automatic transfer switch and emergency generator.

5.2.1 Supplemental Water Supplies

To offset future potential water shortages due to drought or disaster, the District is considering additional water supplies. These supplemental water supplies are summarized in Section 3-6.

5.2.2 Water Shortage Contingency Ordinance/Resolution

5.2.2.1 Requirements

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

10632 (h) A draft water shortage contingency resolution or ordinance.

5.2.2.2 Water Shortage Ordinance

The District adopted Resolution No. 547 in 1990 to address water shortage emergency (copy provided in Appendix K). The District adopted Ordinance No. 90-1 in 1990 to address drought regulations and water conservation standards (copy provided in Appendix K). Ordinance No. 90-2, also adopted in 1990, addresses restrictions on uses of water within the District ((copy provided in Appendix J). Ordinance No. 90-3, adopted 1990, addresses restriction upon the delivery of water within the District (copy provided in Appendix K).

The District is well prepared to operate effectively in the face of a catastrophic water supply interruption using the Emergency Response Plan and the District Ordinances for guidance.

5.3 Stages of Action

5.3.1 Requirements

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

10632 (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage.

5.3.2 Rationing Stages and Reduction Goals

The District will use a three-stage rationing plan to invoke during declared water shortages. The rationing plan includes voluntary and mandatory rationing, depending on the causes, severity,

and anticipated duration of the water supply shortage. Table 5-1 summarizes the District's water rationing stages and reduction goals.

**TABLE 5-1
WATER RATIONING STAGES AND GOALS**

Shortage Condition	Stage	Customer Reduction Goal	Type of Rationing Program
Up to 15%	I	15%	Voluntary
15 to 30%	II	25%	Mandatory
30 to 50%	III	50%	Mandatory

The District may consider adding additional stages (i.e., total of 5 stages) during preparation of the 2010 UWMP Update.

5.3.3 Priority by Use

Water allotments are established for all customers on a percentage basis. All customers will be required to reduce use at the same percentage. First priority is given to health and safety in all cases. It is not believed that a stage III shortage will jeopardize the health or safety of any District customers. If a customer chooses to protest their allotment due to hardship a claim can be filed at the District for review by the manager and if appropriate by the Board of Directors. A decision to adjust an allotment will be based primarily on a health and safety basis.

5.3.4 Health and Safety Requirements

In Stage I shortages, customers may adjust either interior or outdoor water use (or both), in order to meet the voluntary water reduction goal. However, under Stage II, and Stage III mandatory rationing programs, the District established a health and safety allotment of 68 gallons/capita/day (gpcd) and as low as 43 gpcd for short term severe water shortages. This value equals 3,300 cubic feet per person per year for long term water shortages. Stage III mandatory rationing, which is likely to be declared only as the result of a prolonged water shortage or as a result of a disaster, would require that customers make changes in their interior water use habits (for instance, not flushing toilets unless "necessary" or taking less frequent showers).

5.3.5 Water Shortage Stages and Triggering Mechanisms

The water shortage response is designed to provide a minimum of 50 percent of normal supply during a severe or extended water shortage. The rationing program triggering levels shown below were established to ensure that this goal is met.

Rationing stages may be triggered by a shortage in one water source or a combination of sources. Although an actual shortage may occur at any time during the year, the water supply will be assessed by the staff in September each year to determine if there will be a shortage.

The District’s potable water sources are groundwater, surface water from Lake Cachuma, and imported State Water Project water. Rationing stages may be triggered by a supply shortage or by contamination in one source or a combination of sources. Because shortages overlap Stages, triggers automatically implement the more restrictive Stage. Criteria for triggering the rationing stages are shown in Table 5-2.

A decision by the General Manager and ratification by the Board of Directors will be the mechanism by which the District will declare stage I, II or III rationing requirements

**TABLE 5-2
WATER SHORTAGE STAGES AND TRIGGERING MECHANISMS**

Percent Reduction of Supply	Stage I Up to 15%	Stage II 15 - 30%	Stage III 30-50%
<i>Water Supply Condition</i>			
Current Supply	Estimated demand is projected to exceed total supply by up to 15%.	Estimated demand is projected to exceed total supply by 15-30%.	Estimated demand is projected to exceed total supply by over 30%.
	And	And	And
	Below “normal” year is declared.	Below “normal” year is declared	Fourth consecutive below “normal” year is declared and carryover water is depleted.
	Or	Or	Or
Water Quality	Contamination of 10% of water supply (exceeds primary drinking water standards).	Contamination of 20% of water supply (exceeds primary drinking water standards).	Contamination of 30% of water supply (exceeds primary drinking water standards).
	Or	Or	Or
Disaster Loss	As Necessary.	As Necessary.	As Necessary.

5.4 Prohibitions, Consumption Reduction Methods, and Penalties

5.4.1 Requirements

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

10632 (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

10632 (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

10632 (f) Penalties or charges for excessive use, where applicable.

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

5.4.2 Mandatory Prohibitions on Water Wasting

Prohibition on waste of water usage was originally enacted in Ordinance No. 90-1 (copy provided in Appendix K). That prohibition was restated in each subsequent drought ordinance, and is included in the now suspended Ordinance No. 90-2(2) (copy provided in Appendix K).

Specific restrictions and prohibited wasteful practices were as follows: no use of running water for hosing or washing down driveways, walkways, and buildings; restaurants were to refrain from serving water unless requested by customers; no outside watering between 10:00 a.m. and 4:00 p.m.; controls on boat and vehicle washing; and no use of water which results in runoff beyond the immediate area of use.

5.4.3 Consumption Reduction Methods

Under normal water supply conditions, potable water production and deliveries figures are recorded monthly. Total deliveries are compared monthly with available supplies. A water supply report is generated for the Manager showing how the supply compares to the estimated demand for the year. This report is then presented to the Board its regular meeting each month.

During a Stage I or Stage II water shortage, weekly production will be collected and reported to the District Engineer. The Engineer compares the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports are forwarded to the Manager. Monthly reports are presented to the Board of Directors at their regular meetings. If reduction goals are not met, the Engineer will determine where allotments are being exceeded and contact that customer directly in an effort to correct the problem. During a Stage III water shortage, the procedure listed above will be followed, with the addition of a daily production report to the Manager.

5.4.4 Water Allotment Methods

The District has established the following allotment method for each customer type.

Agricultural	Percentage Reduction - vary by efficiency
Residential	Percentage Reduction – can vary by occupants per household
Commercial	Percentage Reduction
Industrial	Percentage Reduction
Public Authority	Percentage Reduction
New Customers	Estimate of similar uses apply
New Developments	No new services for new development during a declared water shortage.

Table 5-3 indicates the proposed water allocated to each customer type by rationing stage during a declared water shortage. Individual customer allotments are based on a 5-year period. This gives the District 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.

The District General Manager shall calculate each customer's allotment according to the established rationing allotment method. The allotment shall reflect seasonal patterns. Each customer shall be notified of his or her classification and allotment by mail before the effective date of the Water Shortage Emergency. New customers will be notified at the time the application for service is made. In a disaster, prior notice of allotment may not be possible; notice will be provided by other means. Any customer may appeal the assigned water allotment on the basis of incorrect calculation or health and safety.

**TABLE 5-3
WATER USE RESTRICTION (ALLOTMENTS)**

User Type	Allotments		
	Stage I	Stage II	Stage III
Agriculture	85%	70%	50%
Residential ^(a)	85%	70%	50%
Commercial	85%	70%	50%
Industrial	85%	70%	50%
Public Authority	85%	70%	50%

Note: (a) Exceptions will be made on a case by case basis for high occupancy dwellings.

5.4.5 Excessive Use Penalties

A surcharge policy is addressed in the now suspended Ordinance No. 90-2(2), Section 9 for accounts that exceed their allotment. If water was used during any ration cycle or period in excess of the amount allotted for that period, a surcharge was imposed on said excess use at double the basic water rate in the applicable rate bracket for units of water. If a surcharge was imposed in three (3) or more allotment cycles, in addition to the surcharge, or any other charge

or penalty, the Board could in its discretion, either install a device on the meter to restrict the flow of water or discontinue service to the property.

5.5 Revenue and Expenditure Impacts and Measures to Overcome Impacts

5.5.1 Requirements

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

10632 (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier...

10632 (g) [An analysis of the impacts of each of the] proposed measures to overcome those [revenue and expenditure] impacts, such as the development of reserves and rate adjustments.

5.5.2 District Actions

Surplus revenues that the District collects are put into reserves for Capital Improvements and for emergencies. The District has a policy to maintain approximately 6 months of operating expenses in reserves. Since the District rates are structured such that 46 percent of revenue is collected through sales, 46 percent through service charge and 8 percent through other sources, a decrease in sales has a limited impact on revenues. Since reserves are generally kept at a minimum of \$1,900,000, and as a goal at \$ 5,200,000, it is improbable that a rate increase would be necessary. Under the current conditions the District could withstand an estimated 14 month period under a Stage III condition with existing expenditure levels before exhausting its reserves. No adjustments are anticipated in short-term expenditures as the result of water shortage stages.

Section 6: Demand Management Measures

This section provides a brief summary of the District's demand management program as it applies to measures required by the Urban Water Management Planning Act.

6.1 Requirement

10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

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

6.2 Introduction

The Urban Water Management Planning Act requires the UWMP include a description of 14 specific demand management measures (DMMs). "Demand management," as applied to water conservation, refers to the use of measures, practices, or incentives implemented by water utilities to permanently reduce the level or change the pattern of demand for a utility service.

The California Urban Water Conservation Council (CUWCC) was formed in 1991 to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The goal of the CUWCC is to integrate urban water conservation Best Management Practices (BMPs) into the planning and management of California's water resources. CUWCC is composed of over 380 urban water suppliers and environmental organizations. The District is a signatory to the CUWCC document titled, Memorandum of Understanding Regarding Urban Water Conservation in California (MOU, CUWCC, 2007) and is therefore a member of the CUWCC. This MOU includes a list of 14 BMPs for demand management which are very similar to the measures required by the UWMP Act.

6.3 Best Management Practices

As a signatory to the CUWCC MOU, the District is required to prepare bi-annual reports that summarize the District's compliance with the 14 BMPs. The UWMP Act allows these bi-annual reports to be utilized for compliance with the UWMP Section 10631. Copies of the District's 2003 and 2004 Reports to CUWCC are provided in Appendix I.

The District administers several demand management programs for residential and commercial customers. These programs include residential account water use surveys, residential plumbing retrofit fixtures, large landscape surveys, public information, school education, commercial account water use surveys and rebates, and a conservation coordinator staff position. Total 2004 demand management program expenses were \$16,900, while the estimated 2005 program expenses were \$44,400. Table 6-1 summarizes the estimated water demand management program costs for the period 2004 and 2005. Estimated costs are prepared at the program level and intended for general understanding of each measure. Actual

costs may vary. The DMM with the highest 2004 expenses (\$6,200) was the water use surveys for residential customers. For 2005, the DMM with the highest estimated expenses (\$25,200) was funding the conservation coordinator position.

It is recommended that the District consider additional support for demand management measures to supplement alternative water supply programs (see Section 3.6) to meet future demands. An example would be to implement additional programs that target reducing exterior use of water for residential, commercial, institutional, and governmental customers.

**TABLE 6-1
DEMAND MANAGEMENT PROGRAM COSTS 2004 - 2005**

BMP	2004 Actual Cost (\$)(a)	2005 Estimated Cost (\$)(a)
SFR/MFR Water Surveys	6,200	10,800
Residential Retrofit	300	800
Systemwide Audits & Leak Detection	1,200	1,000
Commodity Rates and Metering	0	0
Large Landscape Programs	1,000	1,500
High Efficiency Washing Machines	0	0
Public Relations	4,500	1,500
School Education	200	600
CII Conservation	900	3,000
Wholesale Agencies	0	0
Conservation Pricing	0	0
Conservation Coordinator	2,600	25,200
WW Prohibition	0	0
Residential ULFT	0	0
Total	\$16,900	\$44,400

Notes:

Source: District CUWCC Bi-Annual Report for 2003-2004.

(a) All dollar values rounded up to nearest \$100.

In addition to District demand management program activities, CVWD also participates in the activities of the Santa Barbara County Regional Water Efficiency Program. A copy of the County Program Implementation Report is provided in Appendix L.

6.4 Comparison with Prior UWMP

The most recent District UWMP was prepared in 2001. The 2001 UWMP identified groundwater and surface water as the primary source of potable supplies. Water demand estimates in the 2005 UWMP Update were less than predicted in the 2001 UWMP. The 2001 UWMP estimated total water demands of 4,797 AF for 2005, 4,993 AF for 2010, 5,202 AF for 2015, and 5,423 AF for 2020. However, demands within the District were 3,962 AF in 2005 and predicted to increase to 4,600 AF in 2020. Water demands have been lower than predicted due to demand management programs including but not limited to low-flow fixtures, water main replacement,

public information programs, and low growth within the District service area. The District's water conservation programs are successful because they target full-time residents and commercial customers alike. A review of the Demand Management Measures (DMMs) defined in the 2001 UWMP indicated that the District's actions were, in general, consistent with those summarized in the 2005 UWMP Update. However, the 2001 UWMP did not identify numeric goals for the DMM programs in five year increments, like the 2005 UWMP Update, and the BMP Reports were significantly different than the current version. Therefore, no direct comparison of the DMM implementation plan, schedule, and expenditures is available at this time. The District will provide a comparison of the DMM implementation plan and schedule in the 2010 UWMP.

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Appendix A

Definitions for Selected Abbreviations and Terminology

APPENDIX A DEFINITIONS FOR SELECTED ACRONYMS AND TERMINOLOGY

Provided below are definitions of selected acronyms and terms used throughout this document.

acre-foot (AF). The amount of water needed to cover an acre one foot deep (325,900 gallons). An acre-foot can support the annual indoor and outdoor needs of between one and two households per year, and, on average, 3 acre-feet are needed to irrigate 1 acre of farmland; enough to cover a football field 1 foot deep.

AFY. Acre-feet per year.

appropriation. The right to withdraw water from its source.

aquifer. A geologic formation of sand, rock and gravel through which water can pass and which can store, transmit and yield significant quantities of water to wells and springs.

audit (end-use). A systematic accounting of water uses by end users (residential, commercial, or industrial), often used to identify potential areas for water reduction, conservation, or efficiency improvement.

audit (system). A systematic accounting of water throughout the production, transmission, and distribution facilities of the system.

available supply. The maximum amount of reliable water supply, including surface water, groundwater, and purchases under secure contracts.

average-day demand. A water system's average daily use based on total annual water production (total annual gallons or cubic feet divided by 365); multiple years can be used to account for yearly variations.

avoided cost. The savings associated with undertaking a given activity (such as demand management) instead of an alternative means of achieving the same results (such as adding supply); can be used to establish the least-cost means of achieving a specified goal. Can be measured in terms of incremental cost.

AWWA. American Water Works Association

baseline. An established value or trend used for comparison when conditions are altered, as in the introduction of water conservation measures.

beneficial use. A use of water resources that benefits people or nature. State law may define beneficial use.

benefit-cost analysis. A comparison of total benefits to total costs, usually expressed in monetary terms, used to measure efficiency and evaluate alternatives. See also cost-effectiveness and avoided-cost.

BAT. Best available technology

best management practice (BMP). A measure or activity that is beneficial, empirically proven, cost-effective, and widely accepted in the professional community.

block. A quantity of water for which a price per unit of water (or billing rate) is established.

budget (water-use). An accounting of total water use or projected water use for a given location or activity.

cfs. Cubic feet per second

CMWD. Calleguas Municipal Water District, Thousand Oaks, California.

capital facilities. Physical facilities used in the production, transmission, and distribution of water.

commodity charge. See variable charge.

community water system. According to the SDWA, a drinking water conveyance system serving at least 15 service connections used by year-round residents of the area served by the system or regularly serving at least 25 year-round residents.

conservation (water). Any beneficial reduction in water losses, waste, or use.

conservation pricing. Water rate structures that help achieve beneficial reductions in water usage. See nonpromotional rates.

consumptive use. Use that permanently withdraws water from its source.

cost-effectiveness. A comparison of costs required for achieving the same benefit by different means. Costs are usually expressed in dollars, but benefits can be expressed in another unit (such as a quantity of water). See net benefits.

customer class. A group of customers (residential, commercial, industrial, wholesale, and so on) defined by similar costs of service or patterns of water usage.

decreasing-block (or declining-block) rate. A pricing structure for which the dollar amount charged per unit of water (such as dollars per gallon) decreases with the amount water usage.

DMM. Demand management measure

DSM. Demand side management

demand forecast. A projection of future demand that can be made on a systemwide or customer-class basis.

demand management. Measures, practices, or incentives deployed by water utilities to permanently reduce the level or change the pattern of demand for a utility service.

demographic. Having to do with population or socioeconomic conditions.

DHS. State of California Department of Health Services.

discount rate. A percentage that is used to adjust a forecast of expenditures to account for the time value of money or opportunity costs; it can be based on the utility's cost of capital.

distribution facilities. Pipes, treatment, storage and other facilities used to distribute drinking water to end-users.

drought. A sustained period of inadequate or subnormal precipitation that can lead to water supply shortages, as well as increased water usage.

end use. Fixtures, appliances, and activities that use water.

end user. Residential, commercial, industrial, governmental, or institutional water consumer.

escalation rate. A percentage that is used to adjust a forecast of expenditures to account for the increasing value of a good or service over time (apart from the discount rate and inflationary effects).

evapotranspiration. Water losses from the surface of soils and plants.

fixed charge. The portion of a water bill that does not vary with water usage.

fixed costs. Costs associated with water services that do not vary with the amount of water produced or sold.

gpcd. Gallons per capita per day

gpd. Gallons per day

gpd/ft. Gallons per day per foot

gpd/ft². Gallons per day per square foot

gpf. Gallons per flush

gpm. Gallons per minute

graywater. Reuse, generally without treatment, of domestic type wastewater for toilet flushing, garden irrigation and other nonpotable uses. Excludes water from toilets, kitchen sinks, dishwashers, or water used for washing diapers.

groundwater. Water that occurs beneath the land surface and fills partially or wholly pore spaces of the alluvium, soil or rock formation in which it is situated. Does not include water produced with oil in the production of oil and gas or in a bona fide mining operation.

groundwater basin. A groundwater reservoir defined by all the overlying land surface and the underlying aquifers that contain water stored in the reservoir. Boundaries of successively deeper aquifers may differ and make it difficult to define the limits of the basin.

groundwater overdraft. The condition of a groundwater basin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years during which water supply conditions approximate average.

groundwater recharge. The action of increasing groundwater storage by natural conditions or by human activity.

groundwater table. The upper surface of the zone of saturation (all pores of subsoil filled with water), except where the surface is formed by an impermeable body.

imported water. Water that has originated from one hydrologic region and is transferred to another hydrologic region.

increasing-block (or inclining-block) rate. A pricing structure for which the dollar amount charged per unit of water (such as dollars per gallon) increases with the amount water usage.

incremental cost. The additional cost associated with adding an increment of capacity.
instream flow. River and stream waters that maintain stream quality, aquatic life, and recreational opportunities.

integrated resource planning. An open and participatory planning process emphasizing least-cost principles and a balanced consideration of supply and demand management options for meeting water needs.

investor-owned utility. A private utility owned by investors and typically regulated by a state public utility commission.

irrigation scheduling. An automated method for optimizing outdoor water use by matching the watering schedule to plant needs.

large-volume user. A water customer, usually industrial or wholesale, whose usage is substantial relative to other users; large-volume users may present unique peaking or other demand characteristics.

leak detection. Methods for identifying water leakage in pipes and fittings.

life span. The expected useful life of a supply-side or demand-side project, measure, or practice. (The life span may not be identical to useful life for tax purposes.)

load management. Methods for managing levels and patterns of usage in order to optimize system resources and facilities.

losses (water). Metered source water less revenue-producing water and authorized unmetered water uses.

low water-use landscaping. Use of plant materials that are appropriate to an area's climate and growing conditions (usually native and adaptive plants). See also xeriscape.

market penetration. The extent to which an activity or measure is actually implemented compared to all potential uses or markets.

marginal-cost pricing. A method of rate design where prices reflect the costs associated with producing the next increment of supply.

master metering. A large meter at a point of distribution to multiple uses or users that could be further submetered. Includes metered wholesale sales.

maximum-day demand. Total production for the water system on its highest day of production during a year.

MOU. Memorandum of understanding

meter. An instrument for measuring and recording water volume.

MWDSC. Metropolitan Water District of Southern California, Los Angeles, California.

MGD. Million gallons per day

mixed-use meter. A meter measuring water use for more than one type of end use (such as indoor and outdoor use).

needle peaks. Persistent levels of peak demand that drive the capacity needs of a water system despite reductions in average demand.

net benefits. The numerical difference between total benefits and total costs, both of which must be expressed in the same unit (usually dollars). See cost-effectiveness.

net present value. The present value of benefits less the present value of costs.

nominal dollars. Forecast dollars that are not adjusted for inflation.

nonaccount water. Metered source water less metered water sales.

nonconsumptive use. Water withdrawn and returned to the source.

nonpromotional rates. Rates that do not encourage additional consumption by water users.

nonresidential customer. A commercial or industrial utility customer.

normalization. Adjustment of a variable to a "normal" level based on averaging over an accepted period of time; used in forecasting.

opportunity cost. The value of a foregone opportunity that cannot be pursued because resources are taken up by a chosen activity.

peak demand. The highest point of total water usage experienced by a system, measured on an hourly and on a daily basis.

per-capita use. Total use divided by the total population served.

per-capita residential use. Residential use divided by the total population served.

precipitation rate (sprinkling). The surface application rate for landscape watering, usually expressed in inches per hour.

present value. Future expenditures expressed in current dollars by adjusting for a discount rate that accounts for financing costs.

pressure regulator. A post-meter device used to limit water pressure.

price elasticity of demand. A measure of the responsiveness of water usage to changes in price; measured by the percentage change in usage divided by the percentage change in price.

primary treatment. Removing solids and floating matter from wastewater using screening, skimming and sedimentation (settling by gravity).

rationing. Mandatory water-use restrictions sometimes used under drought or other emergency conditions.

raw water. Untreated water.

real dollars. Forecast dollars that are adjusted for inflation.

recycled water. Wastewater that becomes suitable for a specific beneficial use as a result of treatment. Legislation in 1991 legally equates the term recycled water to reclaimed water.

retrofit. Replacement of parts in an existing plumbing fixture or water-using appliance in order to improve its operational efficiency.

revenue-producing water. Water metered and sold.

reuse (water). Beneficial use of treated wastewater.

Safe Drinking Water Act (SDWA). Federal drinking water quality legislation administered by the U.S. Environmental Protection Agency (EPA) through state primacy agencies; amended in 1996.

safe yield. The maximum reliable amount that can be withdrawn from a source without compromising quality or quantity, as defined by hydrological studies; can be based on acceptable withdrawals during a critical supply period or drought with a specific probability of occurrence.

SPWRF. City of Santa Paula Water Reclamation Facility

seasonal rate. A pricing structure for which the dollar amount charged per unit of water (such as dollars per gallon) varies by season of use; higher rates usually are charged in the season of peak demand.

secondary treatment. The biological portion of wastewater treatment which uses the activated sludge process to further clean wastewater after primary treatment. Generally, a level of treatment that produces 85 percent removal efficiencies for biological oxygen demand and suspended solids. Usually carried out through the use of trickling filters or by the activated sludge process.

sensitivity analysis. An analysis of alternative results based on variations in assumptions; a "what if" analysis.

service territory. The geographic area served by a water utility.

source-of-supply. Facilities used to extract and/or store raw water prior to transmission and distribution.

source meter. A meter used to record water withdrawn from a surface water or groundwater source, or purchased from a wholesale supplier.

State Revolving Fund (SRF). State loan funds for water utilities established under the Safe Drinking Water Act.

supply management. Measures deployed by the utility that improve the efficiency of production, transmission, and distribution facilities.

submetering. Metering for units comprising a larger service connection, such as apartments in a multifamily building.

surcharge. A special charge on a water bill used to send customers a specific pricing signal and recover costs associated with a particular activity.

system (water). A series of interconnected conveyance facilities owned and operated by a drinking water supplier; some utilities operate multiple water systems.

take-or-pay. A contract provision obligating a purchaser to pay for a commodity whether or not delivery is taken.

tariff. The schedule of a utility's rates and charges.

tertiary treatment. The treatment of waste water beyond the secondary or biological stage. Normally implies the removal of nutrients, such as phosphorous and nitrogen, and a high percentage of suspended solids.

toilet tank displacement device. A plastic bag or dam installed in a toilet tank to reduce flush volume. Considered effective only for fixtures using more than 3.5 gallons per flush.
toilet flapper. Valve in the toilet tank that controls flushing.

transfers (water). Exchange of water among willing buyers and sellers.

transmission facilities. Pipes used to transport raw or treated water to distribution facilities.

treated water. Water treated to meet drinking water standards.

ultra-low-flush toilet (ULFT). A toilet that uses not more than 1.6 gallons per flush.

unaccounted-for water. The amount of nonaccount water less known or estimated losses and leaks.

uniform rate. A pricing structure for which the dollar amount charged per unit of water (such as dollars per gallon) does not vary with the amount of water usage.

USBR. United States Bureau of Reclamation

USEPA. United States Environmental Protection Agency

UWCD. United Water Conservation District, Santa Paula, California

universal metering. Metering of all water-service connections.

unmetered water. Water delivered but not measured for accounting and billing purposes.
user class. See customer class.

variable charge. The portion of a water bill that varies with water usage; also known as a commodity charge.

variable cost. Costs associated with water service that vary with the amount of water produced or sold.

water right. A property right or legal claim to withdraw/divert a specified amount of water in a specified time frame for a beneficial use.

wastewater. Water that has been previously used by a municipality, industry, or agriculture and has suffered a loss of quality as a result.

waste water treatment plant (WWTP). A municipal or public service district which provides treatment of collected waste water.

watershed. A regional land area, defined by topography, soil, and drainage characteristics, within which raw waters collect and replenish supplies.

weather-adjusted. Water demand, revenues, or other variables adjusted to a "normal" weather year; also known as weather normalization.

wholesale water. Water purchased or sold for resale purposes.

Xeriscape. Landscaping that involves seven principles: proper planning and design; soil analysis and improvement; practical turf areas; appropriate plant selection; efficient irrigation; mulching; and appropriate maintenance.

Appendix B

Urban Water Management Planning Act

Established: AB 797, Klehs, 1983

Amended: AB 2661, Klehs, 1990

AB 11X, Filante, 1991

AB 1869, Speier, 1991

AB 892, Frazee, 1993

SB 1017, McCorquodale, 1994

AB 2853, Cortese, 1994

AB 1845, Cortese, 1995

SB 1011, Polanco, 1995

AB 2552, Bates, 2000

SB 553, Kelley, 2000

SB 610, Costa, 2001

AB 901, Daucher, 2001

SB 672, Machado, 2001

SB 1348, Brulte, 2002

SB 1384, Costa, 2002

SB 1518, Torlakson, 2002

AB 105, Wiggins, 2004

SB 318, Alpert, 2004

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

CHAPTER 1. GENERAL DECLARATION AND POLICY

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

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

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in

its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
- (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
- (9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

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

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

- (a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
- (b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
- (c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

CHAPTER 2. DEFINITIONS

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

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

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

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

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

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

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

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

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

CHAPTER 3. URBAN WATER MANAGEMENT PLANS

Article 1. General Provisions

10620.

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

- (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.
- (c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.
- (d)
 - (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.
 - (2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.
- (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
- (f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621.

- (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.
- (b) Every urban water supplier required to prepare a plan pursuant to this part shall notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.
- (c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Article 2. Contents of Plans

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

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

- (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.
- (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:
 - (1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.
 - (2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.

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

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

- (4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
- (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:
 - (1) An average water year.
 - (2) A single dry water year.
 - (3) Multiple dry water years.

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

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

- (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
- (1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:
 - (A) Water survey programs for single-family residential and multifamily residential customers.
 - (B) Residential plumbing retrofit.
 - (C) System water audits, leak detection, and repair.
 - (D) Metering with commodity rates for all new connections and retrofit of existing connections.
 - (E) Large landscape conservation programs and incentives.
 - (F) High-efficiency washing machine rebate programs.
 - (G) Public information programs.
 - (H) School education programs.
 - (I) Conservation programs for commercial, industrial, and institutional accounts.
 - (J) Wholesale agency programs.
 - (K) Conservation pricing.
 - (L) Water conservation coordinator.
 - (M) Water waste prohibition.
 - (N) Residential ultra-low-flush toilet replacement programs.
 - (2) A schedule of implementation for all water demand management measures proposed or described in the plan.
 - (3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

- (4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
- (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
- (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
 - (2) Include a cost-benefit analysis, identifying total benefits and total costs.
 - (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
 - (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.
- (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
- (i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- (j) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council

in accordance with the “Memorandum of Understanding Regarding Urban Water Conservation in California,” dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

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

10631.5. The department shall take into consideration whether the urban water supplier is implementing or scheduled for implementation, the water demand management activities that the urban water supplier identified in its urban water management plan, pursuant to Section 10631, in evaluating applications for grants and loans made available pursuant to Section 79163. The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities.

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

- (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.
- (b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.
- (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

- (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
- (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
- (f) Penalties or charges for excessive use, where applicable.
- (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.
- (h) A draft water shortage contingency resolution or ordinance.
- (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

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

- (a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
- (b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.
- (c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
- (d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement,

wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

- (e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.
- (f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
- (g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

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

Article 2.5 Water Service Reliability

10635.

- (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.
- (b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

- (c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.
- (d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Article 3. Adoption and Implementation of Plans

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

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

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

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

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

10644.

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

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

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

CHAPTER 4. MISCELLANEOUS PROVISIONS

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

- (a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.
- (b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

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

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

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public

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

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

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

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

10657.

- (a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water supplier is eligible for funds made available pursuant to any program administered by the department.
- (b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

Appendix C

Notice of Public Hearing and Resolution Adopting the UWMP

COASTAL VIEW NEWS

The Newspaper for Carpinteria Valley

In the matter of:

CARPINTERIA VALLEY WATER DISTRICT

Notice of Public Hearing

PROOF OF PUBLICATION

State of California
County of Santa Barbara

I am a citizen of the United States; I am over the age of eighteen years, and not a party to or interested in the above entitled matter.

I am the Associate Publisher of the Carpinteria-Summerland Coastal View, a newspaper of general circulation, printed and published weekly in the County of Santa Barbara, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Santa Barbara, State of California, under date of November 17, 1995, Case Number 210046, that the notice herein mentioned was set in type not smaller than nonpareil, describing in general terms the purport and character of the notice to be given; that the notice, of which annexed is a printed copy, has been published in each regular issue of said Carpinteria Summerland Coastal View on the following dates, to-wit

July 5, 12, 2007

I hereby certify (or declare) under penalty that the foregoing is true and correct.

Executed this 12th day of July, 2007 at Santa Barbara County.


Michael VanStry

CARPINTERIA VALLEY
WATER DISTRICT
1301 SANTA YNEZ AVENUE
CARPINTERIA, CALIFORNIA 93013
805-684-2816

July 25, 2007

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held before the Board of Directors of the Carpinteria Valley Water District at their regular Board meeting on Wednesday, July 25, 2007 at 4:00 p.m., or as soon thereafter as it might be heard, relative to the following matter:

URBAN WATER MANAGEMENT PLAN UPDATE - WATER SHORTAGE CONTINGENCY PLAN

Pursuant to the requirements of California Water Code Section 10620 et seq including Section 10631 (e)

All interested persons are invited to attend, participate and be heard. The said Urban Water Management Plan is available for review at the District office, 1301 Santa Ynez Avenue, Carpinteria, California 93013 during business hours.

CHARLES B. HAMILTON, Board Secretary
Publish: July 5, 12, 2007

RESOLUTION NO. 850

**RESOLUTION OF THE BOARD OF DIRECTORS OF
CARPINTERIA VALLEY WATER DISTRICT
ADOPTING AND IMPLEMENTING THE
URBAN WATER MANAGEMENT PLAN 2005 UPDATE**

WHEREAS the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS the Carpinteria Valley Water District is an urban supplier of water providing water to a population of about 19,000 people; and

WHEREAS the Plan shall be periodically reviewed at least once every five years, and the District shall make any amendments or changes to its plan which are indicated by the review; and

WHEREAS the Plan must be adopted, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS the District has therefore prepared and circulated for public review a draft Urban Water Management Plan 2005 Update, and a properly noticed public hearing regarding said Plan was held by the District Board of Directors on its July 25, 2007 meeting, and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Carpinteria Valley Water District as follows:

1. The Urban Water Management Plan 2005 Update is hereby adopted and to be on file at the District;
2. The District General Manager is hereby authorized and directed to file the Urban Water Management Plan 2005 Update with the California Department of Water Resources within 30 days after this date;
3. The District General Manager is hereby authorized and directed to implement the Water Conservation Programs as set forth in the Urban Water Management Plan 2005 Update, which includes water shortage contingency analysis and recommendations to the Board regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation and water recycling programs;

4. In a water shortage, the District General Manager is hereby authorized to bring to the Board for its approval an appropriate declaration of a Water Shortage Emergency according to the Water Shortage Stages and Triggers indicated in the Plan, and implement necessary elements of the Plan;
5. The District General Manager shall recommend to the Board of Directors additional regulations to carry out effective and equitable allocation of water resources during water shortages.

Passed AND ADOPTED by Carpinteria Valley Water District Board of Directors, State of California, this 25th day of July, 2007 by the following vote:

AYES: Lieberknecht, Drain, Van Wingerden, Roberts

NAYES: None

ABSENT: Lemere

APPROVED: None



June Van Wingerden, Vice President

ATTEST:



Charles B. Hamilton, Secretary

Appendix D

2005 Annual Consumer Confidence Report



Carpinteria Valley Water District
P.O. Box 578
Carpinteria, CA 93014

PRSRST STD
US POSTAGE PAID
PERMIT 1215
SANTA BARBARA CA

POSTAL CUSTOMER
ECRWSS

Carpinteria Valley Water District 2005 Drinking Water Quality Report

Vital Information on Water Quality for Residents of the Carpinteria Valley



What's happening at the Storage Tank Site...

Shown on the left is a photo of the construction underway at the Rancho Monte Alegre Storage Tank site. The project will help assure that mandated water quality standards are met.



Carpinteria Valley Water District

1301 Santa Ynez Avenue • PO Box 578 • Carpinteria, CA 93014
Phone (805) 684-2816 • Fax (805) 684-3170

BOARD OF DIRECTORS
Frederick Lemere
President

June Van Wingerden
Vice President

Robert Lieberknecht
Matthew T. Roberts
James W. Drain

GENERAL MANAGER
Charles B. Hamilton

**Este informe contiene información muy importante sobre su agua potable.
Tradúzcalo o hable con alguien que lo entienda bien.**

July 1, 2006

Dear Carpinteria Valley Resident,

Carpinteria Valley Water District is pleased to present you with this Annual Drinking Water Consumer Confidence Report for the 2005 calendar year. Operating under a water supply permit issued by the California Department of Health Services, the Carpinteria Valley Water District supplies water to about 19,000 people at their homes and businesses throughout the Valley. Half of the District's water is **surface water** that comes from Lake Cachuma, including water delivered to Lake Cachuma through the State Water Project facilities. To protect the quality of this water source, only light recreation is allowed on Lake Cachuma. The surrounding watershed is also protected. The balance of the District's water supply comes from **groundwater** pumped from five wells in the Carpinteria Valley Groundwater Basin.

Lake Cachuma surface water is treated at the City of Santa Barbara's Cater Treatment Plant. It then flows toward the Carpinteria Valley through a federally owned distribution system including the South Coast Conduit, the **Ortega Reservoir** at the western end of the Valley in Summerland, and the **Carpinteria Reservoir** located in the eastern end of the Valley. Both reservoirs are essential for the storage and distribution of water in the Carpinteria Valley. The District also uses this federally owned system in combination with its own distribution system to deliver locally produced groundwater to its customers.

Groundwater produced from the Carpinteria Groundwater Basin is of high quality and requires addition of only small amounts of chlorine for disinfection and in some cases direct filtration for manganese removal. The groundwater supply in Carpinteria is beneficial to Carpinteria Valley's water quality and water supply reliability. The groundwater contains almost no organics and thus is excellent for blending with surface water sources to reduce disinfection byproduct formation. The groundwater is readily available and locally accessible if other water supplies become compromised.

To ensure that the Carpinteria Groundwater Basin is protected the District conducted a survey of potential contaminating activities and submitted it to the Department of Health for its Drinking Water Source Assessment and Protection Program.

In the meantime, the District continues to meet all monitoring requirements and drinking water standards with exception of the D/DBP violation described in this report. Thank you for taking the time to review this report. If you have any questions or concerns please feel free to call Bob McDonald, District Engineer, or myself at the District office at 684-2816.

Sincerely,

Charles B. Hamilton
General Manager

Notice about Disinfection Byproduct Rule Violation

The U.S. Environmental Protection Agency (EPA) recently developed a new drinking water standard for Haloacetic acids and established a more stringent standard for a group of four Trihalomethanes. Both compounds are common disinfection byproducts (dbps) in drinking water. The new rule requires that the 4 quarter average of samples taken throughout the District not exceed 80 parts per billion (ppb) for total Trihalomethanes (TTHM) and 60 parts per billion (ppb) for total Haloacetic Acids (HAA5). The new rule also requires that the average free chlorine level not exceed 4 parts per million (ppm). This Rule is referred to as the Stage 1 Disinfectant and Disinfection Byproduct Rule (D/DBP Rule).

The District violated the D/DBP Rule in the fourth quarter of 2005 in which the annual average for TTHM was approximately 85 ppb. You should have received a notice in February regarding this violation. The failure was a result of heavy reliance on water from Lake Cachuma during the winter of January 2005. The heavy rains of that winter created, in Lake Cachuma water, a higher than normal level of Total Organic Carbon (TOC) which is a precursor in the formation of disinfection by products such as TTHMs. Currently aggressive groundwater blending is being implemented to offset higher TOC levels in surface waters. The District has been in compliance of the D/DBP Rule for the first two quarters of 2006. The District staff is confident that as long as it continues to blend at current levels the maximum contaminant level for TTHM can be met and the District will remain in compliance to the current rule.

Questions & Answers about your drinking water....

Is my drinking water pure?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Is there a risk to Immuno-compromised persons?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (1-800-426-4791).

What types of contaminants could be found in my drinking water?

Contaminants that may be present in source water (prior to treatment) include:
Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, animal waste, fertilizer and farming operations.
Organic chemical contaminants, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

How can I know that my drinking water is safe?

In order to ensure that tap water is safe to drink, USEPA and the California Department of Health Services (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Surface Water: All water open to the atmosphere and subject to surface runoff such as lake, reservoir and river. Lake Cachuma and Gibraltar Reservoir are treated at the William B. Cater Water Treatment Plant.

Groundwater: All subsurface water are found underground in cracks and spaces in soil, sand and rock. The area where water fills these spaces is the saturated zone, the top of this zone is called the water table.

For Water Softeners: The District's water has a hardness range of 19 to 25 grains per gallon. One grain per gallon equals 17 milligrams per liter.

Carpinteria Valley Water District Annual Water Quality Report for 2005

SUBSTANCE/(Parameter)	Public Health Goal (MCLG)	Maximum Contaminant Level (MCL)	SURFACE WATER (CATER TREATMENT)		GROUNDWATER (DISTRICT WELLS)		Likely Source of Substance
			Range Detected	**Reporting Value	Range Detected	**Reporting Value	
PRIMARY STANDARDS							
Monitored Before Distribution							
Turbidity (NTU)	None	TT = 1 NTU TT = 95% of samples <0.3 NTU	0.02 - 0.07	0.07	1 - 1.3	1.13	Natural river sediment; soil run-off
Aluminum (mg/L)	0.6	1	.011 - .240	0.129	ND - .010	0.0025	Erosion of natural deposits
Barium (mg/l)	1 (2)	1	ND - 0.04	0.04	ND - 0.1	0.033	Erosion of natural deposits
Copper (mg/l)	0.17	1.3 (AL)	NA	NA	ND - .059	0.015	Erosion of natural deposits; leaching of wood preservatives
Fluoride (mg/l)	1	2	0.33 - 0.57	0.4	0.25 - 0.38	0.32	Erosion of natural deposits
Nickel (µg/L)	12	100	ND	ND	ND - 11	2.75	Erosion of natural deposits; discharge from metal factories.
Nitrate as Nitrate NO3 (mg/L)	45	45	ND	ND	ND - 27	11.75	Natural deposit, fertilizer
Nitrite as Nitrogen N (mg/L)	10	10	ND	ND	ND - 6.1	2.6	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Radon 222 (pCi/L)	None	None	ND	ND	190 - 963	487	Decay of naturally occurring radium
Uranium (pCi/L)	0.43	20	2.40 - 2.70	2.55	NA	NA	Erosion of natural deposits
Control of DBP precursors- TOC (mg/L)	NA	Treatment Requirement	2.30 - 2.95	2.53	NA	NA	TOC has no known adverse health effects but provides a medium for the formation of disinfection by products. Sources include plant decay and other natural processes.
Monitored in the Distribution System							
Total Coliform Bacteria	0	< 1 sample per month positive	-	-	ND	ND	Naturally Present in the Environment
Total Trihalomethanes (µg/L)	NA	80	-	-	48.6 - 100.9	85.1	By-product of water chlorination
Haloacetic acids - HAA5 (µg/L) ***	NA	60	-	-	13.3 - 86.5	36.8	By-product of water chlorination
Chlorine Residual (Free chlorine) (mg/l)	MRDLG as CL ₂ 4.0	MRDL as CL ₂ 4.0	-	-	.8 - 1.8	1.09	Used to disinfect potable water
LEAD/ COPPER RULE							
Monitored at the Customer's Tap 33 sites sampled. 0 samples exceeded the action level for copper. 0 samples exceeded the action level for lead							
Lead (µg/L)	2	15 (AL)	NA	NA	ND - 7.0	<5	Corrosion of household water plumbing and erosion of natural deposits
Copper (mg/L)	0.17	1.3 (AL)	NA	NA	ND - .180	<0.05	
SECONDARY STANDARDS							
Monitored Before Distribution <i>Aesthetic Standards Established By the State of California, Department of Health Services</i>							
Zinc (mg/L)	None	5	NA	NA	ND - .34	0.085	Runoff/Leaching from natural deposits; industrial wastes
Chloride (mg/L)	None	500	15 - 29	19	25 - 64	44.25	Leaching of natural deposits
Iron (µg/L)	None	300	ND	ND	ND - 180	90.3	Leaching of natural deposits
Manganese (µg/L)	None	50	ND	ND	ND - 21	5.25	Naturally-occurring organic materials
Sulfate (mg/L)	None	500	208 - 336	263	95 - 150	123.75	Substances that form ions in water
Specific Conductance (µmhos)	None	1600	748 - 1015	875	81 - 980	712.75	Runoff/Leaching from natural deposits
Total Dissolved Solids (mg/L)	None	1000	536 - 716	628	510 - 610	555	Runoff/Leaching from natural deposits
Threshold Odor Number at 60°C (TON)	NA	3	6 - 15	9	1	1	Naturally-occurring organic materials
Other Constituents monitored							
pH (units)	None	None	7.83 - 8.37	8.03	7.7 - 7.8	7.78	Varies in water
Total Hardness as CaCO3 (mg/L)	None	None	332 - 436	374	320 - 410	362.50	Leaching of natural deposits
Total Alkalinity as CaCO3 (mg/L)	None	None	166 - 188	179	260 - 340	287.50	Leaching of natural deposits
Calcium (mg/L)	None	None	68 - 100	88	92 - 130	113	Leaching of natural deposits
Magnesium (mg/L)	None	None	30 - 52	38	26 - 31	28.50	Leaching of natural deposits
Sodium (mg/L)	None	None	38 - 48	37	41 - 90	64.50	Leaching of natural deposits
Potassium (mg/L)	None	None	2.0 - 2.9	2.4	1.9 - 2.3	2.08	Leaching of natural deposits
Boron (µg/L) *	None	1000 (AL)	260 - 270	265	0 - 190	50	Erosion of natural deposits
Vanadium (µg/L) *	None	50 (AL)	ND-4.9	2.2	ND	0	Erosion of natural deposits

Note : Listed in the table above are substances detected in the District's drinking water or of special interest to certain consumers. Not listed are approximately 135 substances which were below the laboratory detection levels.

* UCMR - Unregulated Constituents Monitoring Rule was promulgated by the EPA to study other constituents.

** Reporting values are determined by methods set by the State depending on the constituent. Most constituent reporting values are determined by simple averaging. For more information on a specific constituent contact the District.

*** Disinfection by-products including Haloacetic acids (HAA5) and Total Trihalomethanes (TTHM) form when naturally occurring organic materials found in potable water react with disinfectants such as chlorine. In particular, elevated HAA5 or TTHM levels in drinking water pose the following health risk: Some people who drink water containing HAA5 or TTHM in excess of the MCL over many years may develop an increased risk of getting cancer.

The State allows us to monitor for some contaminants less than once per year because the concentration do not change very frequently. Some of the data shown, although representative of your water, is more than one year old.

DEFINITIONS

Public Health Goal (PHG) The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Contaminant Level Goal (MCLG) The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Maximum Contaminant Level (MCL) The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Residual Disinfectant Level Goal (MRDLG) The level of a disinfectant (chlorine) added for water treatment at which there is no known or expected risk to health. MRDLGs are set by the USEPA.

Maximum Residual Disinfectant Level (MRDL) The level of a disinfectant (chlorine) added for water treatment that may not be exceeded at the customer's tap.

Regulatory Action Level (AL) The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

Treatment Technique (TT) A required process intended to reduce the level of contaminant in drinking water.

Primary Drinking Water Standards (PDWS) MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.

Secondary Drinking Water Standards (SDWS) MCLs for contaminants that affect taste, odor, or appearance of drinking water. Secondary Contaminants are not based on health effects at MCL levels.

Other Constituents Monitored Some of this information was collected from July 1997 to December 1998 as part of a federal study to evaluate disinfectants and disinfection by-products.

Legend

Symbol "<" denotes 'less than'

µg/L Micrograms per liter (parts per billion)
 mg/L Milligrams per liter (parts per million)
 ND Not detected at testing limit
 NTU Nephelometric Turbidity Units
 PCi/L Picocuries per liter
 (a measure of radiation)
 µmho/cm Micro Ohms per centimeter
 NA Not Analyzed
 None None Required

CUSTOMER VIEWS WELCOME:

If you are interested in learning more about Carpinteria Valley Water District and water quality, or participating in the decision making process, opportunities are available. You can simply come into the District offices and speak to any one of the employees, or call the office at 684-2816. Board of Directors meetings are normally held on the third or fourth Wednesday of the month beginning at 4 pm in the Board room at 1301 Santa Ynez Ave.

Appendix E

District Water Rates

CARPINTERIA VALLEY WATER DISTRICT
1301 SANTA YNEZ AVENUE
CARPINTERIA, CA 93013

2004 - 2005 WATER RATES

M & I	BASIC		PUMPING LEVEL I		PUMPING LEVEL II	
	UNIT	AF	UNIT	AF	UNIT	AF
TYPE I RESIDENTIAL:						
First 7 HCF:	\$2.25		\$2.35		\$2.45	
Next 8 HCF:	\$2.60		\$2.70		\$2.80	
All HCF thereafter:	\$2.95	\$1,277.32	\$3.05	\$1,320.88	\$3.15	\$1,364.44
TYPE I COMMERCIAL INDUSTRIAL & PUBLIC AUTHORITY	\$2.75	\$1,197.90	\$2.85	\$1,241.46	\$2.95	\$1,285.02
TYPE II IRRIGATION*	\$1.44	\$627.26	\$1.54	\$670.82	\$1.64	\$714.38

1 UNIT = 100 HUNDRED CUBIC FEET (HCF) = 748 GALLONS
AF (ACRE FOOT) = 43,560 CUBIC FEET
PUMPING LEVEL I = 350 FEET ABOVE SEA LEVEL
PUMPING LEVEL II = 650 FEET ABOVE SEA LEVEL

MONTHLY SERVICE CHARGES

METER SIZE	SERVICE CHARGE BASIC	SERVICE CHARGE SWP	SERVICE CHARGE CIP	TOTAL SERVICE CHARGE
5/8"	4.13	25.74	11.11	40.98
3/4"	4.13	25.74	11.11	40.98
1"	6.88	42.90	11.11	60.89
1 1/2"	13.75	85.80	11.11	110.66
2"	22.00	137.28	11.11	170.39
3"	44.00	274.56	11.11	329.67
4"	68.75	429.00	11.11	508.86
6"	137.50	858.00	11.11	1,006.61
8"	316.25	1,973.40	11.11	2,300.76

MONTHLY FIRE ACCOUNT CHARGE

METER SIZE	SERVICE CHARGE BASIC	SERVICE CHARGE SWP	TOTAL SERVICE CHARGE
2"	2.75	17.16	19.91
3"	6.19	38.61	44.80
4"	11.00	68.64	79.64
6"	24.75	154.44	179.19
8"	44.00	274.56	318.56
10"	68.75	429.00	497.75
HYDRANT	14.17	160.91	175.08
LINE	21.22	241.22	262.44

SWP = STATE WATER PROJECT
CIP = CAPITAL IMPROVEMENT PROGRAM

*All Type II Irrigation accounts with at least one dwelling unit will be assessed a \$14.95 Residential Equivalency Fee per dwelling unit.

Appendix F

Groundwater Management Plan

Groundwater Management Plan

Carpinteria Valley Water District

August 14, 1996

Adopted and approved by the Board of
Directors of the Carpinteria Valley Water
District at a regular Board meeting held on
August 14, 1996, by Resolution No. 670


Charles B. Hamilton, Secretary

Table of Contents

	page no.
Introduction	3
Description of the Groundwater Basin	4
Estimated Storage	4
Historical Monitoring and Reports	4
Historical Variations in Groundwater Levels	5
Historical Variations in Groundwater Pumpage	5
Water Quality	6
Action Elements	6
Inventory of Wells	6
Monitoring of Groundwater Levels and Quality	7
Creation of a Database and Reporting System	7
Identification and Monitoring of Recharge Areas	8
Implementation of a Sanitary Seal Retrofit Program	8
Implementation of a Well Abandonment and Destruction Program	9
Dissemination of Public Information Relative to the Plan	9
Procedure for Changes to Plan	9
Figure 1 Map of Carpinteria Groundwater Basin	10
Exhibit A State Water Code Section 13050	
Exhibit B Santa Barbara County Ordinance No. 3458	
Exhibit C Water Well Standards: State of California Bulletin 74-81 (excerpts)	
Exhibit D California Well Standards Bulletin 74-90 (excerpts)	

Introduction

Assembly Bill 3030 (AB3030), passed by the California Legislature in 1992, provides for management of groundwater basins in order to maintain and protect water quality, maximize water supply, and to eliminate protracted legal battles over groundwater. The bill encourages local agencies to create and adopt groundwater management plans for their groundwater basins.

Based upon current information about the volume and quality of groundwater available in the Carpinteria Valley basin, there appears to be no compelling reason for an aggressive groundwater management effort by the Carpinteria Valley Water District (CVWD).

There is, however, a clear need for the systematic monitoring and analysis of groundwater levels as well as water quality in the Carpinteria Valley. There is a *growing use* of the basin by private landowners as a source of irrigation water and the *continuing need* to maintain the basin as a major sustainable drinking water resource for all.

Systematic monitoring, analysis and reporting will provide an early warning/detection system, should the growing use of the basin begin to adversely affect the basin. As a management tool, the use of such a system allows for informed decision-making relative to other possible management actions relative to other possible elements of a groundwater management plan identified in the legislation.

Responding to the AB3030 initiative, and the desire to accept the groundwater management challenge, Carpinteria Valley Water District's Board of Directors adopted a Resolution of Intention to draft a Groundwater Management Plan on September 14, 1994.

Description of the Groundwater Basin

The Carpinteria Groundwater Basin extends from a small area located in Ventura County, east of the Santa Barbara County line, across the Carpinteria Valley, to and including the small Toro Canyon area on the west. The areal extent of the basin is about 12 square miles (Figure 1).

Estimated Storage

Geotechnical Consultants, Inc. (GCI) estimated in 1986 that of the total basin storage, 700,000 acre feet, about 27%, or 170,000 acre feet is located in Storage Unit No. 1, in four major aquifers within the area of confined groundwater. Safe yield of the basin is estimated to be about 5,000 acre feet (GCI, 1986).

Historical Monitoring and Reports

Collection of data and evaluation of the groundwater resources in the Carpinteria Valley area have historically been performed by the United States Geological Survey (USGS) in conjunction with the Santa Barbara County Water Agency and the Carpinteria Valley Water District (District). Data collection was begun by USGS in 1941. In 1972 the USGS monitored 19 wells. Data from the monitoring of wells were supplemented with a survey conducted in 1973 in conjunction with a test hole drilling program conducted by the District and Geotechnical Consultants, Inc. Reports on the hydrogeology and surface water hydrology of the basin were published by the USGS in 1949, 1951 and 1962. Detailed hydrogeologic investigation reports were prepared by Geotech Consultants, Inc. in 1972, 1976 and 1986. A detailed description of the basin with an emphasis on aquifer characteristics and well yields was also prepared by Richard Slade in 1975. Limited water quality data was available for about 25% of the wells in the basin in 1976, as is the case in 1996.

Rain gauges within the Carpinteria Valley have been maintained since 1941 at the Middle School and at the Carpinteria Reservoir since 1957. The USGS has collected data on streamflow measurements on Carpinteria Creek since 1941.

Since 1976 the District and the USGS have had a cooperative agreement providing for groundwater level measurements and other water quality data from 41 wells in the Valley. The agreement also provides for continued operation and maintenance of the stream gauging station for Carpinteria Creek.

Historical Variations in Groundwater Levels

At the time of the District's formation in 1941, groundwater levels were declining. Hydrographs for the basin indicate that from 1947 to 1951, prior to the importation of surface water from Lake Cachuma, groundwater levels fell below sea level. Hydrographs since 1951 show rising water levels leading up to artesian conditions in 1979. Since the 1986-91 drought, when levels declined as well production increased, water levels have nearly returned to the historic high level brought about the very wet winter of 1983.

Historical Variations in Groundwater Pumpage

Groundwater pumpage has varied greatly over the last 60 years depending upon the availability of surface water, precipitation and land use. Both irrigation acreage and total pumpage doubled after World War II. Following the introduction of Cachuma Project water in the early 50's, pumpage declined. Toward the end of the most recent 1987-91 drought, as many as 60 additional private wells were drilled, bringing the total number of private wells to about 100. Estimated private pumpage that once averaged about 1,600 acre feet/year, reached a new high in 1994 of 2,780 acre feet. District pumping historically averaged about 2,200 acre feet/year, but in 1994 totaled 1,305 acre feet. Total 1994 pumpage (District and private) was 4085 acre feet, or about 82 % of the conservatively estimated 5,000 acre feet safe yield of the basin.

Water Quality

There are no known contamination problems in the Carpinteria Valley groundwater basin. Chloride, a common sea water constituent, is generally low in samples taken from the basin. Total Dissolved Solids (TDS) concentrations range from a low 450 to moderate 980 PPM. It is believed that the Rincon Thrust fault acts as a barrier to sea water intrusion.

Action Elements

1. Inventory of Wells

The profile of each drilled well in the Plan area shall include the following:

- a. Location
- b. Size of well casing (diameter)
- c. Size of pump (horsepower)
- d. Depth
- e. Sanitary seal: yes / no depth
- f. Meter: yes / no
- g. Active / inactive/ abandoned / destroyed
- h. Secured: yes / no
- i. Other data if available: drillers log, electric log, chemical analysis, etc.

Note: This information will be treated as confidential information in the same way that customer account information is treated and released only with written permission of the well owners.

2. Monitoring of Groundwater Levels and Quality.

Groundwater levels shall be measured (frequency to be determined), and aquifer characteristics calculated annually, in conjunction with the USGS. The scope of this effort will be expanded as needed to encompass the whole basin.

Annually, wells (number to be determined) shall be sampled for nitrate, chloride, total dissolved solids (TDS), and boron. A second sample (number to be determined) of wells shall be tested for general mineral and inorganic characteristics. A third sample (number to be determined) of wells shall be tested on an "as needed" basis for trace contaminants such as VOCs (volatile organic chemicals). Frequency of sampling for water quality may increase if a problem is identified. It is anticipated that water quality information produced by the private pumpers will also be shared with the District.

Note: Participation in this effort by well owners, whether solely by providing the District with well information (Element 1), or by allowing sampling and water level measurements (Element 2), or both, is entirely voluntary. Results of District water quality testing and water level measurements will be shared with well owners. Water quality testing by the District may result in benefits to all well owners through pooled purchasing power, and this opportunity will be explored.

3. Creation of a Database and Reporting System.

All water level and water quality information shall be obtained and correlated by the District. The District will prepare an annual summary report of the data and findings, entitled Carpinteria Valley Groundwater Basin Report.

4. Identification and Monitoring of Recharge Areas

In monitoring recharge areas, the Manager will include in the annual Basin Report, a status report on recharge areas in the watershed. The status report will identify the major recharge areas of the watershed and identify significant potential and/or actual threats caused by pollution or reduction of recharge area.

5. Implementation of a Sanitary Seal Retrofit Program

Wells identified as being contaminated or polluted, or subject to a material or substantial contamination or pollution risk (in accordance with the definitions of contamination and pollution provided in State Water Code Section 13050, attached as Exhibit A) and identified as not having a sanitary seal, shall be fitted with sanitary seals or remedied by other actions as determined by the District, at the owners expense, in accordance with State and County standards, incorporated in this Plan as Exhibit B, County Ordinance No. 3458, Exhibit C, Water Well Standards: State of California Bulletin 74-81, and Exhibit D, California Well Standards Bulletin 74-90.

Examples of a “material or substantial risk” would include but not be limited to the following:

- 1) a septic tank in close proximity to a well
- 2) storage of hazardous materials in close proximity to a well
- 3) a well located within a drainage channel or in a floodplain
- 4) a leach field in close proximity to a well
- 5) a horse or other livestock corral in close proximity to a well.

6. Implementation of a Well Abandonment and Destruction Program

All abandoned and/or improperly secured wells shall be identified and at the owner's expense, abandoned and secured in accordance with current State and County requirements, attached as Exhibits B, C and D.

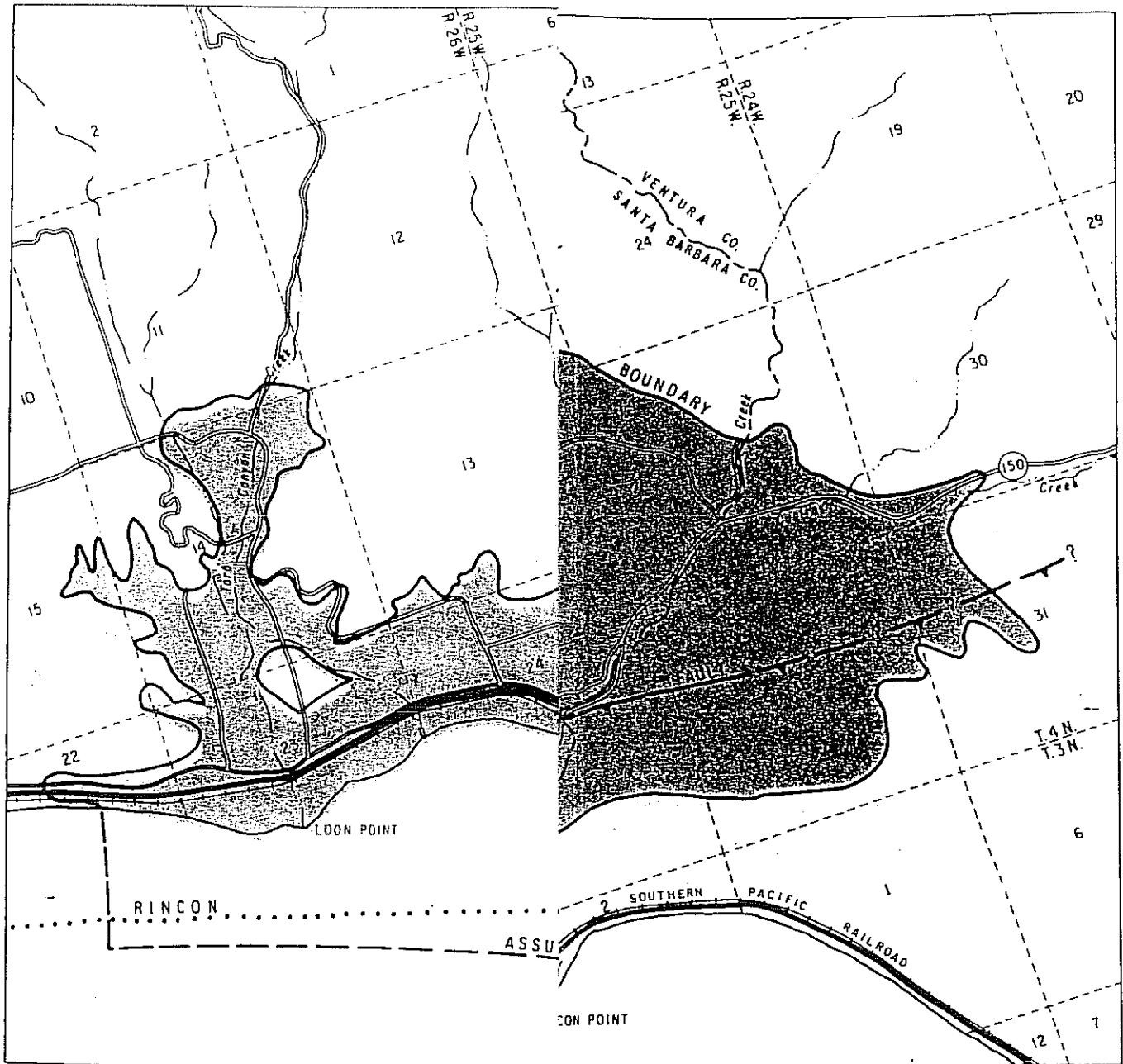
All wells that need to be destroyed shall be identified and at the owner's expense, destroyed in accordance with current State and County requirements attached as Exhibits B, C and D.

7. Dissemination of Public Information Relative to the Plan



The District shall prepare a well owners handbook, including information and regulations about well drilling, the dangers of open and/or improperly secured wells, and well abandonment and destruction procedures.

8. Procedure for Changes in Plan

Material or substantial changes to the Board approved Plan will necessitate a complete review and public participation process as set forth in AB3030.



GEOTECH CONSULTANTS, INC.

-  CARPINTERIA GROUND WATER BASIN BOUND.
-  BOUNDARY BETWEEN AREA OF AND CONFINED GROUND WATER

Chapter 1

POLICY

Law Review Commentaries

From elephants to mice: The development of EB-MUD's program to control small source wastewater discharges. Raoul Stewardson, 20 Ecology L.Q. 441 (1993).

§ 13000. Conservation, control, and utilization of water resources; quality; statewide program; regional administration

Cross References

Hazardous substance release sites, revision of investigation and cleanup policies, see Health and Safety Code § 25355.7.

Law Review Commentaries

Nuisance law and petroleum underground storage tank contamination: Plugging the hole in the statutes. James B. Brown and Glen C. Hansen, 21 Ecology L.Q. 643 (1994).

Notes of Decisions

Construction with other law 9

9. Construction with other law
Existence of substantial statutory law applicable to predecessors' contamination of property through unlawful

hazardous discharges did not bar subsequent owner from advancing common-law claims of nuisance, trespass, and negligence. Newhall Land and Farming Co. v. Superior Court (Mobil Oil Corp.) (App. 5 Dist. 1993) 23 Cal.Rptr.2d 377, 19 Cal.App.4th 334, review denied.

§ 13001. Legislative intent

Notes of Decisions

Water erosion 2

2. Water erosion

Although initial study found that housing development project, as proposed, would increase water erosion, city, as lead agency under California Environmental Quality Act

(CEQA), was not required to send proposed negative declaration to regional water quality control board; although state Water Quality Control Board and various regional boards had statutory jurisdiction over water quality, they had no particular authority over water erosion. Gentry v. City of Murrieta (McMillin Communities) (App. 4 Dist. 1995) 43 Cal.Rptr.2d 170, 36 Cal.App.4th 1359, modified on denial of rehearing.

Chapter 1.5

SHORT TITLE

§ 13020. Title of division

Law Review Commentaries

Nuisance law and petroleum underground storage tank contamination: Plugging the hole in the statutes. James B. Brown and Glen C. Hansen, 21 Ecology L.Q. 643 (1994).

Chapter 2

DEFINITIONS

Section

13050. Definitions.

§ 13050. Definitions

As used in this division:

- (a) "State board" means the State Water Resources Control Board.
- (b) "Regional board" means any California regional water quality control board for a region as specified in Section 13200.
- (c) "Person" includes any city, county, district, the state, and the United States, to the extent authorized by federal law.
- (d) "Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.
- (e) "Waters of the state" means any surface water or groundwater, including saline waters, within the boundaries of the state.
- (f) "Beneficial uses" of the waters of the state that may be protected against quality degradation include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.
- (g) "Quality of the water" refers to chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use.
- (h) "Water quality objectives" means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.
- (i) "Water quality control" means the regulation of any activity or factor which may affect the quality of the waters of the state and includes the prevention and correction of water pollution and nuisance.
- (j) "Water quality control plan" consists of a designation or establishment for the waters within a specified area of all of the following:
- (1) Beneficial uses to be protected.
 - (2) Water quality objectives.
 - (3) A program of implementation needed for achieving water quality objectives.
- (k) "Contamination" means an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.
- (l)(1) "Pollution" means an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following:
- (A) The waters for beneficial uses.
 - (B) Facilities which serve these beneficial uses.
- (2) "Pollution" may include "contamination."
- (m) "Nuisance" means anything which meets all of the following requirements:
- (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
 - (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
 - (3) Occurs during, or as a result of, the treatment or disposal of wastes.
- (n) " * * * Recycled water" means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefor considered a valuable resource.
- (o) "Citizen or domiciliary" of the state includes a foreign corporation having substantial business contacts in the state or which is subject to service of process in this state.
- (p)(1) "Hazardous substance" means either of the following:

Additions or changes indicated by underline; deletions by asterisks * * *

(A) For discharge to surface waters, any substance determined to be a hazardous substance pursuant to Section 311(b)(2) of the Federal Water Pollution Control Act (33 U.S.C. Sec. 1251 et seq.).

(B) For discharge to groundwater, any substance listed as a hazardous waste or hazardous material pursuant to Section 25140 of the Health and Safety Code, without regard to whether the substance is intended to be used, reused, or discarded, except that "hazardous substance" does not include any substance excluded from Section 311(b)(2) of the Federal Water Pollution Control Act because it is within the scope of Section 311(a)(1) of that act.

(2) "Hazardous substance" does not include any of the following:

(A) Nontoxic, nonflammable, and noncorrosive stormwater runoff drained from underground vaults, chambers, or manholes into gutters or storm sewers.

(B) Any pesticide which is applied for agricultural purposes or is applied in accordance with a cooperative agreement authorized by Section 2426 of the Health and Safety Code, and is not discharged accidentally or for purposes of disposal, the application of which is in compliance with all applicable state and federal laws and regulations.

(C) Any discharge to surface water of a quantity less than a reportable quantity as determined by regulations issued pursuant to Section 311(b)(4) of the Federal Water Pollution Control Act.

(D) Any discharge to land which results, or probably will result, in a discharge to groundwater if the amount of the discharge to land is less than a reportable quantity, as determined by regulations adopted pursuant to Section 13271, for substances listed as hazardous pursuant to Section 25140 of the Health and Safety Code. No discharge shall be deemed a discharge of a reportable quantity until regulations set a reportable quantity for the substance discharged.

(q)(1) "Mining waste" means all solid, semisolid, and liquid waste materials from the extraction, beneficiation, and processing of ores and minerals. Mining waste includes, but is not limited to, soil, waste rock, and overburden, as defined in Section 2732 of the Public Resources Code, and tailings, slag, and other processed waste materials, including cementitious materials that are managed at the cement manufacturing facility where the materials were generated.

(2) For the purposes of this subdivision, "cementitious material" means cement, cement kiln dust, clinker, and clinker dust.

(r) "Master recycling permit" means a permit issued to a supplier or a distributor, or both, of recycled water, that includes waste discharge requirements prescribed pursuant to Section 13263, and water recycling requirements prescribed pursuant to Section 13523.1.

(Amended by Stats.1992, c. 211 (A.B.3012), § 1; Stats.1995, c. 28 (A.B.1247), § 17; Stats.1995, c. 847 (S.B.206), § 2.)

Historical and Statutory Notes

1995 Legislation

Section affected by two or more acts at the same session of the legislature, see Government Code § 9605.

Cross References

Pipes carrying reclaimed water, special marlings, reclaimed water defined, see Health and Safety Code § 116815.

Law Review Commentaries

Nuisance law and petroleum underground storage tank contamination: Plugging the hole in the statutes. James

B. Brown and Glen C. Hansen, 21 Ecology L.Q. 643 (1994).

Notes of Decisions

Nuisance 8

5. Silt or sediment

Lake Madrone Water Dist. v. State Water Resources Control Bd. (App. 3 Dist. 1989) 256 Cal.Rptr. 894, 209 Cal.App.3d 163, modified, [main volume] review denied.

4. Mining waste

People v. New Penn Mines, Inc. (App. 3 Dist. 1963) 28 Cal.Rptr. 337, [main volume] 212 Cal.App.2d 667.

8. Nuisance

Pollution of water constitutes public nuisance, and water pollution occurring as result of unlawful treatment or discharge of wastes is public nuisance per se. Newhall

Land and Farming Co. v. Superior Court (Mobil Oil Corp.) (App. 5 Dist. 1993) 23 Cal.Rptr.2d 377, 19 Cal.App.4th 334, review denied.

Property owner's allegations that predecessors in title discharged hazardous substances in violation of California law that leached through soil and polluted groundwater supported existence of public nuisance, and owner's addi-

tional allegations that he used water from property for farming, that he was unable to sell property because of contamination, and that he spent money investigating pollution stated claim for private nuisance. Newhall Land and Farming Co. v. Superior Court (Mobil Oil Corp.) (App. 5 Dist. 1993) 23 Cal.Rptr.2d 377, 19 Cal.App.4th 334, review denied.

Chapter 3

STATE WATER QUALITY CONTROL

Article 1

STATE WATER RESOURCES CONTROL BOARD

§ 13100. Creation of state and regional boards; duties of state board

Federal Environmental Laws

National environmental policy, 42 U.S.C.A. §§ 4321 to 4370a.

Safety of public water systems, 42 U.S.C.A. §§ 300f to 300j-11.

Water pollution prevention and control, 33 U.S.C.A. §§ 1251 to 1376.

Water resources research, 42 U.S.C.A. §§ 10301 to 10309.

Article 3

STATE POLICY FOR WATER QUALITY CONTROL

Section

13142. Principles and guidelines.

13142.5. Coastal marine environment.

§ 13140. Adoption of statewide policy for water quality control

Law Review Commentaries

Assessing point source discharge permit trading: Case study in controlling selenium discharges to the San Fran-

cisco Bay Estuary. Alexandra Teitz, 21 Ecology L.Q. 79 (1994).

§ 13142. Principles and guidelines

State policy for water quality control shall consist of all or any of the following:

(a) Water quality principles and guidelines for long-range resource planning, including ground water and surface water management programs and control and use of recycled water.

(b) Water quality objectives at key locations for planning and operation of water resource development projects and for water quality control activities.

(c) Other principles and guidelines deemed essential by the state board for water quality control.

The principles, guidelines, and objectives shall be consistent with the state goal of providing a decent home and suitable living environment for every Californian.

(Amended by Stats.1995, c. 28 (A.B.1247), § 18.)

§ 13142.5. Coastal marine environment

In addition to any other policies established pursuant to this division, the policies of the state with respect to water quality as it relates to the coastal marine environment are that:

(a) Wastewater discharges shall be treated to protect present and future beneficial uses, and, where feasible, to restore past beneficial uses of the receiving waters. Highest priority shall be given to improving or eliminating discharges that adversely affect any of the following:

(1) Wetlands, estuaries, and other biologically sensitive sites.

(2) Areas important for water contact sports.

Additions or changes indicated by underline; deletions by asterisks * * *

AN ORDINANCE REGULATING THE CONSTRUCTION, MODIFICATION OR REPAIR, DESTRUCTION AND INACTIVATION OF WELLS WITHIN THE UNINCORPORATED AREA OF THE COUNTY OF SANTA BARBARA BY MODIFYING CERTAIN PROVISIONS OF CHAPTER 34A OF THE COUNTY CODE AND ADOPTING BY REFERENCE THE STANDARDS CONTAINED IN BULLETIN 74-81 WATER WELL STANDARDS, STATE OF CALIFORNIA OF THE CALIFORNIA DEPARTMENT OF WATER RESOURCES.

The Board of Supervisors of the County of Santa Barbara do ordain as follows:

SECTION 1

Chapter 34A of the Santa Barbara County Code is hereby repealed and a new Chapter 34A is hereby added as follows:

SEC. 34A-1. PURPOSE

It is the purpose of this ordinance to regulate the (1) construction, (2) modification or repair, (3) destruction, (4) inactivation of wells in such a manner that the groundwater of the County will not be contaminated or polluted, and that water obtained from wells will be suitable for beneficial use and will not jeopardize the health, safety or welfare of the people of this County.

SEC. 34A-2. ACTS PROHIBITED, PERMIT REQUIRED

(a) It shall be unlawful for any person to construct, modify or repair, destroy or inactivate any well unless such person has (1) obtained a permit issued from the County for the specific work to be performed, or (2) in the case of an emergency, fully complied with the provisions of this ordinance relating to emergencies.

(b) It shall be unlawful for any person to construct, modify or repair, destroy or inactivate any well unless such construction modification or repair, destruction or inactivation is in accordance with the standards set forth in this ordinance.

SEC. 34A-3. DEFINITIONS

(a) Applicant. Applicant shall mean (1) the legal owner(s) of the property on which the well is to be constructed, modified or repaired or destroyed, or (2) that owner's agent authorized in writing to make this application, or (3) a licensed well drilling contractor who shall perform the work on the well.

(b) Contamination and Pollution. Contamination and pollution shall have the meanings ascribed to them by California Water Code, Section 13050.

(c) County. County shall mean the County of Santa Barbara, acting through its Board of Supervisors or the Santa Barbara County Health Officer, as the duly authorized representative of the Board of Supervisors.

(d) Destruction. Destruction of wells shall consist of the complete filling of the well in accordance with the procedures outlined in Bulletin 74-81, "Water Well Standards: State of California: of the California Department of Water Resources.

(e) Emergency. Emergency shall mean a circumstance which is either (1) and imminent threat of or is actually contaminating or polluting the groundwater of this County, or (2) jeopardizes the health or safety of the people of the County, or (3) will cause a substantial or immediate loss of property, crops, or livestock.

(f) Inactivate Well of Inactivation. An inactive well is one not routinely operating but capable of being made operable with a minimum of effort. It shall be considered abandoned and proper destruction required when it has not been used for a period of one year, unless the owner demonstrates his intention to use the well again. Inactivation of a well shall be accomplished by filing a permit stating the intention to reuse the well and properly maintain the well as inactive per the requirements of Bulletin 74-81.

(g) Modification or Repair. Modification or repair shall only mean the deepening of a well, reoperation, sealing or replacement of a well casing.

(h) Nuisance. Nuisance shall mean a well which threatens to or which contaminates or pollutes the groundwater of this County in such a way that it jeopardizes the health and safety of the public. A nuisance also means anything which creates and unsanitary or unsafe condition resulting from water well drilling activity.

(i) Person. Person shall mean any individual, firm, partnership, general corporation, association or governmental entity. Governmental entity, as used herein, shall not include any local agency exempt from the application of this ordinance pursuant to State Law.

(j) Well or Water Well. The term "well" or "water well" means any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into the ground. It shall also include "cathodic protection wells", as defined in California Water Code, Section 13711. This definition shall not include:

(1) Oil and gas wells, or geothermal wells constructed under the jurisdiction of the California State Department of Conservation, except those wells converted to use as water wells: or

(2) Wells used for the purpose of:

a) Dewatering excavation during construction, or

b) Stabilizing hillsides or earth embankments.

(k) Words not otherwise defined in this ordinance shall have the meaning ascribed to them in Chapter II of the California Department of Water Resources Bulletin No. 74-81 (Water Well Standards) and Chapter II of 74-1 (Cathodic Protection Well Standards), as each may be amended.

EXHIBIT B
SEC. 34-A. PERMITS

Application for the permit required by this ordinance shall be (1) made in writing to the County on such forms as may be prescribed by the County, (2) signed by the applicant, and, (3) accompanied by a fee established by this Ordinance (no part of said fee shall be refundable) and, (4) shall include but no be limited to the following:

(a) Applicant's name and address; a statement that the person drilling the well is licensed under the provisions of Chapter 9 of Division 3 of the Business and Professions Code as a well drilling contractor and such license is in full force and effect; the number of such license; or, in lieu of the two latter enumerated matters, a statement that the applicant is exempt from the provisions of Chapter 9 of Division 3 of the Business and Professions Code and the basis for the alleged exemption.

(b) Estimated or proposed depth of the well, casing material, sealing material, sealing method, use of the well, and drilling method to be used.

(c) Location of the property and well site including street address and/or Assessor's Parcel Number; and the legal owner of the property.

(d) A plot plan indicating the location of the well with respect to the following items:

(1) Property lines.

(2) Sewage disposal systems or works carrying or containing sewage or industrial wastes within a 200-foot radius of the proposed well.

(3) All perennial, seasonal, natural, or artificial water bodies or watercourses, including location of 100-year floodplain, if applicable.

(4) Drainage pattern of the property.

(5) Existing wells within a 100 ft. radius of the proposed well.

(6) Access roads and easements (water, sewer, utility, roadway).

(7) Existing and/or proposed structures.

(8) Animal or fowl enclosures, pens, paddocks, stockyards within a 100 foot radius of proposed well site.

(e) Permits shall be issued subject to the terms, conditions and standards of this ordinance and may be denied only if the specific work to be performed of construction, modification or repair, destruction or inactivation as proposed would violate the terms, conditions or standards of this Ordinance.

(f) The issuance of a permit hereunder shall be deemed to be an administrative ministerial, non-discretionary act, and if an applicant complies with the terms, conditions, and standards of this Ordinance, said permit shall be issued within five (5) working days.

(g) A permit issued for construction of a well covers the construction of one (1) completed well. If the well driller proposes to change the site of the well from that shown on the site plan of a permit, the change in site must be approved by the County prior to drilling. The County shall give approval or disapproval of the change in site within 24 hours of notification by the well driller.

(h) Every permit issued pursuant to this ordinance shall expire upon completion of the task authorized thereby; however, in any even such permit shall expire one (1) year from date of issuance.

(i) **Guarantee of Performance.** Prior to the issuance of a permit, the person drilling the well shall post with the County a cash deposit or bond to guarantee compliance with the terms of this Ordinance and the applicable permit. Such cash or bond to be in any amount deemed necessary by the Health Officer to include but not be limited to the remedy of improper work, but not in excess of the total estimated cost of such work. Licensed Well Drilling contractors shall not be required to post a bond or deposit guaranteeing performance. 85 percent of the deposit or bond shall be returned to the permittee when the work has been completed to the satisfaction of the Health Officer; the remaining 15 percent of the bond shall be returned after one (1) year of satisfactory well operation as determined by the Health Officer. These percentages may vary to cover special conditions and circumstances in order to guarantee performance and compliance with the Ordinance.

SEC. 34A-5. STANDARDS

Standards for construction, repair or modification, destruction or inactivation are set forth in Chapter II of the California Department of Water Resources Bulletin No. 74-81, Water Well Standards, and Bulletin 74-1, Cathodic Protection Well Standards, and are hereby adopted as a part of this Ordinance, with the following additional clarification and requirements for well construction.

(a) **Annular Space.** Gravity installation of the sealant in an annular space of a well is acceptable if the interval to be sealed is dry and the interval depth is 50 feet or less. Sealant shall be pumped into the space using a tremie or grout pipe when there is water in the annulus, or the annulus exceeds 50 feet.

(b) **Disinfection Tube.** Every well shall be equipped with an adequately sized opening by which disinfecting agents may be conveniently introduced directly into the well casing. This opening shall be protected against entrance of contaminants by installation of a watertight cap or plug.

(c) **Drilling Waste.** Drilling waste must be controlled and may not be discharged so as to create conditions which violate Water Quality Control Board Regulations, other State Laws, Federal Regulations or Local Ordinances.

(d) **Mud Pits.** Mud pits created to confine drilling mud shall be maintained during the well drilling operation so as not to be a safety hazard. It shall be the well driller's responsibility to properly earth fill the mud pit(s) upon completion of the job.

(e) **Set-up Time.** The minimum time that must be allowed for annular seals containing Type II and III (6-sack) cement to set shall be 16 hours before construction operations on the well may be resumed. When additives to shorten setting time are used with the cement, this set-up time may be reduced to a minimum of 12 hours before air jetting, bailing, swabbing, test pumping or further construction on the well may be resumed.

(f) **Log of Well.** Any person who has drilled, dug, excavated or bored a well subject to this Ordinance, shall within thirty (30) days after completing of the work, furnish the County with a copy of the State driller's report. The well driller shall notify the County if submission of the log is to be delayed.

(g) **Horizontal Wells.** The location and design of horizontal or lateral wells shall be approved by the County on a case-by-case basis prior to approval to construct or reconstruct such wells.

(h) Administrative Variance. The Health Officer may grant an administrative variance to the provisions of this Ordinance where written evidence is submitted that a modification of the standards will not endanger the health or safety of the public and strict compliance would be unreasonable in view of all the circumstances.

SEC. 34A-7. EMERGENCY

In the event of an emergency, a person may construct, modify or repair, destroy or inactivate a well without the permit required by this Ordinance providing that (1) such work is performed in conformance with the standards set forth herein, (2) the County is notified of such emergency work by the following County working day, and (3) an application for the required permit is made within three (3) County working days after initiation of such emergency work.

SEC. 34A-7. ENFORCEMENT

(a) The County may suspend or revoke a well permit issued under the Ordinance whenever the County determines that a condition resulting from any work performed under such a permit constitutes a nuisance as defined herein, or when the applicant, his agents, employees or the licensed well drilling contractor performing the work (1) violates any provision of this ordinance or any terms and conditions of the permit or (2) misrepresents any material facts in the application for a permit.

(b) Except in emergency situations, before the County suspends or revokes a well permit, the County shall make reasonable effort to notify the applicant and the licensed well driller performing work under the permit if he is not the applicant and to provide an opportunity for each to show cause why the permit should not be suspended or revoked.

(c) Upon notification by the County that the permit is suspended or revoked, or finding that no valid permit has been issued, no further work shall be performed until such violation has been abated.

(d) Rules and Regulations. The Health Officer may adopt rules and regulations to implement and administer this Ordinance.

SEC. 34A-8. NUISANCE

Upon finding by the County that well or well drilling activity constitutes a nuisance, as defined herein, the County may take the necessary action to abate such nuisance. The property owner where the well is located and/or the person causing the nuisance thereof shall be jointly liable for the reasonable costs incurred by or at the request of the County for abatement of the nuisance.

SEC. 34A-9. APPEAL

Any person whose application for a permit has been suspended, revoked or denied or whose request for an administrative variance has been denied may appeal to the Board of Supervisors of the County of Santa Barbara in writing within ten (10) days after the notice of such suspension, revocation or denial. Said appeal shall specify the reasons therefore and shall be accompanied by a filing fee, if any, as established by the Board of Supervisors of the County of Santa Barbara. The Clerk of the Board of Supervisors shall set the appeal for the hearing and shall give notice to the appellant and the appropriate County personnel of the time and place of the hearing.

SEC. 34A-10. INSPECTION

The County shall be notified at least twenty-four (24) hours in advance to make an inspection of, 1) the sealing of the annular space on a well, 2) the destruction of wells, and 3) any other operation which may be stipulated on the permit by the County to cope with special or unusual conditions.

The County shall have the right to enter upon any property at any reasonable time to make inspections and examinations for the purpose of enforcement of this Ordinance, subject to the provisions of Code of Civil Procedure Section 1822.50 et seq.

SEC. 34A-11. APPLICATION FEES

(a) Each application for a well construction or modification permit shall be accompanied by a permit fee of \$155.00.

(b) Each application for a well destruction or inactivation permit shall be accompanied by a permit fee of \$95.00.

(c) An additional fee of \$30 per hour shall be charged to the permittee for any inspection service by the Health Officer which exceeds five (5) hours on-site for witnessing annular seals, and the abatement of nuisances or hazards resulting from the well drilling operation. These application fees may be modified by Resolution of the Board of Supervisors.

SEC. 34A-12. PENALTIES

Any person who violates any provision of this Article is guilty of a misdemeanor. Each offense shall be punishable by a fine of not less than twenty-five dollars (\$25.00) or more than one thousand dollars (\$1,000.00) or by imprisonment in the County jail for a term not exceeding six months, or by both such fine and imprisonment. Each day such offense continues shall constitute a separate offense.

SECTION 2

This Ordinance shall take effect and be in force at the expiration of thirty days from the date of its passage; and before the expiration of fifteen days after its passage it, or a summary of it, shall be published once, with the names and the members of the Board of Supervisors voting for and against in the Santa Barbara News Press, a newspaper of general circulation published in the County of Santa Barbara, State of California.

Department of
Water Resources

Bulletin 74-81

Water Well Standards: State of California

December 1981

Huey D. Johnson
Secretary for Resources
The Resources
Agency

Edmund G. Brown Jr.
Governor
State of
California

Ronald B. Robie
Director
Department of
Water Resources

Section 5. Special Standards.

A. In locations where existing geologic or ground water conditions require standards more restrictive than those described herein, such special additional standards may be prescribed by the enforcing agency.

B. Special standards are necessary for the construction of recharge or injection wells,^{1/} horizontal wells and other unusual types of wells. Design of these wells is subject to the approval of the enforcing agency.

Section 6. Well Drillers.

The construction, alteration, or destruction of wells shall be performed by contractors licensed in accordance with the provisions of the Contractors License Law (Chapter 9, Division 3, of the Business and Professions Code) unless exempted by that act.

Section 7. Reports.

Reports concerning the construction, alteration, or destruction of water wells shall be filed with the California Department of Water Resources in accordance with the provisions of Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code.^{2/}

Part II. Well Construction

Section 8. Well Location with Respect to Contaminants and Pollutants.

A. All wells shall be located an adequate horizontal distance from potential sources of contamination and pollution.^{3/}

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- ^{1/} A program to protect underground drinking water sources from endangerment by the subsurface emplacement of fluids through well injection is required under the Federal Safe Drinking Water Act. (Public Law 93-523) signed into law December 16, 1974. On June 24, 1980, the U. S. Environmental Protection Agency issued rules and regulations establishing technical criteria and standards governing the construction of injection wells. Revisions were made August 27, 1981, and October 1, 1981. These regulations are Part 146 of Title 40, Protection of Environment, of the Code of Federal Regulations (40CFR146).
 - ^{2/} Information about the report is contained in "Guide to the Preparation of the Water Well Drillers Report", Department of Water Resources, October 1977.
 - ^{3/} Such potential sources of contamination and pollution include: sewers, both sanitary and storm sewers, leaching fields (from septic tanks), sewage and industrial waste ponds, barnyard and stable areas, feedlots, solid waste disposal sites, tanks and pipelines (both above ground and buried) for storage and conveyance of petroleum products or chemicals, etc.

Most of the factors involved in determining safe distances in a particular area are usually not known. Based on past experience and general knowledge, the following horizontal distances are considered safe where dry upper unconsolidated formations, less permeable than sand, are encountered:1/2/

Sewer, watertight septic tank, or pit privy	50 feet (15 metres)
Subsurface sewage leaching field	100 feet (30 metres)
Cesspool or seepage pit	150 feet (45 metres)
Animal or fowl enclosure	100 feet (30 metres)

Where in the opinion of the enforcing agency adverse conditions exist, the above distances shall be increased or special means of protection, particularly in the construction of the well, shall be provided.

B. In addition, if possible, the well shall be located up the ground water gradient (upstream) from the specified sources of contamination. By doing so this provides assurance that potential contamination would be moving naturally away from the area of production. However, in an unconfined aquifer consideration shall also be given to the possibility of reversal of gradient near the well due to pumping (see Figure 3), the pumping of nearby wells, or general decline of the water table.3/

C. The top of the casing shall terminate above grade or above any known conditions of flooding by drainage or runoff from the surrounding land. For community water supply wells this level is defined as above the

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- 1/ Because of the many variables involved in the determination of the safe horizontal distance of a well from potential sources of contamination and pollution, no one set of distances will be adequate and reasonable for all conditions. In areas where adverse conditions exist, the distances listed should be increased. Conversely, where especially favorable conditions exist or where special means of protection, particularly in construction of the well are provided, lesser distances may be acceptable if approved by the enforcing agency.
- 2/ If the well is a radial collector well, these distances apply to the furthest extended points of the well.
- 3/ When water is pumped from a well a drawdown "cone of depression" is formed in the water surface surrounding the well and ground water in the area of the cone flows toward the well. Similar cones formed by nearby wells can influence the shape of the cone or enlarge the area being drawn upon resulting in a change in direction of flow.

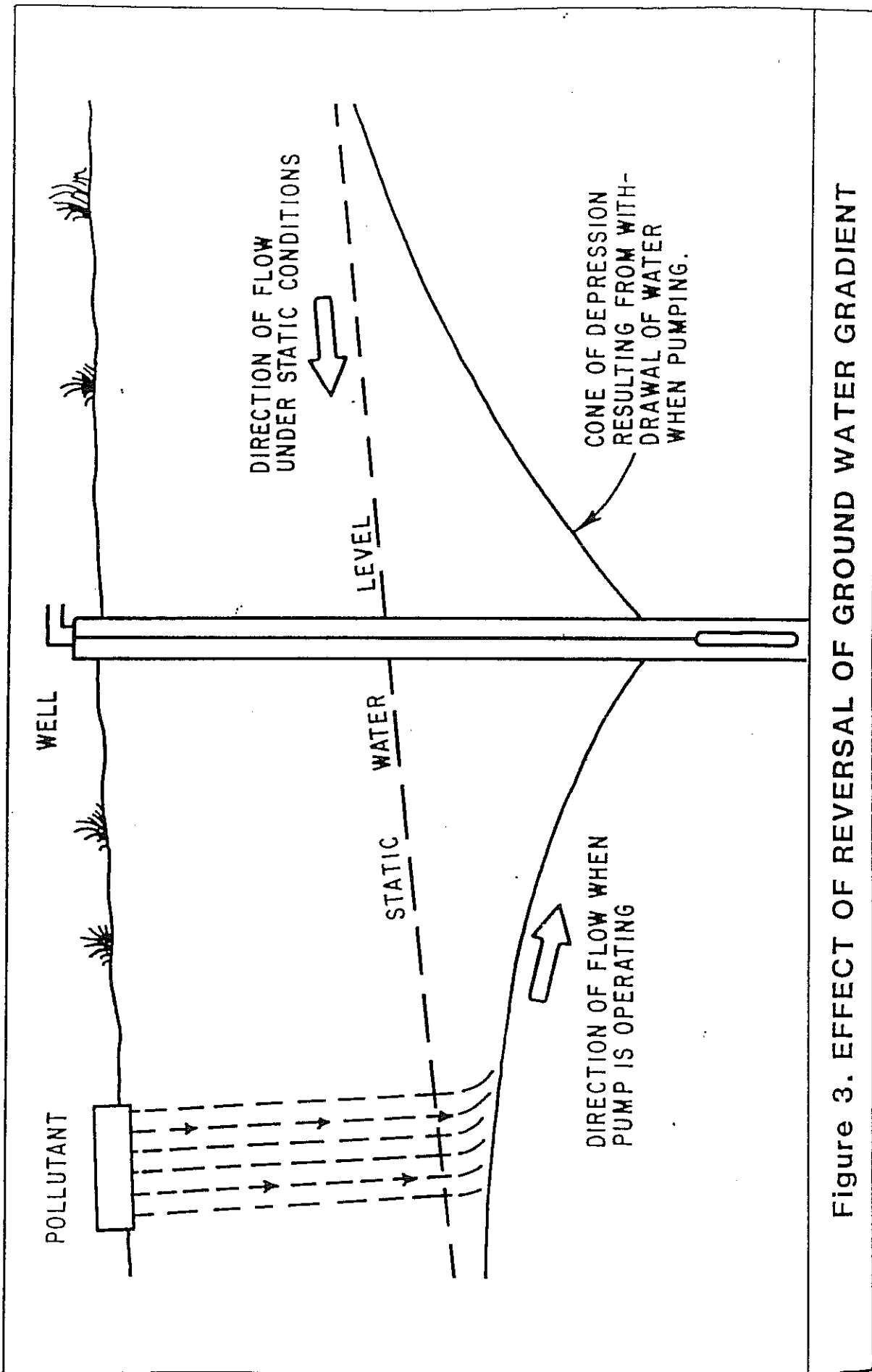


Figure 3. EFFECT OF REVERSAL OF GROUND WATER GRADIENT

"...floodplain of a 100 year flood..." or above "...any recorded high tide, ...", (Section 64417, "Siting Requirements", Title 22 of the California Administrative Code).^{1/}

In addition, the area around the well shall slope away from the well and surface drainage shall be directed away from the well.

D. Where a well is to be near a building, the well shall be far enough from the building so that the well will be accessible for repair, maintenance, etc.

Section 9. Sealing the Upper Annular Space.

The space between the well casing and the wall of the drilled hole (the annular space) shall be effectively sealed to protect it against contamination or pollution by entrance of surface and/or shallow, subsurface waters.^{2/}

A. Minimum depth of seal below ground surface for various uses of wells:

<u>Types</u>	<u>Minimum Depth^{3/} of Seal (below ground surface)</u>
Community Water Supply Wells	50 feet (15 metres)
Individual Domestic Wells	20 feet ^{4/} (6.1 metres)
Industrial Wells	50 feet ^{4/} (15 metres)
Agricultural Wells	20 feet ^{4/5/} (6.1 metres)
Air-Conditioning Wells	20 feet ^{4/} (6.1 metres)
Observation and Monitoring Wells	20 feet ^{6/} (6.1 metres)

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- ^{1/} If compliance with this requirement for community water supply wells is not possible, the enforcing agency should be contacted regarding alternative means for protection.
 - ^{2/} Annular seals are also installed to provide protection for the casing against corrosion, to assure structural integrity of the casing, and to stabilize the upper formation.
 - ^{3/} In those cases where it is not possible to meet or, when necessary, increase, the lateral distances from pollution sources described in Section 8 of these standards, an alternative (or special) means of protection for the well is to increase the depth of the seal.
 - ^{4/} Exceptions are shallow wells where the water to be developed is at a depth less than 20 feet (6 metres). In this instance, the depth of seal may be reduced but in no case less than 10 feet (3 metres) and special precautions taken in locating the well with respect to sources of pollution.
 - ^{5/} The annular space shall be sealed to a depth of 50 feet (15 metres) from the surface when the well is close to sources of pollution listed in Section 8.
 - ^{6/} Because they are constructed to measure specific conditions, the annular space in such wells is usually sealed to make the intake section "depth-discrete". Depending on the circumstances, this depth may be very shallow.

In areas^{1/} where freezing is a potential problem, the top of the seal may be below ground surface but in no case more than 4 feet (1.2 metres) below ground surface.

B. Sealing Conditions.^{2/} Following are requirements to be observed in sealing the annular space:

1. Wells situated in unconsolidated, caving material. An oversized hole, at least 4 inches (100 millimetres) greater in diameter than the production casing, shall be drilled and a conductor casing installed to the depth of seal specified in Part A of this section. The space between the conductor casing and the production casing shall be filled with sealing material. The conductor may be withdrawn as the sealing material is placed (see Figure 4A).

2. Wells situated in unconsolidated material stratified with significant clay layers. If a clay formation is encountered within 5 feet (1.5 metres) of the bottom of the seal described in Part A of this section, the seal should be extended 5 feet (1.5 metres) into the clay formation (thus the depth of seal could be as much as another 10 feet or 3 metres). An oversized hole at least 4 inches (100 millimetres) greater in diameter than the production casing, shall be drilled and the annular space filled with sealing material (see Figure 4B).

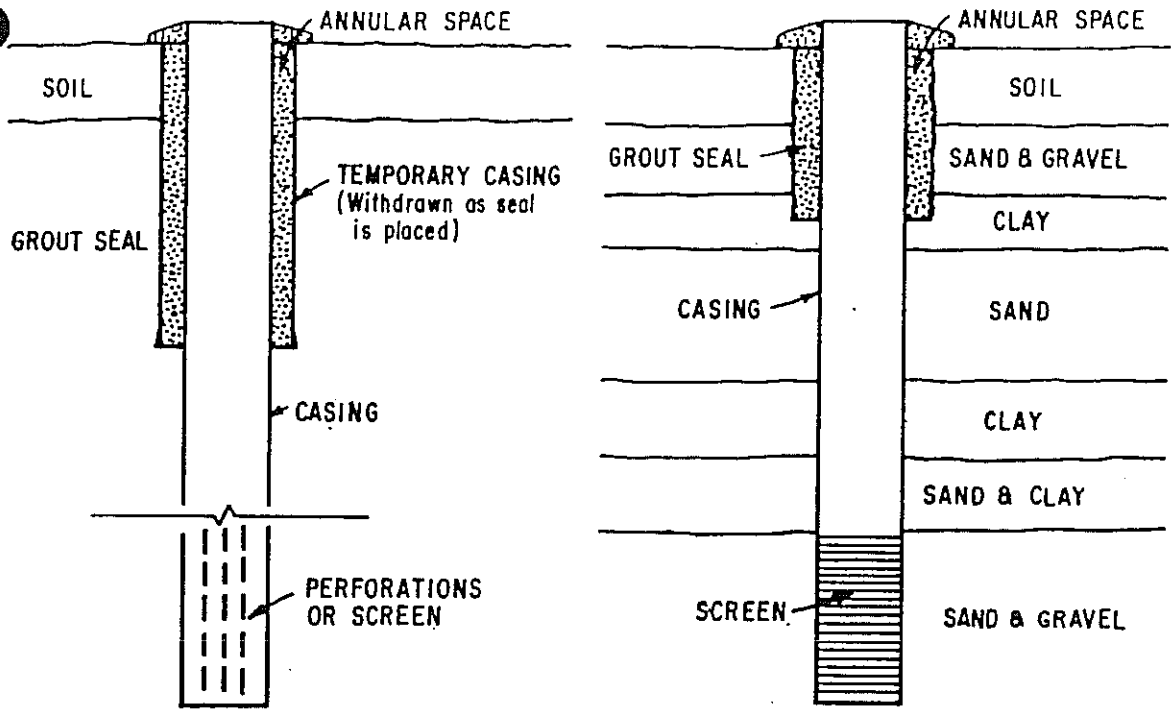
If caving material is present, a conductor casing shall be installed and the annular space sealed as described in 1, above.

3. Wells situated in soft consolidated formations (extensive clays, sandstones, etc.). An oversized hole, at least 4 inches (100 millimetres) greater in diameter than the production casing, shall be drilled to the depth of seal specified in Part A of this section and the space between the production casing and the drilled hole shall be filled with sealing material (see Figure 4C).

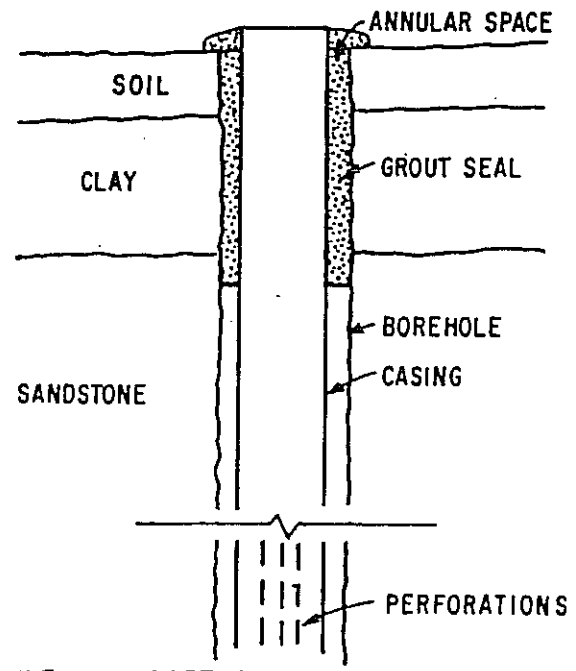
If a conductor casing is to be installed (to establish a foundation for the construction of the remainder of the well) the oversized hole shall be at least 4 inches (100 millimetres) greater in diameter than the conductor

^{1/} Defined here as those areas in which the mean length of freeze-free period as described by the National Weather Service is less than 100 days, i.e., temperatures at or below 32°F (0°C) are likely to occur on any day during a period of 265 or more days each year. In general geographic terms, these areas are the northeastern part of the State (parts of Modoc, Lassen, and Siskiyou Counties), the north Lahontan area (essentially the eastern slopes of the Sierra Nevada and subsidiary valleys north of Mount Whitney and Mono Lake) and at Lake Arrowhead in the San Bernardino Mountains.

^{2/} Methods of sealing are described in Appendix B.



A. WELL DRILLED IN UNCONSOLIDATED UNCAVING MATERIAL B. WELL IN UNCONSOLIDATED STRATIFIED FORMATIONS



C. WELL IN SOFT CONSOLIDATED FORMATIONS

Figure 4. SEALING CONDITIONS FOR UPPER ANNULAR SPACE-UNCONSOLIDATED AND SOFT, CONSOLIDATED FORMATIONS

casing and the annular space between the conductor casing and the drilled hole filled with sealing material to the depth specified in Part A of this section.

4. Wells situated in "hard" consolidated formations (crystalline or metamorphic rock). An oversized hole shall be drilled to the depth specified in Part A of this section and the annular space filled with sealing material. If there is significant overburden, a conductor casing may be installed to retain it. If the material is heavily fractured, the seal should extend into solid material. If the well is to be open-bottomed (lower section uncased), the casing shall be seated in the sealing material (see Figure 5A).

5. Gravel packed wells.

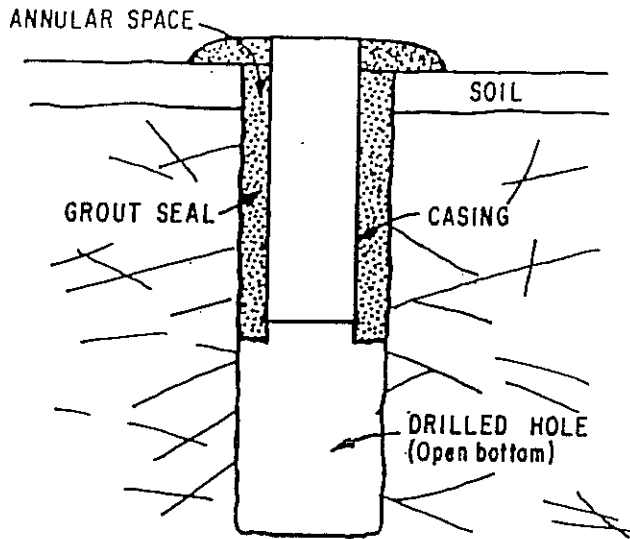
a. With conductor casing. An oversized hole, at least 4 inches (100 millimetres) greater than the diameter of the conductor casing, shall be drilled to the depth specified in Part A of this section and the annular space between the conductor casing and drilled hole filled with sealing material. (In this case the gravel pack may extend to the top of the well but to prevent contamination by surface drainage, a welded cover shall be installed over the top in the space between the conductor casing and the production casing, see Figure 5B).

b. Without conductor casing. An oversized hole at least 4 inches (100 millimetres) greater in diameter than the production casing, shall be drilled to the depth specified in Part A of this section and the annular space between the casing and drilled hole filled with sealing material. If gravel fill pipes are installed through the seal, the annular seal shall be of sufficient thickness to assure that there is a minimum of 2 inches (50 millimetres) between the gravel fill pipe and the wall of the drilled hole. The gravel pack shall terminate at the base of the seal (see Figure 5C). If a temporary conductor casing is used, it shall be removed as the sealing material is placed.

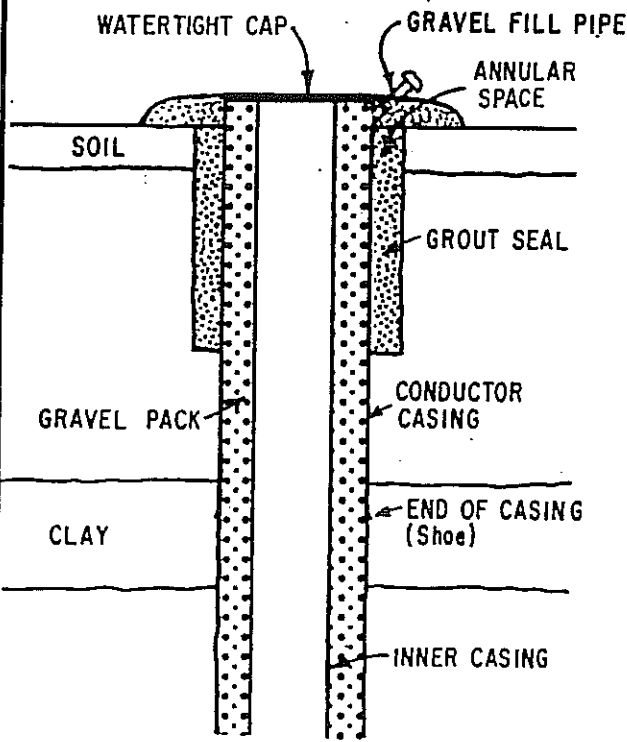
6. For wells situated in circumstances differing from those described above, the sealing conditions shall be as prescribed by the enforcing agency.

7. Converted wells. Wells converted from one use to another, particularly those constructed in prior years without annular seals, shall have annular seals installed to the depth required in Part A of this section and at the thickness described in Part E. Where it is anticipated that a well will be converted to another use, the enforcing agency may require the installation of a seal to the depth specified for community water supply wells.1/

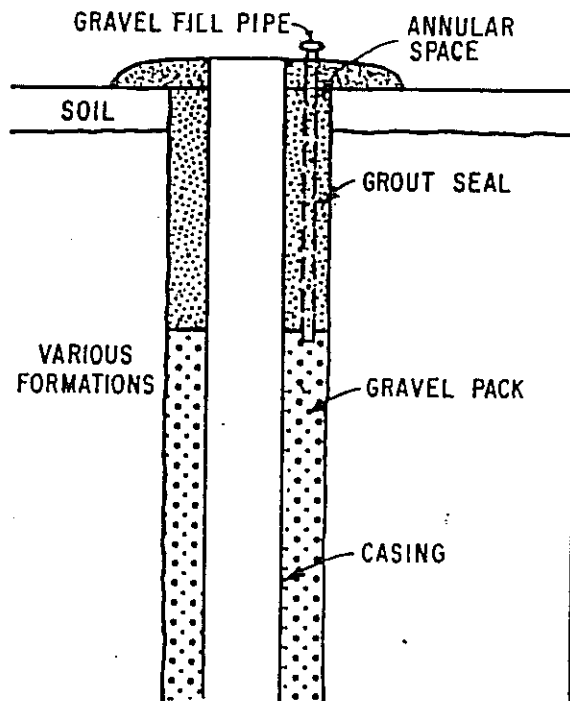
1/ This statement presumes that land use planning has taken place and that zoning requirements are in effect.



A. WELL DRILLED IN ROCK FORMATION



B. WITH CONDUCTOR CASING



C. WITHOUT CONDUCTOR CASING

GRAVEL PACKED WELLS

Figure 5. SEALING CONDITIONS FOR UPPER ANNULAR SPACE-
HARD ROCK FORMATIONS AND GRAVEL PACKED WELLS

C. Conductor Casing. For community water supply wells, the minimum thickness of steel conductor casing shall be 1/4 inch (6 millimetres) for single casing or a minimum of No. 10 U. S. Standard Gage for double casing. Steel used for conductor casing shall conform to the specifications for steel casing described in Section 12.

D. Sealing Material. The sealing material shall consist of neat cement grout, sand-cement grout, bentonite clay, or concrete. Cement used for sealing mixtures shall meet the requirements, including the latest revision thereof, of ASTM 1/ C150 "Standard Specification for Portland Cement" types I (common construction cement) III (high early strength) and V (for high sulfate resistance, i.e., corrosive waters).^{2/} Water used for sealing mixtures shall be clean and of a potable quality. Materials used as additives for Portland cement mixtures in the field shall meet the requirements, and latest revision thereof, of ASTM C494 "Standard Specification for Chemical Admixtures for Concrete".

1. Neat cement grout shall be composed of one sack of Portland cement (94 pounds or 43 kilograms) to 4-1/2 to 6-1/2 (depending on cement type and additives used) gallons (17 to 25 litres) of clean water.

2. Sand-cement grout shall be composed of not more than two parts by weight of sand and one part of Portland cement to 4-1/2 to 6-1/2 (depending on cement type and additives used) gallons (17 to 25 litres) of clean water per sack of cement.

3. Concrete^{3/} used shall be "Class A" (6 sacks of Portland cement per cubic yard or 0.76 cubic metre) or "Class B" (5 sacks per cubic yard or 0.76 cubic metre).^{4/} Aggregates shall meet the requirements, including the latest revision thereof, of ASTM C33 "Standard Specification for Concrete Aggregates".

4. Special quick-setting cement, retardents to setting, and other additives, including hydrated lime to make the mix more fluid (up to 10 percent of the volume of cement), and bentonite (up to 5 percent) to make the mix more fluid and to reduce shrinkage, may be used.

^{1/} American Society for Testing and Materials.

^{2/} Corresponding API (American Petroleum Institute) cement classes are: Type I - API Class A, Type III - API Class C.

^{3/} Concrete is useful in sealing large-diameter wells where the volume of annular seals required is likely to be substantial. However, unless care is exercised during placement, the coarse aggregate may become separated from the cement.

^{4/} A popular concrete mix among drillers consists of 8 sacks of Portland cement per cubic yard (0.76 cubic metre) and uniform aggregate of 3/8 inch (9.5 millimetres) diameter.

5. Bentonite clay^{1/} mixtures shall be composed of bentonite clay and clean water thoroughly mixed before placement so that there are no balls, clods, etc.

6. Used drillers' mud or cuttings or chips from drilling the borehole shall not be used as sealing material.

7. The minimum time that must be allowed for materials containing cement to "set" before construction operations on the well may be resumed shall be:

- a. Type I cement - 72 hours
- b. Type III cement - 48 hours
- c. Type V cement - 6 hours

When necessary these times may be reduced by the use of "accelerators", i.e., additives designed specifically to shorten setting time.

8. Where thermoplastic casing is used, caution should be exercised to control the heat generated during the curing of the cement (called "heat of hydration"). This is of special concern where casing of thinner wall thicknesses are to be installed. The addition of bentonite to the cement mixture (up to 8 percent) or circulating water inside the casing will lower the temperature of the cement. Additives which accelerate the curing process also tend to increase the heat generated and should not be used where thermoplastic casing is installed.

E. Thickness of Seal. The thickness of the seal shall be at least a nominal 2 inches,^{2/} and not less than three times the size of the largest coarse aggregate used in the sealing material.

F. Placement of Seal.

1. Before placing the seal all loose cuttings, drilling mud, or other obstructions shall be removed from the annular space by flushing.

^{1/} Clay in the form of a mud-laden fluid is similar to and has the advantages of neat cement and sand-cement grout. There is a disadvantage in that clay may separate from the fluid. Clay should not be used where structural strength or stability of the seal is required, where flowing or moving water might break it down, or where it might dry out. Although there are other types of clay available, none have the sealing properties (particularly the ability to expand dramatically) comparable to bentonite. Therefore, only bentonite clays are recommended.

^{2/} In other words, the borehole shall be nominally 4 inches (100 millimetres) larger in diameter than the nominal casing diameter (thus creating a 2-inch, or-50 millimetre annular space).

2. Before sealing commences a packer or similar retaining device or a small quantity of sealant may be placed and permitted to set at the bottom of the interval to be sealed to form a foundation for the seal.

3. The sealing material shall be applied, when possible, in one continuous operation from the bottom of the interval to be sealed to the top. Where the seal is to be very deep (i.e., greater than 100 feet or 30 metres) a short segment at least 10 feet (3 metres) in length may be installed first, allowed to "set" or partially "set" and then the remainder of the seal placed in one continuous operation.

4. Gravity installation of sealant without the aid of a tremie or grout pipe shall not be used unless the interval to be sealed is dry and in no case where the interval is over 30 feet (9 metres) in depth.

Section 10. Surface Construction Features.

A. Openings. Openings into the top of the well which are designed to provide access to the well, i.e., for measuring, chlorinating, adding gravel, etc., shall be protected against entrance of surface waters or foreign matter by installation of watertight caps or plugs. Access openings designed to permit the entrance or egress of air or gas (air or casing vents) shall terminate above the ground and above known flood levels and shall be protected against the entrance of foreign material by installation of down-turned and screened "U" bends (see Figures 6 and 7).

All other openings (holes, crevices, cracks, etc.) shall be sealed.

A "sounding tube", ^{1/}taphole with plug, or similar access (see Figure 6) for the introduction of water level measuring devices shall be affixed to the casing of all wells. For wells fitted with a "well cap" the cap shall have a removable plug for this purpose.

1. Where the pump is installed directly over the casing, a watertight seal (gasket) shall be placed between the pump head and the pump base (slab), or a watertight seal (gasket) shall be placed between the pump base and the rim of the casing, or a "well cap" shall be installed to close the annular opening between the casing and the pump column pipe (see Figures 6 and 7).

^{1/} A "sounding tube" or similar access is necessary so that the water level in the well can be periodically determined. Knowledge of the water level, both static and pumping levels, is vital to the maintenance of the well and pump and for determining the efficiency of pump. Such information will lead to few and less costly repairs and reduce operating costs.

During prolonged interruptions (i.e., one week or more), a semipermanent cover shall be installed. For wells cased with steel, a steel cover, tack-welded to the top of the casing, is adequate.

Part III. Destruction of Wells

Section 20. Purpose of Destruction.

A well that is no longer useful^{1/} (including exploration and test holes) must be destroyed in order to:

1. Assure that the ground water supply is protected and preserved for further use.
2. Eliminate the potential physical hazard.

Section 21. Definition of "Abandoned" Well.

A well is considered "abandoned" when it has not been used for a period of one year, unless the owner demonstrates his intention to use the well again for supplying water or other associated purpose^{2/} (such as an observation well or injection well). The well shall then be considered "inactive". As evidence of his intentions for continued use, the owner shall properly maintain the well in such a way that:

1. The well has no defects which will allow the impairment of quality of water in the well or in the water-bearing formations penetrated.
2. The well is covered such that the cover is watertight and cannot be removed except with the aid of equipment or the use of tools.
3. The well is marked so that it can be clearly seen.
4. The area surrounding the well is kept clear of brush or debris.

^{1/} Very often wells are prematurely abandoned and destroyed. However, proper maintenance will ensure that they will continue to produce for many years. The maintenance program should include regular measurement of the water level (depth to water from ground surface), determination of water quality, pump tests (for determination of pump and well efficiency) and cleaning.

^{2/} Although it should be obvious, the reader is reminded that an "abandoned" well should never be used for the disposal of trash, garbage, sewage (except where sewage is reclaimed for recharging the ground water basin, and then only in accordance with the provisions of Section 4458 of the California Health and Safety Code and Section 13540 of the Water Code).

If the pump has been removed for repair or replacement, the well shall not be considered "abandoned". During the repair period, the well shall be adequately covered to prevent injury to people and to prevent the entrance of undesirable water or foreign matter.

Observation or test wells used in the investigation or management of ground water basins by governmental agencies or engineering or research organizations are not considered "abandoned" so long as they are maintained for this purpose. However, such wells shall be covered with an appropriate cap, bearing the label, "Observation Well", and the name of the agency or organization, and preferably shall be locked when measurements are not being made. When these wells are no longer used for this purpose or for supplying water, they shall be considered "abandoned".

Section 22. General Requirement.

All "abandoned" wells and exploration or test holes shall be destroyed. The objective of destruction is to restore as nearly as possible those subsurface conditions which existed before the well was constructed taking into account also changes, if any, which have occurred since the time of construction. (For example, an aquifer which may have produced good quality water at one time but which now produces water of inferior quality, such as a coastal aquifer that has been invaded by seawater.)

Destruction of a well shall consist of the complete filling of the well in accordance with the procedures described in Section 23 (following).

Section 23. Requirements for Destroying Wells.

A. Preliminary Work. Before the well is destroyed, it shall be investigated to determine its condition, details of construction, and whether there are obstructions that will interfere with the process of filling and sealing. This may include the use of downhole television and photography for visual inspection of the well.

1. If there are any obstructions, they shall be removed, if possible, by cleaning out the hole.

2. Where necessary, to ensure that sealing material fills not only the well casing but also any annular space or nearby voids within the zone(s) to be sealed, the casing should be perforated or otherwise punctured.

3. In some wells, it may be necessary or desirable to remove a part of the casing. However, in many instances this can be done only as the well is filled. For dug wells, as much of the lining as possible (or safe) should be removed prior to filling.

B. Filling and Sealing Conditions. Following are requirements to be observed when certain conditions are encountered:

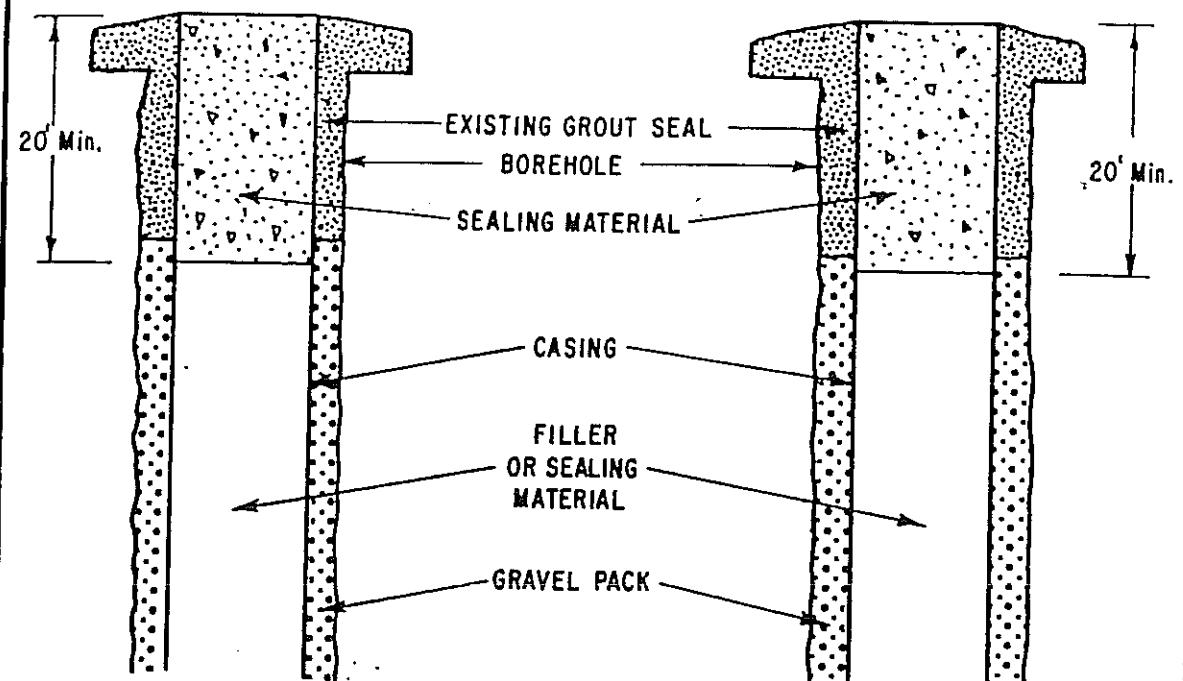
1. Well wholly situated in unconsolidated material in an unconfined ground water zone (Figure 9A). If the ground water supplies are within 50 feet (15 metres) of the surface, the upper 20 feet (6 metres) shall be sealed with impervious material and the remainder of the well shall be filled with clay, sand, or other suitable inorganic material (see item D, this section).

2. Well penetrating several aquifers or formations. In all cases the upper 20 feet (6 metres) of the well shall be sealed with impervious material.

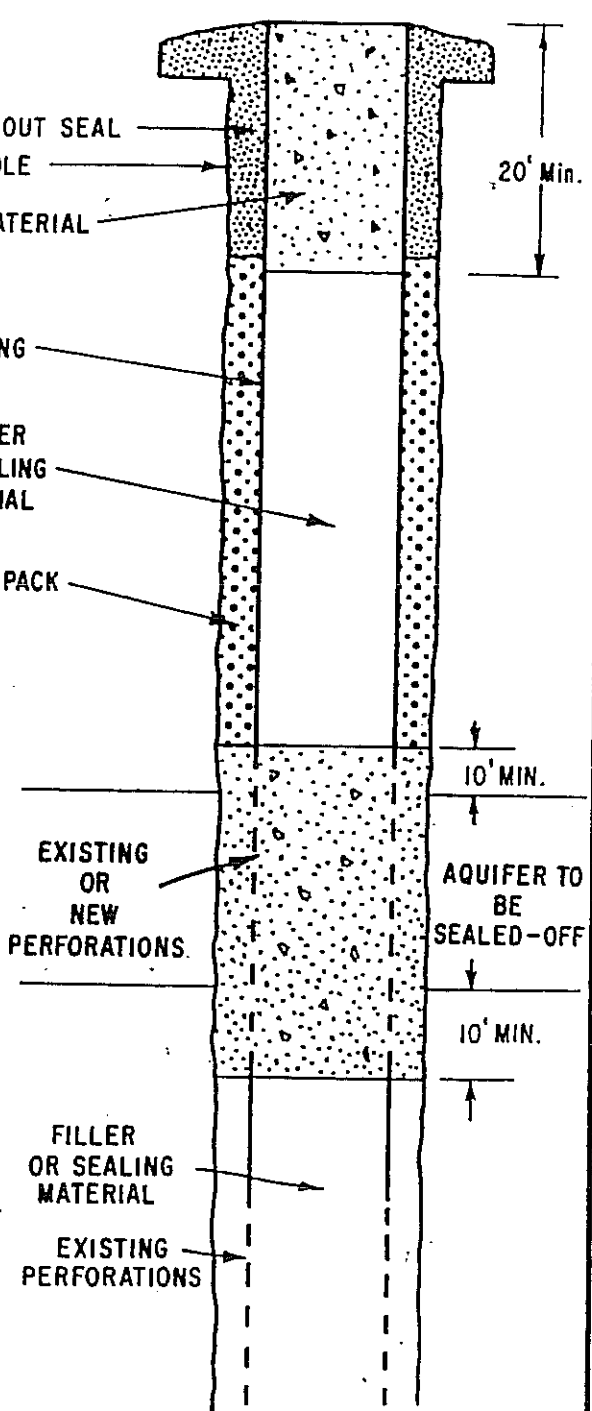
In areas where the interchange of water between aquifers will result in a significant^{1/} deterioration of the quality of water in one or more aquifers, or will result in a loss of artesian pressure, the well shall be filled and sealed so as to prevent such interchange. Sand or other suitable inorganic material may be placed opposite the producing aquifers and other formations where impervious sealing material is not required. To prevent the vertical movement of water from the producing formation, impervious material must be placed opposite confining formations above and below the producing formations for a distance of 10 feet (3 metres) or more. The formation producing the deleterious water shall be sealed by placing impervious material opposite the formation, and opposite the confining formations for a sufficient vertical distance (but no less than 10 feet or 3 metres) in both directions, or in the case of "bottom" waters, in the upward direction. (See Figure 9B.)

In locations where interchange is in no way detrimental, suitable inorganic material may be placed opposite the formations penetrated. When the boundaries of the various formations are unknown, alternate layers of impervious and pervious material shall be placed in the well.

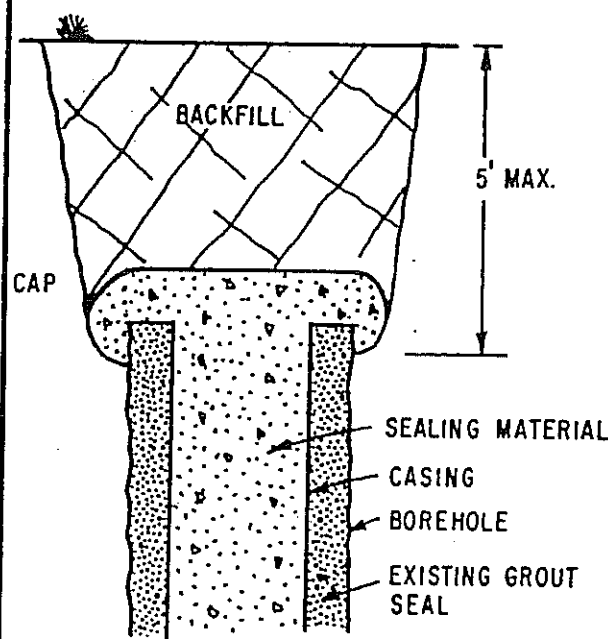
^{1/} Determining the significance of interchange of waters whose qualities vary and of the loss of artesian pressures, requires extensive knowledge of the ground water basin in question. The Department of Water Resources has over the years, and frequently in cooperation with agencies such as the U. S. Geological Survey, undertaken a number of ground water studies and amassed considerable information and data about the subject. Although much is known about the State's ground water supplies, detailed studies sufficiently accurate to define interchange problems have been made only in certain areas. In still other areas, there is only partial definition of the problem. Examples of areas where definition has been made are the coastal plain of Los Angeles County and the eastern part of the Santa Clara Valley in Alameda County. An excellent example of a "bottom" water is the saline connate water underlying the Central Valley at varying depths.



A. SHALLOW WELL IN UNCONSOLIDATED MATERIAL



B. DEEP WELL WITH AQUIFER SEAL



C. UPPER SEALING FEATURES URBAN AREA WELL

Figure 9. PROPERLY DESTROYED WELLS

3. Well penetrating creviced or fractured rock. If creviced or fractured rock formations are encountered just below the surface, the portions of the well opposite this formation shall be sealed with neat cement, sand-cement grout, or concrete. If these formations extend to considerable depth, alternate layers of coarse stone^{1/} and cement grout or concrete may be used to fill the well. Fine grained material shall not be used as fill material for creviced or fractured rock formations.

4. Well in noncreviced, consolidated formation. The upper 20 feet (6.1 metres) of a well in a noncreviced, consolidated formation shall be filled with impervious material. The remainder of the well may be filled with clay or other suitable inorganic material.

5. Well penetrating specific aquifers, local conditions. Under certain local conditions, the enforcing agency may require that specific aquifers or formations be sealed off during destruction of the well.

C. Placement of Material. The following requirements shall be observed in placing fill or sealing material in wells to be destroyed:

1. The well shall be filled with the appropriate material (as described in item D of this section) from the bottom of the well up.

2. Where neat cement grout, sand-cement grout, or concrete is used, it shall be poured in one continuous operation.

3. Sealing material shall be placed in the interval or intervals to be sealed by methods that prevent free fall, dilution, and/or separation of aggregates from cementing materials.

4. Where the head (pressure) producing flow is great, special care and methods must be used to restrict the flow while placing the sealing material. In such cases, the casing must be perforated opposite the area to be sealed and the sealing material forced out under pressure into the surrounding formation.

5. In destroying gravel-packed wells, the casing shall be perforated or otherwise punctured opposite the area to be sealed. The sealing material shall then be placed within the casing, completely filling the portion adjacent to the area to be sealed and then forced out under pressure into the gravel envelope.

6. When pressure is applied to force sealing material into the annular space, the pressure shall be maintained for a length of time sufficient for the cementing mixture to set.

^{1/} The limiting dimensions of coarse stone are usually considered to range between 1/4 and 4 inches (6.3 to 100 millimetres).

7. To assure that the well is filled and there has been no jamming or "bridging" of the material, verification shall be made that the volume of material placed in the well installation at least equals the volume of the empty hole.

D. Materials. Requirements for sealing and fill materials are as follows:

1. Impervious Sealing Materials. No material is completely impervious. However, sealing materials shall have such a low permeability that the volume of water passing through them is of small consequence.

Suitable impervious materials include neat cement, sand-cement grout, concrete, and bentonite clay, all of which are described in Section 9, paragraph D, "Sealing Material" of these standards; and well-proportioned mixes of silts, sands, and clays (or cement), and native soils that have a coefficient of permeability of less than 10 feet (3 metres) per year.^{1/} Used drilling muds are not acceptable.

2. Filler Material. Many materials are suitable for use as a filler in destroying wells. These include clay, silt, sand, gravel, crushed stone, native soils, mixtures of the aforementioned types, and those described in the preceding paragraph. Material containing organic matter shall not be used.

E. Additional Requirements for Wells in Urban Areas.

In incorporated areas or unincorporated areas developed for multiple habitation, to make further use of the well site, the following additional requirements must be met (see Figure 9C):

1. A hole shall be excavated around the well casing to a depth of 5 feet (1.5 metres) below the ground surface and the well casing removed to the bottom of the excavation.

2. The sealing material used for the upper portion of the well shall be allowed to spill over into the excavation to form a cap.

3. After the well has been properly filled, including sufficient time for sealing material in the excavation to set, the excavation shall be filled with native soil.

F. Temporary Cover. During periods when no work is being done on the well, such as overnight or while waiting for sealing material to set, the well and surrounding excavation, if any, shall be covered. The cover shall be sufficiently strong and well enough anchored to prevent the introduction of foreign material into the well and to protect the public from a potentially hazardous situation.

^{1/} Examples of materials of this type are: very fine sand with a large percentage of silt or clay, inorganic silts, mixtures of silt and clay, and clay. Native materials should not be used when the sealing operation involves the use of pressure.

APPENDIX B

SUGGESTED METHODS FOR SEALING
THE ANNULAR SPACE AND FOR SEALING-OFF STRATASealing the Annular Space

The annular space is the space between the well casing and wall of the drilled hole created during construction. This space must be adequately sealed to prevent the entrance of surface drainage or poor quality subsurface water, which may contaminate or pollute the well. This seal will also protect the casing against corrosion and possible structural failure.

A number of acceptable sealing methods are presented in this appendix. Other methods may be suggested by individual well drillers on the basis of their experience and availability of equipment. An acceptable method should provide for the complete filling of the sealing interval with the appropriate sealing material to the specified depth.

General

Prior to sealing, the annular space should be flushed to remove any loose formation material or drilling mud that might obstruct the operation. The use of centralizers -- devices which are affixed to the casing at regular intervals to prevent it from touching the walls of the hole, thereby keeping the casing centered in the borehole -- are recommended. This assures that the seal is not less than the desired minimum thickness. It is particularly significant for large diameter wells where the casing exceeds 10 inches (250 millimetres) in diameter.

The use of a tremie or grout pipe for the introduction of the sealing material into the annular space is preferred. Where a tremie or grout pipe is used, the minimum annular space should be 2 inches (50 millimetres) and the minimum tremie size should be a nominal 1-1/2 inches (38 millimetres) in diameter.

Gravity installation without a grout pipe or tremie should not be attempted when the sealing interval contains water or cannot be visually inspected (with the aid of a mirror or light). Where sealing material is to be introduced under water or the interval cannot be observed from the surface, methods involving "positive" placement (by a tremie or grout pipe, pumping or other application of pressure) must be used.

The sealing material must always be introduced at the bottom of the interval to be sealed. This prevents "bridging" (jamming) or segregation (separation of large aggregate from the mixture in sand-cement or concrete grouts) of the sealing material and eliminates gaps.

Sealing should be accomplished in one continuous operation. Where the sealing interval will exceed 100 feet (30.5 metres) in length, consideration must be given to the collapse strength of the casing. Further, because of the weight of such extensive seals, consideration must also be given to the installation of stronger retaining devices and to staging the placement of the seal (as, for example, the installation of a short segment of rapid-setting sealant in advance of the main body of sealing material; the former becomes a foundation to support the extensive seal).

Sealing Methods

The following methods can be used to seal the upper portion of the annular space. Except for the first, these methods are illustrated on Figure 10. The first method is frequently used where short seals, under 20 feet (6 metres) deep, are placed in dry material.

Gravity Installation (Without Tremie). In this method sealing material is poured into the annular space without the use of a tremie or grout pipe. It cannot be used where the annular space contains water and is limited to intervals less than 30 feet (9 metres) deep. When used, visual observation (with the aid of a mirror or light) should be made during placement of the seal.

Grout Pipe Method. In this method, the seal is placed in the annular space by gravity through a grout pipe (or tremie) suspended in the annular space (see Figure 10).

1. Drill the hole large enough to accommodate the grout pipe (at least 4 inches or 100 millimetres, greater in diameter than the diameter of the casing).
2. In caving formations, install a conductor casing.
3. Provide a packer or grout retainer in the annular space below the interval to be sealed.
4. Extend the grout pipe down the annular space between the casing and the wall or conductor to near the bottom of the interval to be sealed just above the retainer.
5. Add grout in one continuous operation, beginning at the bottom of the interval to be sealed. The bottom end of the grout pipe should remain submerged in the sealing material during the entire time it is being placed. The grout pipe is gradually withdrawn as the sealing material is placed. Where a conductor casing is used to hold back caving material, it may be withdrawn as the sealing material is placed.

Pumping-Exterior Placement. For this method the same procedure as described for the Grout Pipe Method (above) is followed except that the material is placed by pumping instead of by gravity flow. The grout pipe must always be full of sealing material and its bottom end must remain submerged in the sealing material until the interval has been filled.

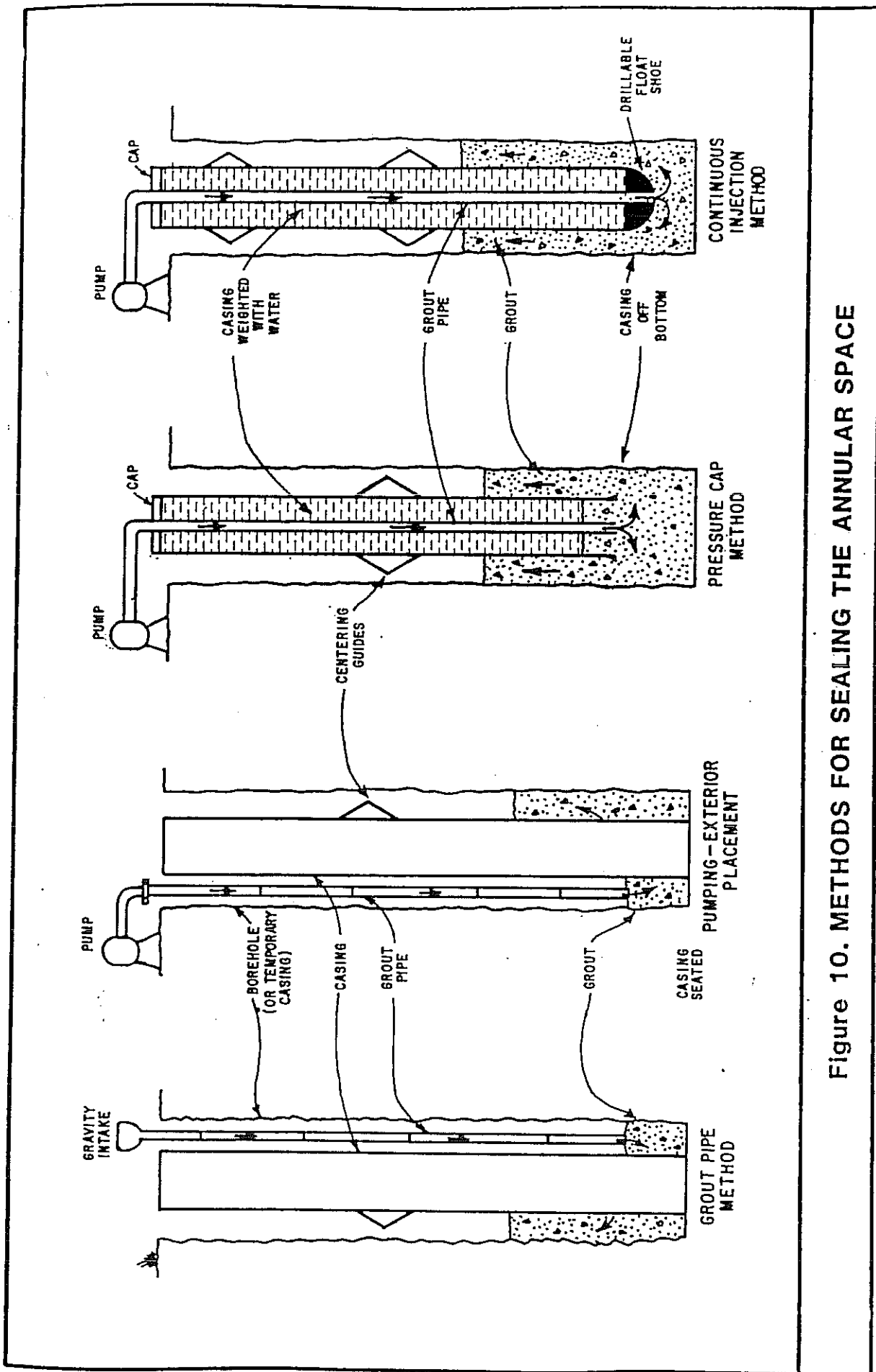


Figure 10. METHODS FOR SEALING THE ANNULAR SPACE

Pressure Cap Method. In the pressure cap method, the grouting is done with the hole drilled about 2 feet (0.6 metre) below the bottom of the conductor casing and the remainder of the well drilled after the grout is in place and set. The grout is placed through a grout pipe set inside the conductor casing.

1. The casing is suspended about 2 feet (0.6 metre) above the bottom of the drilled hole and filled with water.
2. A pressure cap is placed over the conductor casing and grout pipe extended through the cap and casing to the bottom of the hole.
3. The grout is forced through the pipe, up into the annular space around the outside of the conductor casing, to the ground surface.
4. When the grout has set, the pressure cap and the plug formed during grouting are removed and drilling of the rest of the well is continued.

Because there is the possibility that coarse aggregate will "jam" the grout pipe, concrete cannot be used as a sealant when this method is used.

Continuous Injection. This method, called the Normal Displacement Method in the oil industry (which developed it), involves pumping grout through a tube or pipe centered in the casing via a "float shoe" fitted at the bottom of the casing. The grout is forced up into the annular space to the ground surface as is the case with the pressure cap method (above). The tube is detached and flushed. The float shoe, which has a back pressure valve, is drilled out. Because there is the possibility that coarse aggregate will "jam" the grout pipe, concrete cannot be used with this method.

Sealing-off Strata

When the hole for a well is drilled, a strata may be found that produces water of undesirable quality. To prevent the movement of this water into other strata and to maintain the quality of the water to be produced by the well, such strata must be sealed-off. Also, where a highly porous non-water producing strata is encountered, it too must be sealed-off to prevent the loss of water or hydraulic pressure from the well.

The following methods can be used in sealing-off strata or zones (see Figure 11). In addition, several of the methods described for sealing the upper annular space can also be used.

Pressure-Grouting Method. This method can be employed where a substantial annular space exists between the well casing and the wall of the drilled hole.

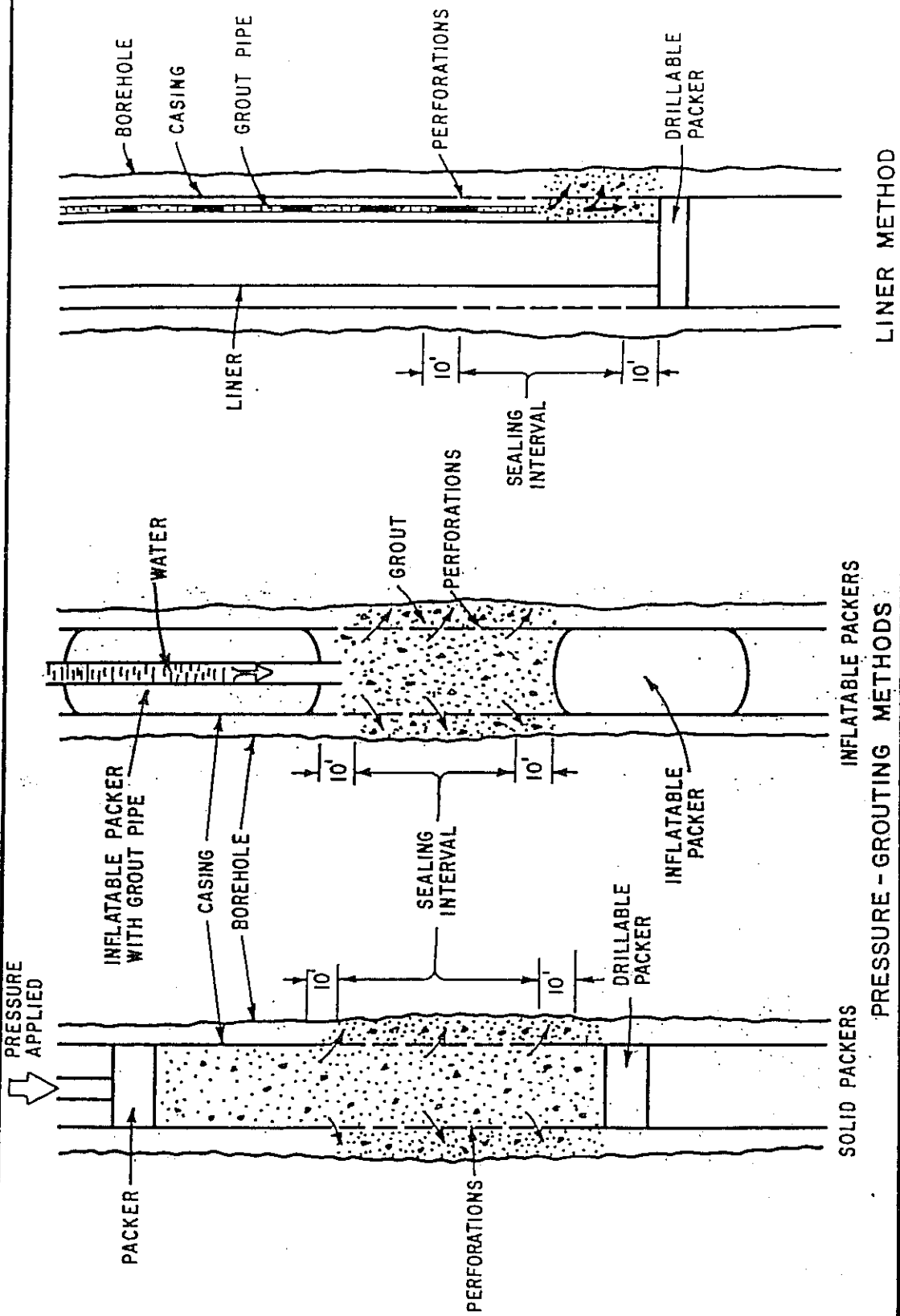


Figure 11. METHODS FOR SEALING-OFF STRATA

1. Perforate the casing opposite the interval to be sealed.
2. Place a packer or other sealing device in the casing below the bottom of the perforated interval.
3. Use a dump bailer or grout pipe to place grout in the casing opposite the interval to be sealed. Sufficient grout shall be placed to fill the annular space and extend out into the strata to be sealed-off.
4. Place a packer or other sealing device in the casing above the perforations.
5. Apply pressure to the top packer to force the grout through the perforations into the interval to be sealed.
6. Maintain pressure until the material has set.
7. Drill out the packers and other material remaining in the well.

Frequently, an assembly consisting of inflatable (balloon) packers and grout pipe is used. The packers are placed to enclose the interval to be sealed, they are inflated and the grout pumped down the hose (which passes through the upper packer) into the interval to be sealed. Water is then pumped into the interval, squeezing the grout through the perforations. When the grout is sufficiently hardened, the packers are deflated and removed.

Liner Method. Where the annular space between the casing and the wall of the drilled hole is minimal, the liner method can be employed.

1. Perforate the casing opposite the interval to be sealed.
2. Place a smaller diameter metal liner, about 2 inches (50 millimetres) less in diameter, inside the casing opposite the perforated interval to be sealed, and extend it at least 10 feet (3 metres) above and below the perforated interval.
3. Provide a grout retaining seal at the bottom of the annular space between the liner and the well casing.
4. Extend the grout pipe into the opening between the liner and casing, and fill the annular space with grout in one continuous operation.
5. The bottom end of the grout pipe should remain submerged in the sealing material during the entire time it is being placed. The grout pipe is gradually withdrawn as the sealing material is placed.

California Well Standards

Water wells • Monitoring wells • Cathodic protection wells

Bulletin 74-90

(Supplement to Bulletin 74-81)

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Part II. Well Construction

Section 8. Well Location With Respect to Pollutants and Contaminants, and Structures.

Note: The title of Section 8 has been revised.

Section 8 (page 26 of Bulletin 74-81) has been revised to read as follows:

- "A. Separation. All water wells shall be located an adequate horizontal distance from known or potential sources of pollution and contamination. Such sources include, but are not limited to:
- sanitary, industrial, and storm sewers;
 - septic tanks and leachfields;
 - sewage and industrial waste ponds;
 - barnyard and stable areas;
 - feedlots;
 - solid waste disposal sites;
 - above and below ground tanks and pipelines for storage and conveyance of petroleum products or other chemicals; and,
 - storage and preparation areas for pesticides, fertilizers, and other chemicals.

Consideration should also be given to adequate separation from sites or areas with known or suspected soil or water pollution or contamination.

The following horizontal separation distances are generally considered adequate where a significant layer of unsaturated, unconsolidated sediment less permeable than sand is encountered between ground surface and ground water. These distances are based on present knowledge and past experience. Local conditions may require greater separation distances to ensure ground water quality protection.

Potential Pollution or Contamination Source	Minimum Horizontal Separation Distance Between Well and Known or Potential Source
Any sewer line (sanitary, industrial, or storm; main or lateral)	50 feet
Watertight septic tank or subsurface sewage leaching field	100 feet
Cesspool or seepage pit	150 feet
Animal or fowl enclosure	100 feet

If the well is a radial collector well, minimum separation distances shall apply to the furthest extended point of the well.

Many variables are involved in determining the "safe" separation distance between a well and a potential source of pollution or contamination. No set separation distance is adequate and reasonable for all conditions. Determination of the safe separation distance for individual wells requires detailed evaluation of existing and future site conditions.

Where, in the opinion of the enforcing agency adverse conditions exist, the above separation distances shall be increased, or special means of protection, particularly in the construction of the well, shall be provided, such as increasing the length of the annular seal.

Lesser distances than those listed above may be acceptable where physical conditions preclude compliance with the specified minimum separation distances and where special means of protection are provided. Lesser separation distances must be approved by the enforcing agency on a case-by-case basis.

- B. Gradients. Where possible, a well shall be located up the ground water gradient from potential sources of pollution or contamination. Locating wells up gradient from pollutant and contaminant sources can provide an extra measure of protection for a well. However, consideration should be given that the gradient near a well can be reversed by pumping, as shown in Figure 3 (page 28 of Bulletin 74-81), or by other influences.
- C. Flooding and Drainage. If possible, a well should be located outside areas of flooding. The top of the well casing shall terminate above grade and above known levels of flooding caused by drainage or runoff from surrounding land. For community water supply wells, this level is defined as the:

"...floodplain of a 100 year flood..." or above "...any recorded high tide...",
(Section 64417, *Siting Requirements*, Title 22 of the California Code of Regulations.)

If compliance with the casing height requirement for community water supply wells and other water wells is not practical, the enforcing agency shall require alternate means of protection.

Surface drainage from areas near the well shall be directed away from the well. If necessary, the area around the well shall be built up so that drainage moves away from the well.

- D. Accessibility. All wells shall be located an adequate distance from buildings and other structures to allow access for well modification, maintenance, repair, and destruction, unless otherwise approved by the enforcing agency."

Section 9. Sealing the Upper Annular Space.

Note: Sealing requirements are also described in Appendix B, page 67 of Bulletin 74-81.

Section 9 (page 29 of Bulletin 74-81) has been revised to read as follows:

"The space between the well casing and the wall of the drilled hole, often referred to as the annular space, shall be effectively sealed to prevent it from being a preferential pathway for movement of poor-quality water, pollutants, or contaminants. In some cases, secondary purposes of an annular seal are to protect casing against corrosion or degradation, ensure the structural integrity of the casing, and stabilize the borehole wall.

- A. Minimum Depth of Annular Surface Seal. The annular surface seal for various types of water wells shall extend from ground surface to the following minimum depths:

Well Type	Minimum Depth Seal Must Extend Below Ground Surface
Community Water Supply	50 feet
Industrial	50 feet
Individual Domestic	20 feet
Agricultural	20 feet
Air-Conditioning	20 feet
All Other Types	20 feet

1. Shallow ground water. Exceptions to minimum seal depths can be made for shallow wells at the approval of the enforcing agency, where the water to be produced is at a depth less than 20 feet. In no case shall an annular seal extend to a total depth less than 10 feet below land surface. The annular seal shall be no less than 10 feet in length.

Caution shall be given to locating a well with a 'reduced' annular seal with respect to sources of pollution or contamination. Such precautions include horizontal separation distances greater than those listed in Section 8, page 12, above.

2. Encroachment on known or potential sources of pollution or contamination. When, at the approval of the enforcing agency, a water well is to be located closer to a source of pollution or contamination than allowed by Section 8, page 12, above, the annular space shall be sealed from ground surface to the first impervious stratum, if possible. The annular seal for all such wells shall extend to a minimum depth of 50 feet.
3. Areas of freezing. The top of an annular surface seal may be below ground surface in areas where freezing is likely, but in no case more than 4 feet below ground surface. 'Freezing' areas are those where the mean length of the freeze-free period described by the National Weather Service is less than 100 days. In other words, 'freezing' areas are where temperatures at or below 32 degrees Fahrenheit are likely to occur on any day during a period of 265 or more days each year. In general, these areas include:
 - portions of Modoc, Lassen, and Siskiyou Counties;
 - portions of the North Lahontan area including the eastern slope of the Sierra Nevada and related valleys north of Mount Whitney and Mono Lake; and,
 - the area of Lake Arrowhead in the San Bernardino Mountains.
4. Vaults. At the approval of the enforcing agency, the top of an annular surface seal and well casing can be below ground surface where traffic or other conditions require, if the seal and casing extend to a watertight and structurally sound subsurface vault, or equivalent feature. In no case shall the top of the annular surface seal be more

than 4 feet below ground surface. The vault shall extend from the top of the annular seal to at least ground surface.

The use of subsurface vaults to house the top of water wells below ground surface is rare and is discouraged due to susceptibility to the entrance of surface water, pollutants, and contaminants. Where appropriate, pitless adapters should be used in place of vaults.

B. Sealing Conditions. The following requirements are to be observed for sealing the annular space.

1. Wells drilled in unconsolidated, caving material. An 'oversized' hole, at least 4 inches greater in diameter than the outside diameter of the well casing, shall be drilled and a conductor casing temporarily installed to at least the minimum depth of annular seal specified in Subsection A, page 14, above. Permanent conductor casing may be used if it is installed in accordance with Item 3, page 16, below, and Item 5 (page 32 of Bulletin 74-81) and if it extends at least to the depth specified in Subsection A, above. One purpose of conductor casing is to hold the annular space open during well drilling and during the placement of the well casing and annular seal.

Temporary conductor casing shall be withdrawn as sealing material is placed between the well casing and borehole wall, as shown in Figure 4A (page 31 of Bulletin 74-81). Sealing material shall be placed at least within the interval specified in Subsection A, above. The sealing material shall be kept at a sufficient height above the bottom of the temporary conductor casing as it is withdrawn to prevent caving of the borehole wall.

Temporary conductor casing may be left in place in the borehole after the placement of the annular seal only if it is impossible to remove because of unforeseen conditions and not because of inadequate drilling equipment, or if its removal will seriously jeopardize the integrity of the well and the integrity of subsurface barriers to pollutant or contaminant movement. Temporary conductor casing may be left in place only at the approval of the enforcing agency on a case-by-case basis.

Every effort shall be made to place sealing material between the outside of temporary conductor casing that cannot be removed and the borehole wall to fill any possible gaps or voids between the conductor casing and the borehole wall. At least two inches of sealing material shall be maintained between the conductor casing and well casing. At a minimum, sealing material shall extend through intervals specified in Subsection A, above.

Sealing material can often be placed between temporary conductor casing that cannot be removed and the borehole wall by means of pressure grouting techniques, as described below and in Appendix B (page 67 of Bulletin 74-81). Other means of placing sealing material between the conductor casing and the borehole wall can be used, at the approval of the enforcing agency.

Pressure grouting shall be accomplished by perforating temporary conductor casing that cannot be removed, in place. The perforations are to provide passages for sealing material to pass through the conductor casing to fill any spaces and voids between the casing and borehole wall. Casing perforations shall be a suitable size and density to allow the passage of sealing materials through the casing and the proper distribution

of sealing material in spaces between the casing and borehole wall. At a minimum, the perforations shall extend through the intervals specified in Subsection A, above, unless otherwise approved by the enforcing agency.

Temporary conductor casing that must be left in place shall be perforated immediately before sealing operations begin to prevent drilling or well construction operations from clogging casing perforations. Once the casing has been adequately perforated, sealing material shall be placed inside the conductor casing and subjected to sufficient pressure to cause the sealing material to pass through the conductor casing perforations and completely fill any spaces or voids between the casing and borehole wall, at least within the intervals specified in Subsection A, above. Sealing material shall consist of neat cement, or bentonite prepared from powdered bentonite and water, unless otherwise approved by the enforcing agency.

Sealing material must also fill the annular space between the conductor casing and the well casing within required sealing intervals.

2. Wells drilled in unconsolidated material with significant clay layers. An 'oversized' hole, at least 4 inches greater in diameter than the outside diameter of the well casing, shall be drilled to at least the depth specified in Subsection A, page 14, above, and the annular space between the borehole wall and the well casing filled with sealing material in accordance with Subsection A, above (see Figure 4B, page 31 of Bulletin 74-81). If a significant layer of clay or clay-rich deposits of low permeability is encountered within 5 feet of the minimum seal depth prescribed in Subsection A, above, the annular seal shall be extended at least 5 feet into the clay layer. Thus, the depth of seal could be required to be extended as much as another 10 feet. If the clay layer is less than 5 feet in total thickness, the seal shall extend through its entire thickness.

If caving material is present within the interval specified in Subsection A, a temporary conductor casing shall be installed to hold the borehole open during well drilling and placement of the casing and annular seal, in accordance with the requirements of Item 1, page 15, above. Permanent conductor casing may be used if it is installed in accordance with Item 3, below and Item 5 (page 32 of Bulletin 74-81) and it extends to at least the depth specified in Subsection A, above.

3. Wells drilled in soft consolidated formations (extensive clays, sandstones, etc.). An 'oversized' hole, at least 4 inches greater in diameter than the outside diameter of the well casing, shall be drilled to at least the depth specified in Subsection A, page 14, above. The space between the well casing and the borehole shall be filled with sealing material to at least the depth specified in Subsection A, above, as shown by Figure 4C (page 31 of Bulletin 74-81).

If a permanent conductor casing is to be installed to facilitate the construction of the well, an oversized hole, at least 4 inches greater in diameter than the outside surface of the permanent conductor casing, shall be drilled to the bottom of the conductor casing or to at least the depth specified in Subsection A, above, and the annular space between the conductor casing and the borehole wall filled with sealing material. In some cases, such as in cable tool drilling, it may be necessary to extend permanent conductor casing beyond the depth of the required depth of the annular surface seal in order to maintain the borehole. Sealing material is not required between conductor

casing and the borehole wall other than the depths specified in Subsection A, above, and Section 13, below (page 46 of Bulletin 74-81)."

Items 4 through 7 (page 32 of Bulletin 74-81) are unchanged. Item 8 has been added, as follows:

- "8. Wells that penetrate zones containing poor-quality water, pollutants, or contaminants. If geologic units or fill known or suspected to contain poor-quality water, pollutants, or contaminants are penetrated during drilling, and, the possibility exists that poor-quality water, pollutants, or contaminants could move through the borehole during drilling and well construction operations and significantly degrade ground water quality in other units before sealing material can be installed, then precautions shall be taken to seal off or 'isolate' zones containing poor-quality water, pollutants, and contaminants during drilling and well construction operations. Special precautions could include the use of temporary or permanent conductor casing, borehole liners, and specialized drilling equipment. The use of conductor casing is described in Item 1, page 15, above."

Subsection C (page 34 of Bulletin 74-81) is unchanged. Subsections D, E, and F (page 34 of Bulletin 74-81) have been changed to read as follows:

- "D. Sealing Material. Sealing material shall consist of neat cement, sand cement, concrete, or bentonite. Cuttings from drilling, or drilling mud, shall not be used for any part of the sealing material.
1. Water. Water used to prepare sealing mixtures should generally be of drinking water quality, shall be compatible with the type of sealing material used, be free of petroleum and petroleum products, and be free of suspended matter. In some cases water considered nonpotable, with a maximum of 2,000 milligrams per liter chloride and 1,500 mg/l sulfate, can be used for cement-based sealing mixtures. The quality of water to be used for sealing mixtures shall be determined where unknown.
 2. Cement. Cement used in sealing mixtures shall meet the requirements of American Society for Testing and Materials C150, *Standard Specification for Portland Cement*, including the latest revisions thereof.

Types of Portland cement available under ASTM C150 for general construction are:

- Type I - General purpose. Similar to American Petroleum Institute Class A.
- Type II - Moderate resistance to sulfate. Lower heat of hydration than Type I. Similar to API Class B.
- Type III - High early strength. Reduced curing time but higher heat of hydration than Type I. Similar to API Class C.
- Type IV - Extended setting time. Lower heat of hydration than Types I and III.
- Type V - High sulfate resistance.

Special cement setting accelerators and retardants and other additives may be used in some cases. Special field additives for Portland cement mixtures shall meet the requirements of ASTM C494, *Standard Specification for Chemical Admixtures for Concrete*, and latest revision thereof.

Hydrated lime may be added up to 10 percent of the volume of cement used to make the seal mix more fluid. Bentonite may be added to cement-based mixes, up to 6 percent by weight of cement used, to improve fluid characteristics of the sealing mix and reduce the rate of heat generation during setting.

Dry additives should be mixed with dry cement before adding water to the mixture to ensure proper mixing, uniformity of hydration, and an effective and homogeneous seal. The water demand of additives shall be taken into account when water is added to the mix.

Minimum times required for sealing materials containing Portland cement to set and begin curing before construction operations on a well can be resumed are:

- Types I and II cement - 24 hours
- Type III cement - 12 hours
- Type V cement - 6 hours

Type IV cement is seldom used for annular seals because of its extended setting time.

Allowable setting times may be reduced or lengthened by use of accelerators or retardants specifically designed to modify setting time, at the approval of the enforcing agency.

More time shall be required for cement-based seals to cure to allow greater strength when construction or development operations following the placement of the seal may subject casing and sealing materials to significant stress. Subjecting a well to significant stress before a cement-based sealing material has adequately cured can damage the seal and prevent proper bonding of cement-based sealants to casing(s).

If plastic well casing is used, care shall be exercised to control the heat of hydration generated during the setting and curing of cement in an annular seal. Heat can cause plastic casing to weaken and collapse. Heat generation is a special concern if thin-wall plastic well casing is used, if the well casing will be subject to significant net external pressure before the setting of the seal, and/or if the radial thickness of the annular seal is large. Additives that accelerate cement setting also tend to increase the rate of heat generation during setting and, thus, should be used with caution where plastic casing is employed.

The temperature of a setting cement seal can be lowered by circulating water inside the well casing and/or by adding bentonite to the cement mixture, up to 6 percent by weight of cement used.

Cement-based sealing material shall be constituted as follows:

- a. Neat Cement. For Types I or II Portland cement, neat cement shall be mixed at a ratio of one 94-pound sack of Portland cement to 5 to 6 gallons of 'clean' water. Additional water may be required where special additives, such as bentonite, or 'accelerators' or 'retardants' are used.
- b. Sand Cement. Sand-cement shall be mixed at a ratio of not more than 188 pounds of sand to one 94-pound sack of Portland cement (2 parts sand to 1 part cement, by weight) and about 7 gallons of clean water, where Type I or Type II Portland cement is used. This is equivalent to a '10.3 sack mix.' Less

water shall be used if less sand than 2 parts sand per one part cement by weight is used. Additional water may be required when special additives, such as bentonite, or 'accelerators' or 'retardants' are used.

- c. Concrete. Concrete is often useful for large volume annular seals, such as in large-diameter wells. The proper use of aggregate can decrease the permeability of the annular seal, reduce shrinkage, and reduce the heat of hydration generated by the seal.

Concrete shall consist of Portland cement and aggregate mixed at a ratio of at least six-94 pound sacks of Portland cement per cubic yard of aggregate. A popular concrete mix consists of eight-94 pound sacks of Type I or Type II Portland cement per cubic yard of uniform 3/8-inch aggregate.

In no case shall the size of the aggregate be more than 1/5 the radial thickness of the annular seal. Water shall be added to concrete mixes to attain proper consistency for placement, setting, and curing.

- d. Mixing. Cement-based sealing materials shall be mixed thoroughly to provide uniformity and ensure that no 'lumps' exist.

Ratios of the components of cement-based sealing materials can be varied depending on the type of cement and additives used. Variations must be approved by the enforcing agency.

3. Bentonite. Bentonite clay in 'gel' form has some of the advantages of cement-based sealing material. A disadvantage is that the clay can sometimes separate from the clay-water mixture.

Although many types of clay mixtures are available, none has sealing properties comparable to bentonite clay. Bentonite expands significantly in volume when hydrated. Only bentonite clay is an acceptable clay for annular seals.

Unamended bentonite clay seals should not be used where structural strength of the seal is required, or where it will dry. Bentonite seals may have a tendency to dry, shrink and crack in arid and semi-arid areas of California where subsurface moisture levels can be low. Bentonite clay seals can be adversely affected by subsurface chemical conditions, as can cement-based materials.

Bentonite clay shall not be used as a sealing material if roots from trees and other deep rooted plants might invade and disrupt the seal, and/or damage the well casing. Roots may grow in an interval containing a bentonite seal depending on surrounding soil conditions and vegetation.

Bentonite-based sealing material shall not be used for sealing intervals of fractured rock or sealing intervals of highly unstable, unconsolidated material that could collapse and displace the sealing material, unless otherwise approved by the enforcing agency. Bentonite clay shall not be used as a sealing material where flowing water might erode it.

Bentonite clay products used for sealing material must be specifically prepared for such use. Used drilling mud and/or cuttings from drilling shall not be used in sealing material.

Bentonite used for annular seals shall be commercially prepared, powdered, granulated, pelletized, or chipped/crushed sodium montmorillonite clay. The largest dimension of pellets or chips shall be less than 1/5 the radial thickness of the annular space into which they are placed.

Bentonite clay mixtures shall be thoroughly mixed with clean water *prior to placement*. A sufficient amount of water shall be added to bentonite to allow proper hydration. Depending on the bentonite sealing mixture used, 1 gallon of water should be added to about every 2 pounds of bentonite. Water added to bentonite for hydration shall be of suitable quality and free of pollutants and contaminants.

Bentonite preparations normally require 1/2 to 1 hour to adequately hydrate. Actual hydration time is a function of site conditions and the form of bentonite used. Finely divided forms of bentonite generally require less time for hydration, if properly mixed.

Dry bentonite pellets or chips may be placed directly into the annular space below water, where a short section of annular space, up to 10 feet in length, is to be sealed. Care shall be taken to prevent bridging during the placement of bentonite seal material.

- E. Radial Thickness of Seal. A minimum of two inches of sealing material shall be maintained between all casings and the borehole wall, within the interval to be sealed, except where temporary conductor casing cannot be removed, as noted in Subsection B, page 15, above. A minimum of two inches of sealing material shall also be maintained between each casing, such as permanent conductor casing, well casing, gravel fill pipes, etc., in a borehole within the interval to be sealed, unless otherwise approved by the enforcing agency. Additional space shall be provided, where needed, for casings to be properly centralized and spaced and allow the use of a tremie pipe during well construction (if required), especially for deeper wells.

F. Placement of Seal.

1. Obstructions. All loose cuttings, or other obstructions to sealing shall be removed from the annular space before placement of the annular seal.
2. Centralizers. Well casing shall be equipped with centering guides or 'centralizers' to ensure the 2-inch minimum radial thickness of the annular seal is at least maintained. Centralizers need not be used in cases where the well casing is centered in the borehole during well construction by use of removable tools, such as hollow-stem augers.

The spacing of centralizers is normally dictated by the casing materials used, the orientation and straightness of the borehole, and the method used to install the casing.

Centralizers shall be metal, plastic, or other non-degradable material. Wood shall not be used as a centralizer material. Centralizers must be positioned to allow the proper placement of sealing material around casing within the interval to be sealed.

Any metallic component of a centralizer used with metallic casing shall consist of the same material as the casing. Metallic centralizer components shall meet the same metallurgical specifications and standards as the metallic casing to reduce the potential for galvanic corrosion of the casing.

3. Foundation and Transition Seals. A packer or similar retaining device, or a small quantity of sealant that is allowed to set, can be placed at the bottom of the interval to be sealed before final sealing operations begin to form a foundation for the seal.

A transition seal, up to 5 feet in length, consisting of bentonite, is sometimes placed in the annular space to separate filter pack and cement-based sealing materials. The transition seal can prevent cement-based sealing materials from infiltrating the filter pack. A short interval of fine-grained sand, usually less than 2 feet in length, is sometimes placed between the filter pack and the bentonite transition seal to prevent bentonite from entering the filter pack. Also, fine sand is sometimes used in place of bentonite as the transition seal material.

Fine-sized forms of bentonite, such as granules and powder, are usually employed for transition seals if a transition seal is to be placed above the water level in a well boring. Coarse forms of bentonite, such as pellets and chips, are often used where a bentonite transition seal is to be placed below the water level.

Transition seals should be installed by use of a tremie pipe, or equivalent. However, some forms of bentonite may tend to bridge or clog in a tremie pipe.

Bentonite can be placed in dry form or as slurry for use in transition seals. Water should be added to the bentonite transition seal prior to the placement of cement-based sealing materials where bentonite is dry in the borehole. Care should be exercised during the addition of water to the borehole to prevent displacing the bentonite.

Water should be added to bentonite at a ratio of about 1 gallon for every 2 pounds of bentonite to allow for proper hydration. Water added to bentonite for hydration shall be of suitable quality and free of pollutants and contaminants.

Sufficient time should be allowed for bentonite transition seals to properly hydrate before cement-based sealing materials are placed. Normally, 1/2 to 1 hour is required for proper hydration to occur. Actual time of hydration is a function of site conditions.

The top of the transition seal shall be sounded to ensure that no bridging has occurred during placement.

4. Timing and Method of Placement. The annular space shall be sealed as soon as practical after completion of drilling or a stage of drilling. In no case shall the annular space be left unsealed longer than 14 days following the installation of casing.

Sealing material shall be placed in one continuous operation from the bottom of the interval to be sealed, to the top of the interval. Where the seal is more than 100 feet in length, the deepest portion of the seal may be installed first and allowed to set or partially set. The deep initial seal shall be no longer than 10 feet in length. The remainder of the seal shall be placed above the initial segment in one continuous operation.

Sealing material shall be placed by methods (such as the use of a tremie pipe or equivalent) that prevent freefall, bridging, or dilution of the sealing material, or separation of sand or aggregate from the sealing material. Annular sealing materials

shall not be installed by freefall unless the interval to be sealed is dry and no deeper than 30 feet below ground surface.

5. Ground Water Flow. Special care shall be used to restrict the flow of ground water into a well boring while placing material, where subsurface pressure causing the flow of water is significant.
6. Verification. It shall be verified that the volume of sealing material placed at least equals or exceeds the volume to be sealed.
7. Pressure. Pressure required for placement of sealing materials shall be maintained long enough for cement-based sealing materials to properly set."

Section 10. Surface Construction Features.

Subsection A, Item 5; Subsection B; and Subsection F (page 39 of Bulletin 74-81) have been changed. The remainder of Section 10 (page 36 of Bulletin 74-81) is unchanged.

"A. Openings.

5. Bases. A concrete base or pad, sometimes called a pump block or pump pedestal, shall be constructed at ground surface around the top of the well casing and contact the annular seal, unless the top of the casing is below ground surface, as provided by Subsection B, page 23, below.

The base shall be free of cracks, voids, or other significant defects likely to prevent water tightness. Contacts between the base and the annular seal, and the base and the well casing, must be water tight and must not cause the failure of the annular seal or well casing. Where cement-based annular sealing material is used, the concrete base shall be poured before the annular seal has set, unless otherwise approved by the enforcing agency.

The upper surface of the base shall slope away from the well casing. The base shall extend at least two feet laterally in all directions from the outside of the well boring, unless otherwise approved by the enforcing agency. The base shall be a minimum of 4 inches thick.

A minimum base thickness of 4 inches is normally acceptable for small diameter, single-user domestic wells. The base thickness should be increased for larger wells. Shape and design requirements for well pump bases vary with the size, weight, and type of pumping equipment to be installed, engineering properties of the soil on which the base is to be placed, and local environmental conditions. A large variety of base designs have been used. The Vertical Turbine Pump Association has developed a standard base design for large lineshaft turbine pumps. This design consists of a square, concrete pump base whose design is dependent on bearing weight and site soil characteristics.

Where freezing conditions require the use of a pitless adapter, and the well casing and annular seal do not extend above ground surface or into a pit or vault, a concrete base or pad shall be constructed as a permanent location monument for the covered well. The base shall be 3 feet in length on each side and 4 inches in thickness, unless

Part III. Destruction of Wells

Section 21. Definition of "Abandoned" Well.

Section 21 (page 52 of Bulletin 74-81) has been revised as follows:

"A well is considered 'abandoned' or permanently inactive if it has not been used for one year, unless the owner demonstrates intention to use the well again. In accordance with Section 24400 of the California Health and Safety Code, the well owner shall properly maintain an inactive well as evidence of intention for future use in such a way that the following requirements are met:

- "(1) The well shall not allow impairment of the quality of water within the well and ground water encountered by the well.
- (2) The top of the well or well casing shall be provided with a cover, that is secured by a lock or by other means to prevent its removal without the use of equipment or tools, to prevent unauthorized access, to prevent a safety hazard to humans and animals, and to prevent illegal disposal of wastes in the well. The cover shall be watertight where the top of the well casing or other surface openings to the well are below ground level, such as in a vault or below known levels of flooding. The cover shall be watertight if the well is inactive for more than five consecutive years. A pump motor, angle drive, or other surface feature of a well, when in compliance with the above provisions, shall suffice as a cover.
- (3) The well shall be marked so as to be easily visible and located, and labeled so as to be easily identified as a well.
- (4) The area surrounding the well shall be kept clear of brush, debris, and waste materials."

If a pump has been temporarily removed for repair or replacement, the well shall not be considered 'abandoned' if the above conditions are met. The well shall be adequately covered to prevent injury to people and animals and to prevent the entrance of foreign material, surface water, pollutants, or contaminants into the well during the pump repair period."

Section 23. Requirements for Destroying Wells.

Subsection A, Item 1 (page 53 of Bulletin 74-81) and Subsection B, Item 1, (page 54, of Bulletin 74-81) have been changed. The remainder of Section 23 is unchanged.

Subsection A, Item 1 has been revised as follows:

- "1. Obstructions. The well shall be cleaned, as needed, so that all undesirable materials, including obstructions to filling and sealing, debris, oil from oil-lubricated pumps, or pollutants and contaminants that could interfere with well destruction are removed for disposal.

The enforcing agency shall be notified as soon as possible if pollutants and contaminants are known or suspected to be in a well to be destroyed. Well destruction operations may then proceed only at the approval of the enforcing agency.

The enforcing agency should be contacted to determine requirements for proper disposal of materials removed from a well to be destroyed."

Subsection B, Item 1 has been revised as follows:

- "1. Wells situated in unconsolidated material in an unconfined ground water zone. In all cases the upper 20 feet of the well shall be sealed with suitable sealing material and the remainder of the well shall be filled with suitable fill, or sealing material. (See Figure 9A, page 55 of Bulletin 74-81.)"

Appendix G

Emergency Response Plan

Carpinteria Valley Water District Water System Emergency Response Plan



Prepared by:
Carpinteria Valley Water District

January 4, 2005

Name:
Copy Number:

Contents

Acronyms and Abbreviations	iv
1.0 Introduction.....	1-1
1.1 Purpose	1-1
1.2 Goals.....	1-1
1.3 Requirement.....	1-1
1.4 Access Control.....	1-2
1.5 Plan Overview.....	1-2
2.0 Emergency Planning Process Information	2-1
2.1 General Information	2-1
2.1.1 Planning Partnerships	2-1
2.1.2 Mutual Aid Agreements.....	2-2
2.1.3 Relationship Between ERP and Other Plans.....	2-2
2.2 Disaster Events or Scenarios	2-3
2.2.1 Natural Disasters	2-3
2.2.2 Events Caused by Human Intervention (Man-made Threats)	2-4
3.0 Water System Information.....	3-1
3.1 System Specific Information	3-1
3.2 General System Map/Service Area Map	3-2
3.3 Critical System Components.....	3-2
3.4 Identification of Alternate Water Sources.....	3-3
3.4.1 Alternate Raw Water Sources	3-3
3.4.2 Interconnects and Agreements with Other Utilities	3-3
3.4.3 Water Sources for Short-term Outages	3-4
3.5 Emergency Water Supply calculations.....	3-4
3.5.1 Amount of Water Needed for Various Durations.....	3-4
3.5.2 Estimated Emergency Supply of Water.....	3-4
3.6 Emergency Equipment and Supplies	3-5
3.6.1 Facility Emergency Equipment List	3-5
3.6.2 Personnel Protective and Other Emergency Equipment.....	3-8
3.6.3 Telephone Equipment	3-5
3.6.4 VHF Radio Communications	3-8
3.6.5 Citizen's Band Radio / Military Radios	3-9
3.7 Property Protection	3-9
4.0 SEMS/ICS Integration and Organization	4-1
4.1 Five Levels of SEMS	4-1
4.2 Five Principle Functions of SEMS	4-1
4.3 CVWD Incident Command Structure.....	4-3
4.4 Emergency Operations Center.....	4-6
4.4.1 EOC Description	4-6
4.4.2 EOC Activation	4-6
5.0 Concept of Operations.....	5-1
5.1 Decision Process.....	5-1

5.1.1	Threat Warning	5-1
5.1.2	ERP Activation	5-2
5.2	Response Capability Identified in the Water System VA	5-3
5.3	Personnel Safety	5-3
5.3.1	Facility Protective Actions	5-4
5.3.2	Personnel Accountability	5-5
5.3.3	Off-site Protective Actions	5-5
5.3.4	First Aid and Emergency Medical Treatment.....	5-5
5.4	Protective Action Protocols	5-6
5.4.1	Sheltering-in-Place Protocol	5-6
5.4.2	Evacuation Procedures.....	5-6
5.4.3	Evacuee Assembly Areas.....	5-7
5.4.4	Shelter Locations	5-7
6.0	Communication Procedures	6-1
6.1	CVWD Chain of Command	6-1
6.2	Drinking Water Field Operation Branch – Chain of Command	6-3
6.3	Notification Procedures	6-5
6.3.1	Initial Notifications	6-5
6.3.2	Internal Contact List	6-5
6.3.3	External Contact List	6-5
6.3.4	Additional Information on State of California Agencies	6-5
6.3.5	Critical Customers Contact List.....	6-6
6.3.6	Contact Information for Fire-fighting Water Alternate Sources ..	6-6
6.3.7	Contact Information for Bulk and Bottled Water Suppliers	6-6
6.4	Public Notice Procedures	6-7
6.4.1	Media Notification.....	6-7
6.4.2	Public Notification	6-7
6.5	Cancellation of Public Notification	6-9
7.0	Water Quality Sampling	7-1
7.1	Laboratory Resources.....	7-1
7.2	CDHS Laboratory	7-1
7.3	California Mutual Aid Laboratory Network	7-2
7.4	Chemical Analysis Classification.....	7-2
7.5	Biological Analysis Classification.....	7-2
7.6	Natural Disaster	7-3
7.7	Terrorist Event/Contamination Event	7-3
7.7.1	Emergency Water Quality Sampling Kit	7-3
7.7.2	Sample Collection	7-3
7.7.3	Laboratory.....	7-4
7.7.4	Sample Transport.....	7-4
7.7.5	Sample Analysis	7-4
7.8	CVWD Water Sampling and Monitoring Procedures.....	7-4
8.0	Emergency Response, Recovery, and Termination.....	8-1
8.1	Response Phase	8-1
8.1.1	Initial Response	8-1
8.1.2	Damage Assessment.....	8-1
8.2	Recovery phase	8-2

8.2.1	Recovery Planning	8-2
8.2.2	Recovery Activities	8-3
8.3	Termination and review phase.....	8-4
9.0	Emergency Plan Approval, Update, Training, and Exercises.....	9-1
9.1	Plan Review and Approval	9-1
9.1.1	CVWD Approval Authority	9-1
9.1.2	Local Government Approval	9-1
9.2	Practice and Update Schedule	9-1
9.2.1	Schedule and Responsibility for Training and Exercises	9-1
9.2.2	Schedule for ERP Review and Update.....	9-1
9.3	Assessment of ERP Effectiveness	9-2
9.4	Training, Exercises, and Drills	9-2
10.0	References and Links.....	10-1
	Public Health Information Report Form Instructions	8

Appendices

- A Action Plans
- B System and Facility Information
- C Emergency Phone Lists
- D Public Notices and Press Releases
- E California Statewide Emergency Notification Plan
- F Incident Reports and Forms
- G ERP Certification Form

Acronyms and Abbreviations

AP	action plan
ASDWA	Association of State Drinking Water Administrators
ATSDR	Agency for Toxic Substances and Disease Registry
AWWA	American Water Works Association
BSL	biosafety lab
BWO	Boil Water Order
CAMAL Net	California Mutual Aid Laboratory Network
CDC	Center for Disease Control
CDHS	California Department of Health Services
CST	Civilian Support Team
DHS	Department of Homeland Security
DWP	Drinking Water Program
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
EWQSK	Emergency Water Quality Sampling Kit
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
GM	General Manager
gpm	gallons per minute
HAZMAT	hazardous materials
HHS	Health and Human Services
ICS	Incident Command System
LD	Laboratory Director
LEPC	Local Emergency Planning Committees
LRN	Laboratory Response Network
MDL	Microbial Disease Laboratory

MSDS	Material Safety Data Sheet
MWDSC	Metropolitan Water District of Southern California
NRWA	National Rural Water Association
OES	Office of Emergency Services
OSHA	Occupational Safety and Health Administration
PIO	Public Information Officer
PWS	Public Water System
RMP	Risk Management Plan
SCADA	Supervisory Control and Data Acquisition
SD	Security Director
SEMS	Standardized Emergency Management System
SRLB	Sanitation and Radiation Laboratories Branch
UWA	Unsafe Water Alert
VA	vulnerability assessment
WMD	Weapons of Mass Destruction
WTP	water treatment plant
WUERM	Water Utility Emergency Response Manager
WUOCM	Water Utility Emergency Operations Center Manager

1.0 Introduction

This section presents the purpose, goals, requirements, access control, and plan overview of the Emergency Response Plan (ERP) for CVWD. Note that the ERP Activation process is described in Section 5.0.

1.1 Purpose

The purpose of this ERP is to provide CVWD with a standardized response and recovery protocol to prevent, minimize, and mitigate injury and damage resulting from emergencies or disasters of man-made or natural origin.

The ERP also describes how CVWD will respond to potential threats or actual terrorist scenarios identified in the vulnerability assessment (VA), as well as additional emergency response situations. Included in this ERP are specific action plans (APs) that will be used to respond to events and incidents.

1.2 Goals

The goals of this ERP are to:

- Rapidly restore water service after an emergency.
- Ensure adequate water supply for fire suppression.
- Minimize water system damage.
- Minimize impact and loss to customers.
- Minimize negative impacts on public health and employee safety.
- Provide emergency public information concerning customer service.

1.3 Requirement

This ERP has been designed to comply with Section 1433(b) of the Safe Drinking Water Act (SDWA) as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV – Drinking Water Security and Safety), California Government Code Section 8607.2 – Public Water System Plans, California Health and Safety Code, Sections 116460, 116555 and 116750, and California Waterworks Standards, Section 64560.

CVWD has provided the required certification to the United States Environmental Protection Agency (USEPA) that this emergency response plan incorporates the results of the VA completed for the system and includes plans, procedures, and identification of equipment that can be implemented or used in the event of a terrorist attack on the water system. CVWD has also provided a copy of the ERP to the local California Department of Health Services (CDHS) Drinking Water Field Operations Branch District Office.

Whenever the ERP is changed or updated, a revised copy, or the specific revised documents, will be sent to the CDHS District Office.

Guidance from the following documents is incorporated in this ERP:

- “California Emergency Response Plan Guidance” (CDHS, Version 1.0, December 2003).
- “Guidance for Water Utility Response, Recovery & Remediation Actions For Man-Made And / Or Technological Emergencies” (USEPA 810-R-02-001).
- “Large Water System Emergency Response Plan Outline: Guidance to Assist Community Water Systems in Complying with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002” (USEPA 810-F-03-007, July 2003).
- “Response Protocol Toolbox: Planning for and Responding to Drinking Water Contamination Threats and Incidents” (USEPA-817-D-03-001 to 007, Interim Final – December 2003).
- “Small and Medium Water System Emergency Response Plan Guidance to Assist Community Water Systems in Complying with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002.”
- “Emergency Planning Guidance Public and Private Water Utilities.” March 1999. California Office of Emergency Services (OES) and California Utilities Emergency Association.

1.4 Access Control

Because of the sensitive nature of the information contained in this ERP, an access control protocol has been established under the direction of the CVWD Security Director (SD).

CVWD
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SD
SD

1.5 Plan Overview

This ERP is organized into eight sections and appendices, as described below:

- Section 1.0: **Introduction:** Describes the purpose, goals, regulatory requirements, access control protocol, and overall organization of the ERP.
- Section 2.0: **Emergency Planning Process Information:** Describes CVWD’s emergency planning partnerships, mutual aid agreements, emergency response policies, procedures and documents, and summarizes the scenarios from the VA that are addressed in the ERP.

- Section 3.0: **Water System Information:** Provides specific information about CVWD’s water system, identifies emergency resources, and identifies alternate and backup water sources.
- Section 4.0: **SEMS/ICS Integration and Organization:** Presents emergency response chain-of-command and information and describes how CVWD will use the Standardized Emergency Management System/ Incident Command System (SEMS/ICS) system to manage emergencies.
- Section 5.0: **Concept of Operations:** Describes CVWD’s polices, procedures, and plans to mitigate emergency incidents, including how threats may be received into the utility, ERP activation, response capabilities, personnel safety provisions, and protective action protocols.
- Section 6.0: **Communications Procedures:** Describes CVWD’s chain of command and provides notification procedures and contact lists for internal and external contacts, including public notice procedures.
- Section 7.0: **Water Quality Sampling:** Includes information and procedures regarding water quality sampling procedures and equipment. Also provides information on available laboratory resources in California.
- Section 8.0: **Emergency Response, Recovery, and Termination:** Describes the three phases of an emergency: response, recovery, and termination. General actions and guidance is provided for each phase, and these procedures should be used in conjunction with the specific action plans in Appendix A.
- Section 9.0: **Emergency Response Plan Approval, Update, Training, and Exercises:** Describes the emergency response training program and the ERP review, approval, and update processes.
- Section 10.0: **References and Links**
Appendices:
 - A. Action Plans
 - B. System and Facility Information
 - C. Emergency Phone Lists
 - D. Public Notices and Press Releases
 - E. CA Statewide Emergency Notification Plan
 - F. Incident Reports and Forms
 - G. ERP Certification Form

2.0 Emergency Planning Process Information

This section presents the CVWD planning partnerships and discusses the relationship between this ERP and other CVWD related plans.

2.1 General Information

2.1.1 Planning Partnerships

CVWD has established emergency planning partnerships with other parties who have agreed to help the utility in an emergency situation. A list of these agencies and a brief description of their emergency capabilities is provided below.

Agency	Capability
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

Agency	Capability
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

In the event of an attack on the water system, some or all of these agencies, as well as other state and federal agencies, may be called upon for assistance. A complete list of emergency response agencies with their telephone contact numbers is provided in Section 6.3.3.

2.1.2 Mutual Aid Agreements

In addition to the partnerships outlined above, CVWD has established mutual aid agreements with the following organizations:

Organization	Nature of Agreement
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

2.1.3 Relationship Between ERP and Other Plans

This ERP is intended to assist CVWD's managers and staff in responding to emergencies and malevolent acts (i.e., attacks) that affect the water system. The ERP is supplemented and referenced by the plans, procedures, policies and agreements shown in the table below

Document	Relationship to ERP
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

Document	Relationship to ERP
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

2.2 Disaster Events or Scenarios

Specific APs have been developed to address each of the high-risk threat scenarios identified in CVWD's vulnerability assessment. APs are tailored ERP actions that address specific major events. For security reasons, the procedures outlined in these documents are intentionally general in nature, omitting confidential details and effected assets. The specific APs are attached in the appendices following this main ERP document.

2.2.1 Natural Disasters

CVWD has considered the threats posed by natural events and weather-related phenomena. Specific AP(s) have been developed to guide a timely and prudent response should such threats be realized. These detailed APs are found in the attached appendices. Considered natural disasters include:

Natural Disaster	Primary AP No.	Secondary AP No.
[REDACTED]	■	
[REDACTED]	■	
[REDACTED]	■	
[REDACTED]	■	
[REDACTED]	■	

2.2.2 Events Caused by Human Intervention (Man-made Threats)

CVWD has developed specific AP documents, found in the appendices, to respond to the following threats that were identified in the vulnerability analysis:

Event / Threat	Primary AP No.	Secondary AP No.
[REDACTED]	■	■
[REDACTED]	■	■
[REDACTED]	■	■
[REDACTED]	■	
[REDACTED]	■	■
[REDACTED]	■	■
[REDACTED]	■	
[REDACTED]	■	
[REDACTED]	■	■

3.0 Water System Information

This section presents the core elements of the CVWD ERP, including the system-specific information, roles and responsibilities in an emergency, communication procedures, personnel safety, identification of alternate water sources, emergency and chemical supplies, and property protection.

3.1 System Specific Information

This section contains the CVWD Public Water System (PWS) identification and emergency contacts, as well as basic information to describe the water system.

System Identification Number	4210001	
System Name and Address	Carpinteria Valley Water District 1301 Santa Ynez Ave Carpinteria, CA 93013	
Directions to District Office	Located at the corner of Santa Ynez Avenue and Via Real Ave.	
Number of Service Connections/Population Served¹	4,000 service connections	18, 500 population ¹
Type of Source	[REDACTED]	[REDACTED]
Interconnections and Purchased Water Agreements	[REDACTED]	[REDACTED]
Type of Treatment Provided	[REDACTED]	
Number of Storage Tanks	[REDACTED]	[REDACTED]
Average Water Demand	[REDACTED]	
Maximum and Peak Water Demand	[REDACTED]	[REDACTED]
Emergency Contact Person(s)	Charles Hamilton General Manager	[REDACTED]
	Bob Mc Donald District Engineer	[REDACTED]

3.2 General System Map/Service Area Map

The following maps and drawings of the CVWD's system are provided below (or in Appendix B) for reference.

3.2.1.1 Distribution System Map

See Appendix B

3.2.1.2 Pressure Boundary Map

See Appendix B

3.2.1.3 Site Plans and Facility "As-Built" Engineering Drawings

[Redacted]

3.2.1.4 Operating Procedures and System Descriptions including Backup Systems

[Redacted]

[Redacted]

3.2.1.5 SCADA System/Process Control Systems Operations

A top level schematic of the SCADA system has been included in this document and is provided for reference, as follows:

Scada diagram here

[Redacted]

3.3 Critical System Components

Included below is an outline of system components deemed critical to operation of CVWD. Information on the location of the asset is included, as well as descriptive information such as entry restrictions or special equipment or tool needs.

Asset	Location	Description
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]

Asset	Location	Description
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]

3.4 Identification of Alternate Water Sources

3.4.1 Alternate Raw Water Sources

CVWD [Redacted]

[Redacted]

Each of these raw water services can supplement the water supply if the other sources are compromised.

3.4.2 Interconnects and Agreements with Other Utilities

[Redacted]

CVWD CVWD

CVWD CVWD

3.4.3 Water Sources for Short-term Outages

Possible alternate water supply options for short-term outages include:

Short-term water supply options

[REDACTED]

Additional water supply equipment is available from:

Emergency water supply equipment sources

[REDACTED]

3.5 Emergency Water Supply calculations

3.5.1 Amount of Water Needed for Various Durations

Typical residential water usage in the United States is on the order of 300 to 500 gallons per residence per day, or 100 to 150 gallons per capita per day. Although these amounts can typically be significantly reduced during crisis situations, CVWD has found it useful to develop an estimate for the quantity of supplemental water required for a number of potential outage scenarios. These estimates are as follows:

Outage Period	Number of Customers (Service Connections) Affected	Quantity Needed
1 hour	[REDACTED]	[REDACTED]
12 hours	[REDACTED]	[REDACTED]
1 day	[REDACTED]	[REDACTED]
2 days	[REDACTED]	[REDACTED]
1 week	[REDACTED]	[REDACTED]

3.5.2 Estimated Emergency Supply of Water

CVWD has estimated the amount of water storage available in the system under an emergency situation according to the following formula:

Emergency supply of water = (amount of storage + backup/emergency supply) / (system demand)

Calculations for CVWD:

[REDACTED]

3.6 Emergency Equipment and Supplies

The equipment and chemical supplies that are arranged to respond to incidents are described in this section. In addition, the individual APs have specific equipment requirements.

3.6.1 Facility Emergency Equipment List

CVWD has identified additional sources of operational equipment and repair parts in excess of normal usage that can be used in the event of an emergency situation. The decision regarding what type and quantity of additional equipment to have available is based on the results of the specific scenarios and critical assets identified in CVWD's vulnerability assessment.

A list of equipment sources, including vendors, chemical suppliers, service contractors, and the equipment, materials and services that they provide is provided below. CVWD also has a mutual aid agreement with several neighboring utilities and local businesses (see Section 2.1.2).

Equipment/Supply Description	Location	Specific Function & Capability	Responsible Person/Title	Telephone Number	Inventory/Restocking Frequency
Heavy Equipment:					
Dump Trucks	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Skip Loaders	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Backhoes	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Dozers	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Water trucks	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Equipment/Supply Description	Location	Specific Function & Capability	Responsible Person/Title	Telephone Number	Inventory/Restocking Frequency
	[REDACTED]		[REDACTED]	[REDACTED]	
Communication Equipment:					
Portable Radios	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Radio Batteries	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Cell Phone Rentals					
General Equipment:					
Air Compressors	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Fans and Blowers	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Generators	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Shop Vacuums	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Pumps	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Personnel Protective					

Equipment/Supply Description	Location	Specific Function & Capability	Responsible Person/Title	Telephone Number	Inventory/Restocking Frequency
Equipment:					
SCBA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Tyeks	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Boots	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Respirators	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Cartridges	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Gloves	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Bulk Supplies:					
Sand	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Absorbents	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

3.6.2 Personnel Protective and Other Emergency Equipment

CVWD has established written procedures for using and maintaining emergency response equipment. These procedures apply to any emergency equipment relevant to a response involving a toxic chemical, including all detection and monitoring equipment, alarms and communications systems, and personnel protective equipment not used as part of normal operations. Summary procedures are listed below:

- How and when to use the equipment properly.
- How and when the equipment should receive routine maintenance.
- How and when the equipment should be inspected and tested for readiness.
- Training requirements.

3.6.3 Telephone Equipment

Standard land-based telephones are potentially useful for communication during an emergency. CVWD

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

3.6.4 VHF Radio Communications

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

3.6.4.1 VHF Communications Channel

Channel	Use Group / Frequency
[REDACTED]	[REDACTED]

3.6.4.2 Trunked Radios (Mobile)

Serial Number	Storage Location	EOC Designation
[REDACTED]	[REDACTED]	[REDACTED]

Serial Number	Storage Location	EOC Designation
[REDACTED]	[REDACTED]	[REDACTED]

3.6.5 Citizen's Band Radio / Military Radios

It may be necessary to request assistance from CB radio operators or the military, if other systems are not available.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

CVWD is aware that CB and most readily-available military radios do not provide secure communication.

3.7 Property Protection

In the event of a real or potential malevolent event, the Water Utility Emergency Response Manager (WUERM) will make the determination as to what water system facilities should be immediately "locked down," including the implementation of specific access control procedures and the establishment of a security perimeter. The possibility of secondary malevolent events will be considered, given that the initial act may be diversionary.

CVWD personnel involved in an emergency response will take all necessary measures to protect potential evidence for law enforcement, should the event be declared a crime scene.

Specific lockdown procedures for each of CVWD's major facilities are:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



4.0 SEMS/ICS Integration and Organization

The Standardized Emergency Management System is the system required by Government Code §8607(a) for managing response to multi-agency and multi-jurisdiction emergencies in California.

4.1 Five Levels of SEMS

There are five designated levels in the SEMS organization, as shown below. When resources become depleted or are not available at the field or local level, requests for resources are moved up through these levels until they are filled.

The type and severity of the incident determines the extent of activation for each level.

Field Response: The Field Response Level is where the Incident Command System is applied. At this level, emergency response personnel and resources are managed under ICS to carry out tactical decisions and activities in direct response to an incident or threat.

Local Government: Local Government includes *City of Carpinteria, Santa Barbara County, Carpinteria School District, and Carpinteria Sanitary District, Carpinteria Summerland Fire District, Carpinteria Cemetery District, and Carpinteria Valley Water District.*

Operational Area: The Operational Area concept represents the intermediate level of the state's emergency organization, consisting of *county and all political subdivisions, including water districts and other special districts, within the county area.*

Regional: Because of its size and geography, the state of California has been divided into six mutual aid regions by the Governor's OES. In SEMS, the regional level manages and coordinates information and resources among operational areas within the mutual aid region and also between the operational areas and the state level.

State: The state level manages and coordinates state resources in response to the emergency needs of the other levels. This level manages and coordinates mutual aid among the mutual aid regions and between the regional and state levels. The state level also serves as the coordination and communication link between the state and federal disaster response system.

4.2 Five Principle Functions of SEMS

There are five principle functions within SEMS at each of the five organizational levels. They are Management ("Command" at the Field Level), Operations, Planning/Intelligence, Logistics, and Finance/Administration. These functions are modular in their design and can expand or contract depending on the needs of the incident.

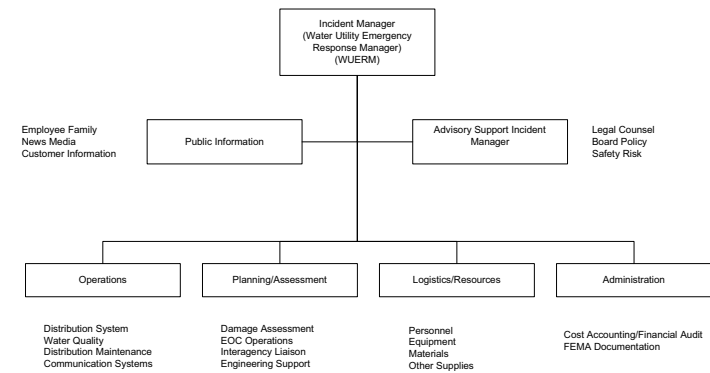
A summary of the functions and the responsibilities of each section, as they relate to CVWD's Operations during an emergency, is provided in the table below.

Function	Responsibilities
Management	<ul style="list-style-type: none"> Serves as Command Staff and/or Incident Commander at the Field Level. Directs Water System Emergency Operations Center (EOC). May Serve as WUERM.
Operations	<ul style="list-style-type: none"> Responsible for management of all operations directly applicable to the primary mission. Operations Section Chief activates and supervises organizational elements in accordance with incident AP and directs execution of the AP. Coordinates emergency response activities at the water utility EOC level. Implements priorities established by management or Incident Command. Field Coordinators <ul style="list-style-type: none"> Operations staff who are linked to water utility personnel at other fixed facilities or who are assigned to incidents within the water utility. Receive and pass information up the chain of command. Receive and coordinate requests for services and support.
Planning/Intelligence	<ul style="list-style-type: none"> Oversees the collection, evaluation, verification, and display of current information related to the emergency. <ul style="list-style-type: none"> Understand current situation. Predict probable course of the incident events. Prepare alternative strategies and control operations for the incident. Responsible for preparing action plans and maintaining documentation related to the emergency.
Logistics	<ul style="list-style-type: none"> Provides facilities, services, and material in support of the Incident. Oversees the acquisition, storing, and distribution of essential resources and support services needed to manage the emergency. Tracks the status of resources. Provides services to all field units in terms of obtaining and meeting their personnel, materials and equipment needs including communications.
Finance/Administration	<ul style="list-style-type: none"> Responsible for all financial, administrative and cost analysis aspects of the incident. Prepares vendor contracts, maintains records of expenditures for personnel and equipment, and maintains records and processes claims. Provides preliminary estimates of damage costs and losses.

4.3 CVWD Incident Command Structure

The following graphics illustrate the expanding nature of the ICS and show model ICS structures that can be used during an emergency. The intent is for the command structure to be expanded and contracted as necessary to provide the best fit for a particular situation. This template includes three different command structures for different-sized utilities, and for different levels of emergencies. Choose the template or templates that work best for your utility and edit them as necessary. Individual's names can be added to the graphics to designate specific roles and responsibilities.

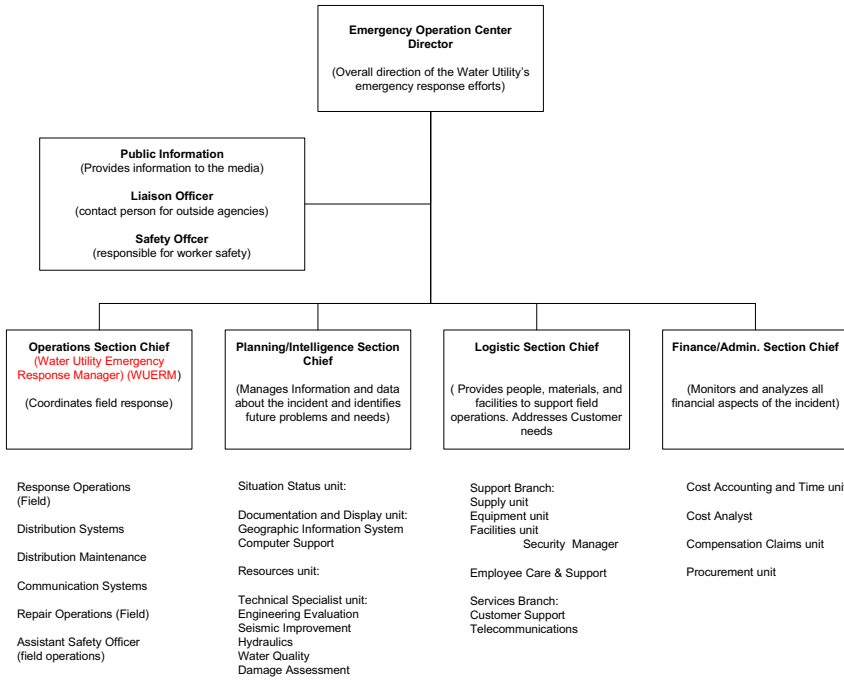
EXAMPLE OF SMALL WATER UTILITY UTILIZING A SEMS ORGANIZATION CHART



Section Leader Assignments

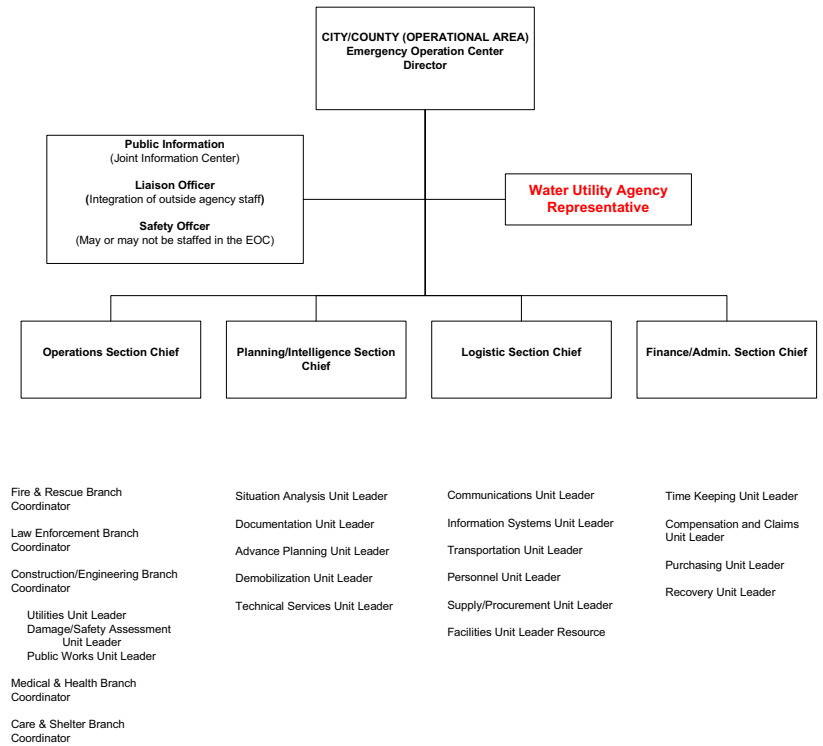
SECTION	PRIMARY	ALTERNATE
Incident Manager	General Manager or Water Utility Emergency Response Manager (WUERM)	Chief Engineer
Operations	Water Quality/District Superintendent or WUERM	Field Main. Superintendent
Planning/Assessment	Head of Engineering Services	Principal Engineer
Logistics/Resources	Asst. Field Maintenance Superintendent	Field Supervisor
Administration	Admin. Manager Accounting	Personnel Administrator Human Resources
COMMAND STAFF	PRIMARY	ALTERNATE
Public Information	Public Education Coordinator	Customer Service Admin.
Advisory Support	Safety Coordinator	Assistant Safety Coordinator

EXAMPLE OF A LARGE UTILITY UTILIZING A SEMS ORGANIZATIONAL CHART



Depending on the size and scope of the emergency, the **Water Utility Emergency Response Manager (WUERM)** may serve as the Emergency Operations Center Director until the position is delegated to a general manager or replacement for the duration of the incident.

EXAMPLE OF A CITY/COUNTY (OPERATIONAL AREA) EMERGENCY OPERATIONS CENTER WITH WATER UTILITY AGENCY REPRESENTATIVE



Water Utilities may be required to assign staff to the City or County (Operational Area) Emergency Operations Center (EOC) to coordinate with Public Health or any of the Sections that might need information or assistance. Typically, Water Utility Staff would report to the EOC as an **Agency Representative** and can move down, in the organization, to any of the sections as needed. Initially, the **Water Utility Agency Representative** would check in with the Liaison Officer, if one is not present, then he/she would report to the EOC Director.

4.4 Emergency Operations Center

4.4.1 EOC Description

CVWD's [REDACTED]

CVWD [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] CVWD

[REDACTED]

SD GM CVWD SD GM

[REDACTED] Local Government Agency CVWD

[REDACTED] GM

Local Government

Local Government CVWD

CVWD telephone. If Telephone communications are out of service emergency radios shall be used. CVWD should

[REDACTED] CVWD

5.0 Concept of Operations

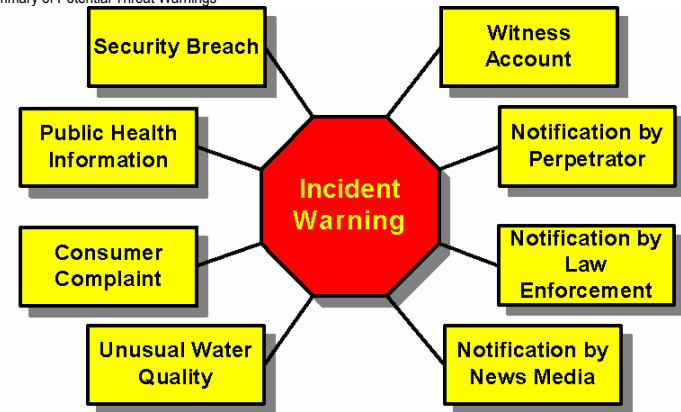
5.1 Decision Process

This section defines the decision process to be followed to determine if and when the ERP should be activated.

5.1.1 Threat Warning

The "threat warning" is the initial occurrence or discovery that triggers an evaluation of whether or not to activate the ERP. A description of the possible types of threat warnings that CVWD may encounter is provided below. If any of these conditions are met, then a Threat Warning will be issued by the GM.

FIGURE 1
Summary of Potential Threat Warnings



5.1.1.1 Threat Warning Conditions

Security Breach. Physical security breaches caused by relaxed operations, such as unsecured doors or criminal acts such as trespassing, are probably the most common threat warnings.

Witness Account. Employees or neighbors may see suspicious activity, such as trespassing, breaking and entering, and other types of tampering, that they report to local law enforcement or water utility.

Notification by Perpetrator. A threat may be made directly to the water utility, either verbally or in writing. Historical incidents would indicate that verbal threats made over the phone are more likely than written threats.

Notification by Law Enforcement. CVWD may receive notification about a threat directly from law enforcement. Such a threat could be a result of a report of suspicious activity or gathered by law enforcement intelligence.

Notification by News Media. A threat to contaminate the water supply might be delivered to the news media, or the media may discover a threat. A conscientious reporter should immediately report such a threat to the police, and either the reporter or the police would immediately contact the water utility.

Unusual Water Quality. All unusual changes in water quality should be investigated. Results should be ruled out that can be explained by the analytical detection method or on-line monitoring system (*i.e.*, false positives/ false negative, known interferences, instrument reliability) or results from a known cause (*e.g.*, overdosing of coagulant).

Consumer Complaint. An unexplained or unusually high incidence of consumer complaints about the aesthetic qualities of drinking water may indicate potential contamination. Many chemicals can impart a strong odor or taste to water, and some may discolor the water.

Public Health Notification. The first indication that contamination has occurred may be victims showing up in local emergency rooms and health clinics. An incident triggered by a public health notification is unique in that at least a segment of the population has been exposed to a harmful substance.

5.1.2 ERP Activation

Once a threat warning is issued by the GM or his/her designee, the threat decision process begins. The WUERM or designated alternate should immediately be notified since this person will be involved in this decision process.

The threat decision process is considered in three successive stages: “possible,” “credible,” and “confirmed.” As the threat escalates through these three stages, the actions that might be considered also change. The following table describes the stages, actions that will be taken, and activation of the ERP. The WUERM is responsible for working through the threat decision process and implementing the ERP as needed.

Decision Process Stage	Actions Taken	ERP Activation Level
Stage 1 Possible Threat	Evaluate available information. Review findings from VA. Determine if threat is possible. (Could something have actually happened?)	Implement precautionary response actions.
Stage 2 Credible Threat	Determine that threat is credible by establishing corroborating information.	Activate portions of ERP. <ul style="list-style-type: none"> Initiate internal and external notifications.

Decision Process Stage	Actions Taken	ERP Activation Level
	Highly credible source. Health department/customer reports. Unusual monitoring results.	<ul style="list-style-type: none"> Issue public health advisories. Initiate water sampling and analysis. Consider partial or full activation of CVWD EOC.
Stage 3 Confirmed Major Event	Confirm threat by verifying definitive evidence and information that establishes the major event. Perform water sampling and analysis.	Fully implement ERP. Immediately initiate appropriate APs. Fully activate CVWD EOC.

5.2 Response Capability Identified in the Water System VA

This section describes the response capabilities for CVWD that were identified in the water system VA.

Response Type	Title	Description
Procedures	Emergency Operating Procedures	A set of procedures that define employee responses to specific types of emergency events.
Procedures	Coordination with Local Police Force	An agreement with local law enforcement units regarding the support the utility can expect from the agency and the type of training and support the utility will provide to responding police agencies.
Communication	Public Address or Other Warning System	Used to notify people within a facility of an incident. Should a building or entire facility need to be evacuated, it is important to have a means by which everyone can be notified.
Mitigation	Fire Brigade at the Plant	Training and equipping a group of first responders from the plant population.

5.3 Personnel Safety

The safety of CVWD staff, emergency responders, and the public is paramount during an emergency. This section provides basic safety information and procedures to be followed in an emergency, including a toxic or potentially toxic release of chlorine or other chemical agents from a water treatment plant. Additional information regarding proper procedures

during and after a chemical release can be found in CVWD's Risk Management Plan and in the associated AP. This section will cover Facility Protective Actions, Personnel Accountability, Public Notification for Protective Actions, and Emergency First Aid procedures.

5.3.1 Facility Protective Actions

Facility protective actions include sheltering-in-place, evacuation, and a combination of the two. When determining the appropriate protective action decision, the CVWD GM/SD or designee will carefully consider:

- If a hazardous material is involved, its characteristics, amount, release rate, physical state, ambient temperature, and location
- The employees at risk and the capability and resources to recommend a protective action.
- The time factors involved in the emergency and their effect on the selected protective action.
- The effect of the present and predicted meteorological conditions (on the control of the hazardous material, storm warnings, flood stage level, etc.) and the feasibility of the protective actions.
- The capability to communicate with both the employees at risk and emergency response personnel before, during, and after the emergency.
- The capabilities and resources of the facility to implement, control, monitor, and terminate the protective action.

5.3.1.1 Evacuations

- Facility evacuation should follow the pre-designated evacuation routes from buildings and plant grounds as shown in Appendix B.
- These evacuation routes are posted *in the Board Room, on the bulletin board in the main office and in the operations building. Additionally lighted exit signs are located at each exit.*
- If an evacuation is ordered by the GM/SD, all employees shall report to the pre-designated assembly areas shown on the evacuation plans to be accounted for by their supervisor.
- Supervisors are responsible to assure their disabled employees are provided with adequate assistance during the evacuation.

5.3.1.2 Sheltering-in-place

- Sheltering in place should occur in the pre-designated facilities and locations as described in Section 5.5.1 and as shown in Appendix B.
- Locations should be equipped with emergency medical supplies and provisions.

5.3.2 Personnel Accountability

- All designated assembly areas are indicated on the facility evacuation plans.
- All personnel are responsible to report to their designated assembly area.
- *Supervisors* are responsible to assure all their personnel have reported after an ordered evacuation.
- Personnel who are not accounted for at the assembly area must be reported to the GM/SD to assure a proper response is coordinated. This response may include checking with other assembly areas, radio communication, or organization of a formal search.
- No search of a contaminated area should be performed unless all rescue personnel are fully equipped and trained for the expected hazards.

5.3.3 Off-site Protective Actions

Some hazardous materials hazards have the potential to affect off-site personnel and the local response agency may request support in making protective action decisions for the general public surrounding your facility.

CVWD will respond to requests from the local agencies for recommendations, or protective actions for the general population surrounding the facility.

5.3.4 First Aid and Emergency Medical Treatment

- Call 911 for medical assistance.
- Assure emergency medical care is provided to injured persons, as necessary until off-site medical personnel arrive.
- If trained, provide emergency first aid for victims of heart attack, strokes, severe bleeding, and shock.
- *GM/SD should designate* a supervisor to coordinate off-site ambulance and medical assistance.
- Victims may need to be decontaminated if the emergency involves hazardous material.
- Control the scene to avoid further spread of contamination.
- Obtain accurate information on the health hazards of the material from Local Emergency Response Team, Safety Officer, MSDSs, or the Poison Control Center.
- Determine if there is a risk of secondary contamination to personnel or emergency transport vehicles/hospitals.
- If needed, follow your pre-determined decontamination protocol, which should include removing wet or exposed clothing, flushing affected skin and hair with water, and using soap or shampoo for oily substances.
- Provide post-emergency medical evaluation as required by Occupational Safety and Health Administration (OSHA).

5.4 Protective Action Protocols

The protocols that CVWD uses for sheltering-in-place and for evacuation are described below.

5.4.1 Sheltering-in-Place Protocol

Evacuation during emergency incidents is sometimes, but by no means always, necessary. The emergency situation can escalate so rapidly that there would be no time to evacuate personnel. For hazardous weather conditions, a prudent course of action, for the protection of the potentially-affected employees/personnel, would be to remain inside with the doors and windows closed.

The SD or GM is responsible for determining whether sheltering-in-place is the most appropriate response to protect the vulnerable employees. If the decision is to shelter-in-place, then the affected employees will be advised to follow these guidelines to reduce the chance of being injured:

- Provide information on the procedure to employees and visitors on the facility public address system. If the information is provided to a local agency at their request, it should be coordinated through the Facility EOC.
- Close all doors to the outside and close and lock the windows.
- Inform staff to assemble at the *parking lot area*
- Close as many internal doors as possible.
- If an outdoor explosion is possible, close drapes, curtains, and shades over windows, stay away from windows to prevent potential injury from flying glass.
- *During a Hazardous materials release emergency a shelter in place will be called with special consideration to the location. If located in the administration buildings, ensure that all windows and door are closed and cooling or heating systems are off. If located in the operations building, ensure that the doors are closed and ventilations systems are off.*

5.4.2 Evacuation Procedures

This evacuation procedure identifies the areas to be evacuated, as well as the warnings and instructions to personnel that must be provided. The assembly and shelter locations are identified in the posted facility evacuation plan.

5.4.2.1 Evacuation Areas

The evacuated areas may be expanded by the on-site or off-site Incident Commander. An incident resulting in off-site consequences (hazardous materials incident) shall determine evacuation requirements in conjunction with appropriate external agencies.

Decisions on evacuation are incident-specific and must be made at the time of incident. Estimated vulnerable zones that may be provided with the incident specific checklists should be used for planning purposes only and should not be used peremptorily in an emergency response situation.

5.4.2.2 Evacuation Warning and Instruction

Once the area to be evacuated has been identified, it is necessary to inform employees that they must evacuate:

- **Facility Personnel**
 - Public address system: Using either voice and/or tones that are pre-established and exercised evacuation routes and procedures.
 - Person-to-person: Not very rapid but can be very thorough.
 - Combination of both public address and person-to-person.
- **General Public (Responsibility of Local Public Responders)**

Although protective actions for the general public are the responsibility of the Local Government this information may be helpful if you are requested to provide recommendations to the local Incident Commander:

- Door-to-door: Requires significant personnel and is a slow process but is very thorough.
- Public address system (from a mobile unit or within a building): Requires fewer personnel than door-to-door and is quicker to accomplish but is not as thorough.
- Combination of Door-to Door and Public Address system: Dependent on the area to be evacuated a combination of methods of instruction may be warranted.

The method used to accomplish the evacuation will be determined by the Incident Commander and will be incident and site-specific. The evacuees should be told to report to their designated assembly areas and wait for further instructions.

5.4.3 Evacuee Assembly Areas

Evacuee assembly areas must be pre-designated for each area of the facility. Depending upon the conditions and requirements for the particular emergency, the Incident Commander may move or modify assembly area locations. The location of the Evacuee Assembly Areas are:

Parking Lot 1 for front office personnel

Parking lot 2 for Operations personnel

Each manager/supervisor shall be responsible for head counts, assembly security and safety and will communicate with the Incident Commander to obtain support for various needs, such as food, water, medical aid, or transportation.

5.4.4 Shelter Locations

As necessary, the Incident Commander will select the most appropriate shelter from pre-identified shelter locations from the following list:

Board room or front office for office personnel.

Operations meeting room or operations personnel.

Once the shelter location has been determined, the shelter information will be disseminated to:

- Incident site personnel.
- Assembly area personnel.
- EOC, if activated.
- Responders on-site: for example, the communications coordinator and the medical unit, *Carpinteria/Summerland Fire Department*.

Once the facility employees are notified to evacuate they will proceed to their designated shelter.

Carpinteria/Summerland Fire Department will be notified of the shelter locations and be provided with information on any injuries or the type of hazardous material and any known exposures.

Once an area is evacuated, the **SD** or designee must secure the area. Security personnel operating in or around an evacuated area must not be located in a hazardous or potentially hazardous area that would necessitate the use of personnel protective clothing or place them in an unsafe condition.

6.0 Communication Procedures

In general, communications during an emergency response will proceed along the chain of command of the SEMS/ICS. The number of people notified will increase as the incident expands and decrease as the incident contracts toward its conclusion.

The type and extent of the disaster will dictate the normal and/or alternative methods of communication that will be used. The possibility of a coordinated attack that targets the water, power, and communications systems must be considered. In this case, it would be reasonable to assume that some methods of communication will either be unavailable or limited to certain areas during an emergency. It is anticipated that employees will know upon arrival at their duty stations which communication systems are functional and which are not. This information should be relayed to the **CVWD Information Officer** upon discovery.

CVWD uses the ICS for its command structure during water emergencies. The table below describes the ICS command structure positions and shows which individuals will hold the various positions during different emergency situations (recognizing that at different stages of an event or for different severity of events that the person/position responsible in the ICS changes).

6.1 CVWD Chain of Command

CVWD Primary Position Descriptions and Assignment-

Name and Title	Responsibilities during an Emergency	Contact Numbers
Charles Hamilton Incident Commander	Sets incident objectives and priorities. Responsible for management of incident. Coordinates all emergency response activities between agencies. Communicates with all participants including those outside water utility.	Office: 805-684-2816 Cell: 805-331-0128 Home: 805-560-0927
Charles Hamilton Water Utility Emergency Response Manager	Overall management and decision making for the water system. WUERM is lead for managing the emergency and contacting the regulatory agencies. All communications to external parties are approved by the WUERM.	Office: 805-684-2816 Cell: 805-331-0128 Home: 805-560-0927

Bob McDonald Alternate WUERM	Takes over for primary WUERM if primary WUERM is unavailable.	Office: 805-684-2816 Cell: 805-512-0312 Home: 805-649-0734
Omar Castro Water Utility Emergency Operations Center Manager (WUOCM)	Heads water utility's EOC. Provides operational and resource management during an emergency.	Office: 805-684-2816 Cell: 805-331-0049 Home: 805-640-0778
Charles Hamilton Public Information Officer P/O	Member of the command staff and reports directly to the Incident Commander. Interfaces with media and disseminates public information. Plans the information strategy.	Office: 805-684-2816 Cell: 805-331-0128 Home: 805-560-0927
Bob McDonald Liaison Officer	Member of the command staff On-scene contact for representatives from other agencies.	Office: 805-684-2816 Cell: 805-512-0312 Home: 805-649-0734
Omar Castro Safety Officer	Develops and recommends measures for assuring personnel safety. Assess and anticipates hazardous and unsafe conditions.	Office: 805-684-2816 Cell: 805-331-0049 Home: 805-640-0778
Norma Rosales Office Administrator	Responsible for administrative functions in the office. Receives customer phone calls and maintains a log of complaints and calls. In an emergency, could provide a standard carefully pre-scripted message for customers who call with general questions.	Office: 805-684-2816 Cell: 805-896-1350 Home: 805-641-1458
Brian King Technical Specialist Water Quality Manager	In charge of collecting samples, having samples analyzed by certified labs, receiving the results. Determines the quality of the water being served meets all drinking water and public health requirements.	Office: 805-684-2816 Cell: 805-331-0019 Home: 805-898-3825
Jon Paola Technical Specialist Water Treatment Plant (WTP) Operator	In charge of running water treatment plant. Performs inspections, maintenance, sampling of the WTP and relaying critical information to the WUERM. Assess WTP facilities and treatment provided and provides recommendations to the WUERM.	Office: 805-684-2816 Cell: 805-453-4113 Home: 805-684-1066

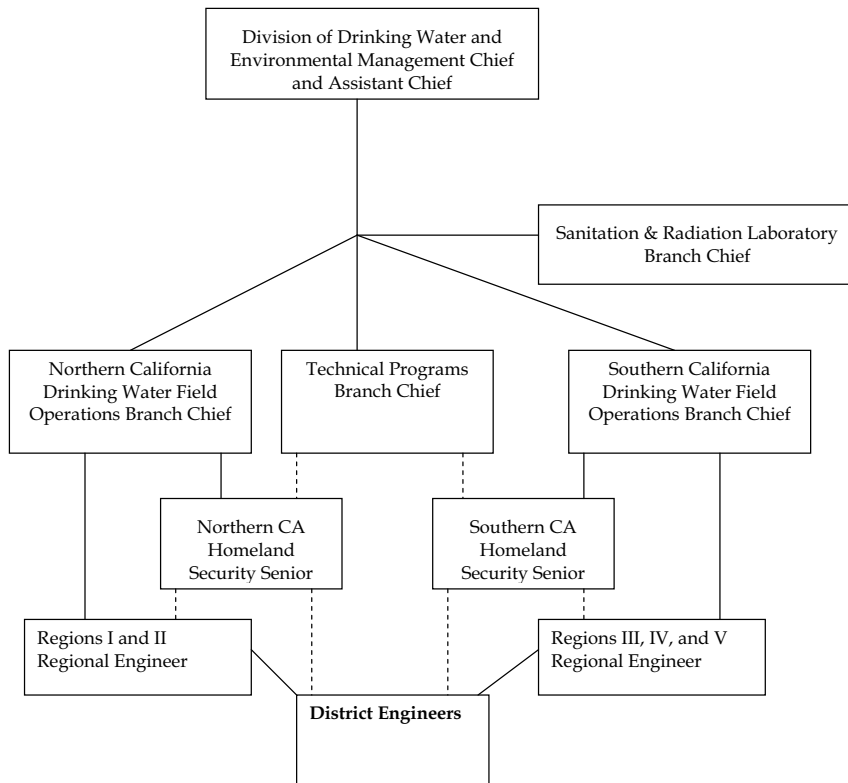
Brian King Technical Specialist Water System Operator	In charge of operating the water system. Performs inspections, maintenance, sampling of the system and relaying critical information to the WUERM. Assess facilities and provides recommendations to the WUERM.	Office: 805-684-2816 Cell: 805-331-0019 Home: 805-898-3825
Danny Rada Technical Specialist Field Staff	Delivers water quality notices or door hangers. Provides backup to water system operator. Conducts site inspections of all facilities.	Office: 805-684-2816 Cell: 805-331-0105 Home: 805-560-6953

6.2 Drinking Water Field Operation Branch – Chain of Command

The primary contact for the CVWD during any emergency is the District Engineer. CVWD will contact the District Engineer in the event of any emergency.

From the District Engineer, authority moves up the line to the Regional Engineer, Branch Chiefs, Assistant Division Chief, to finally the Chief of the Division.

The following flow chart shows the chain of command structure within the California Department of Health Services Drinking Water Program (DWP). The CDHS DWP Web site has a map showing all the contact information for each District Office and District Engineer. <http://www.dhs.ca.gov/ps/ddwem/technical/dwp/dwpindex.htm>. The figure can be modified to show your utility's command structure, and you can add names and contact numbers from the CDHS DWP Web site.



6.3 Notification Procedures

6.3.1 Initial Notifications

First Responders (911): If the situation is an emergency that needs response from local fire, law enforcement, medical or HAZMAT team, calling 911 should be the first immediate call.

CVWD is aware that if the water system staff calls 911 from a cell phone, then the call is routed to the nearest California Highway Patrol Office, which may be in another city or county, and not in the immediate local 911 area. Direct phone numbers have been obtained from local first responders for the different 911 areas that are served by CVWD. These numbers are shown in the Table C-1 in Appendix C.

6.3.2 Internal Contact List

The contact information in Table C-2 in Appendix C represents the network of CVWD personnel and serves as the primary means of contacting internal staff.

If it becomes necessary to contact the staff member's family or emergency contact, the PIO will have primary responsibility for making the notification. The *Human Resources Manager* will assist the PIO with family member communications as needed.

6.3.3 External Contact List

Tables C-3, C-4, C-5, C-6, and C-7 in Appendix C contain contact information for the local and national agencies that CVWD may need to notify. The WUERM will make the decision as to which of these agencies needs to be notified, and at what point in the threat evaluation the calls should be made. The PIO or Liaison Officer will serve as the water utility point of contact for these agencies.

In addition to the External Contact List in Appendix C, CVWD maintains an Emergency Notification Plan (Appendix E) that includes day and evening phone numbers for the CDHS District Engineer and/or staff, CA State OES, and County Personnel. The Notification Plan also includes procedures for notifying the affected service area, and it is updated whenever there is a personnel change.

Note: Each PWS in California can obtain a specific Emergency Notification Plan form from their CDHS District Engineer. It is typically mailed/emailed with the Annual Reports and has current contact information for the CDHS DE, district staff and County Personnel.

6.3.4 Additional Information on State of California Agencies

The initial notification response to any emergency should be to call 911 for the needed first responder and then to the CDHS DWP. The CDHS DWP is the Drinking Water Primacy Agency in California and has regulatory jurisdiction over all public water systems in the state.

Contact to the CDHS DWP should be to their District Engineer. If the water system is unable to contact the District Engineer (or one of their staff), the water system should use the California OES Warning Center Phone Number: 1-800-852-7550, which is a 24/7 phone number. A second phone number for the OES Warning Center is 916-845-8911.

A duty officer will answer the California OES Warning Center phone call and refer to statewide emergency phone numbers. In order to assist the duty officer-it will expedite response if you request the CDHS duty officer. The CDHS duty officer will then call management staff in the DWP to respond to the emergency.

The District Engineer will be able to assist CVWD with:

- Inspections of water treatment plants, storage facilities, and watersheds (chemical contamination, sewage spills, erosion, and drainage diversions).
- Water quality sampling.
- Consulting with water system staff/operators.
- Providing technical assistance.
- Documenting the disaster's effect on the water system through photographs and reports.
- Keeping local officials advised of the current drinking water situation.
- Review plans and specifications for reconstruction projects, and issue amended permits as needed.
- Laboratory sampling analysis.

6.3.5 Critical Customers Contact List

In addition to the agencies listed in the previous tables in Appendix C, Table C-8 in Appendix C contains contact information for CVWD's Critical Care Customers (Primary Notification) and Large Water Users (Secondary Notification). The WUERM will decide if the PIO will notify some or all of these customers in the event of an emergency involving the water system.

CVWD's Water Quality Emergency Notification Plan, as required under Section 116460, California Health and Safety Code, is included in Appendix E of this ERP.

6.3.6 Contact Information for Fire-fighting Water Alternate Sources

If the water becomes contaminated with substances that render it unsafe to be used for fire-fighting, then an order will be issued to discontinue use of the affected fire hydrants. Alternate sources for fire-fighting water are shown in Table C-9 in Appendix C.

6.3.7 Contact Information for Bulk and Bottled Water Suppliers

CVWD has identified agencies and private companies as shown in Table C-10 in Appendix C that could provide water supplies (bottled or bulk) in the event of an incident.

6.4 Public Notice Procedures

6.4.1 Media Notification

Effective communication with the public is a key element of this ERP. CVWD personnel have been instructed to direct all media questions or information requests related to an emergency situation to CVWD's Public Information Officer, PIO. The PIO is the official spokesperson for CVWD and is the only CVWD employee who is authorized to speak directly to public media representatives.

Table C-11 in Appendix C provides contact information for the various media agencies that CVWD PIO might use to disseminate information to the public.

6.4.2 Public Notification

A Boil Water Order (BWO), Unsafe Water Alert (UWA), or Do Not Drink Notice can be issued by one, or a combination of the following agencies:

- CDHS DWP. Designated personnel: District Engineer, Regional Engineer or Branch Chief.
- Local County Health Department. Designated personnel: County Health Officer or Director of Environmental Health Department for small water systems under county jurisdiction.
- Affected Water System. Designated personnel: responsible person in charge of the affected water system (i.e., Director of Water Quality, Manager, Director of Water Department, Director of Public Works, Owner, etc.).

NOTE: If the water system feels the event/circumstance requires IMMEDIATE issuance of a BWO/UWA and that public health is in serious risk, they may issue a BWO/UWA without first contacting the CDHS District Engineer. If that is the case, the water system must notify CDHS, the County Health Officer and the Environmental County Health Department immediately after issuing a BWO/UWA. Usually a water system will not issue a public notice without the approval (or advisement/guidance from CDHS) as they do not want to take on the sole responsibility for the public notice. In that sense CDHS, will partner with the water system to make the public health decision whether to issue a BWO/UWA or not..

In the event that a BWO, UWA, or Do Not Drink Notice is issued by CVWD, the GM is the person who has the authority to issue the public notice.

If a BWO or UWA is issued, the General Manager will notify the PIO in the EOC immediately.

CVWD will ensure that all public notifications (BWO, UWA, or Do Not Drink Notices) will be coordinated with the CDHS District Engineer, County Environmental Health Department, and the County Public Health Officer prior to issuing a public notice.

CVWD will notify the CDHS District Engineer, the County Environmental Health Department and the County Public Health Officer prior to or immediately after issuing a

public notice. Notice must be given to a person rather than a message left on voicemail. Table C-12 in Appendix C shows the primary, 1st Alternate and 2nd Alternate contacts for the County Public Health Officer and the County Environmental Health Department.

CVWD has prepared a series of public notices and press releases for use during various emergency situations in accordance with CDHS guidance. These notices can be found in Appendix D.

A summary of each of the notices, including guidance on when to issue each of them, is provided below.

Consumer Alert During Water Outages or Periods of Low Pressure: If the water system is experiencing power outages, water outages, or low-pressure problems, a consumer alert may be issued to the public. The notice provides consumers information on conserving water and how to treat the water with household bleach if the water quality is questionable.

BWO: A BWO should be issued when minimum bacteriological water quality standards cannot be reasonably assured. To assure public health protection a BWO should be issued as soon as it is concluded by the designated personnel that the water supply is or may be biologically unsafe. Examples of these situations include:

1. Biological contamination of water supply system, including but not limited to:
 - Positive total or fecal coliform bacteriological samples.
 - Prolonged water outages in areas of ruptured sewer and/or water mains.
 - Failed septic tank systems in close proximity to ruptured water mains.
 - Ruptured water treatment, storage, and/or distribution facilities in areas of known sewage spills.
 - Known biological contamination.
 - Cross-connection contamination problems.
 - Illness attributed to water supply.
2. Unusual system characteristics, including but not limited to:
 - Prolonged loss of pressure.
 - Sudden loss of chlorine residual.
 - Severe discoloration and odor.
 - Inability to implement emergency chlorination.
3. Implemented due to treatment inadequacies.

UWA/Do Not Drink: In the event a water quality emergency due to known or suspected chemical (non-bacteriological) contamination to the water system a UWA or Do Not Drink should be issued. Water should not be used for drinking and cooking, but may be used for sanitation purposes. Examples of these situations include:

1. Known or suspected widespread chemical or hazardous contamination in water supply distribution, including but not limited to:
 - Ruptured water distribution system (storage tanks, mains) in area of known chemical spill coupled with loss of pressure.
 - Severe odor and discoloration.
 - Loss of chlorine residual.
 - Inability of existing water treatment process to neutralize chemical contaminants prior to entering the distribution system.
2. Threatened or suspected acts of sabotage confirmed by analytical results, including but not limited to:
 - Suspected contamination triggered by acts of sabotage or vandalism.
3. Emergency use of an unapproved source to provide a supplemental water supply.

UWA/Do Not Use: In the event a known or suspected contamination event occurs to the water system, where the contaminate may be chemical, biological, or radiological, a UWA or Do Not Use should be issued. Water should not be used for drinking, cooking, or sanitation purposes. Examples of these situations include:

1. Known or suspected widespread chemical or hazardous contamination in water supply distribution, including but not limited to:
 - Terrorist contamination event.

6.5 Cancellation of Public Notification

Once a BWO/UWA is issued, the only agency that can rescind the public notice is the drinking water primacy agency.

CDHS DWP will not lift the BWO until two rounds, collected one day apart, of coliform bacteria samples have been analyzed and the results are negative. CVWD will fax two sets of sample results to the CDHS DWP District Office for final approval before rescinding the BWO.

Special chemical sampling will be required to rescind an UWA. CVWD will contact the CDHS DWP District Office to determine required sampling.

7.0 Water Quality Sampling

During an emergency, there are several types of water quality sampling that may need to be analyzed depending on the actual event. If it is natural disaster, flood or power outage, sampling will probably only include bacteriological samples, turbidity and chlorine residual samples if the system is chlorinated. However, if the event is a terrorist act or contamination event, the sampling will include a full scan of Weapons of Mass Destruction (WMD) chemical, radiological, and microbiological (unless the actual contaminant used is known).

7.1 Laboratory Resources

In general there are four different types or ownership of laboratory facilities in California that can analyze drinking water samples, which are listed below:

1. Commercial/private laboratories
2. County Public Health Laboratories
3. State Department of Health Services Laboratories
4. Research Facility/Specialty Laboratories

In general, laboratories are grouped into two broad categories: chemical or biological. Chemical laboratories include general environmental chemistry laboratories, radiological laboratories, and specialty laboratories that may be able to handle and analyze exotic contaminants, such as chemical weapons and radionuclides. Biological laboratories include environmental microbiology laboratories and the Laboratory Response Network (LRN) that typically analyze clinical samples for pathogens and select biotoxins.

7.2 CDHS Laboratory

The CDHS Sanitation and Radiation Laboratories Branch (SRLB) is organized within the Division of Drinking Water and Environmental Management. SRLB is the State's primary drinking water quality testing laboratory and is the only State laboratory capable of measuring environmental radiation. Its primary mission is to provide analytical services, reference measurements and technical support pertaining to the State's Drinking Water and Radiological Health Programs.

SRLB has two laboratories: the Southern California Section is located in Los Angeles and performs microbiological, inorganic and organic testing in various water matrices; the Northern California Section, located in Richmond, carries out inorganic and organic analyses in water, and radiochemical testing in various environmental matrices in addition to water. The SRLB in conjunction with the CDHS Microbial Disease Laboratory (MDL) does microbiological analyses including biotoxins.

7.3 California Mutual Aid Laboratory Network

The CDHS SRLB—in conjunction with the water utilities, USEPA Region 9 laboratory in Richmond, Lawrence Livermore National Laboratory, and the California Department of Water Resources—have formed a laboratory network, the California Mutual Aid Laboratory Network (CAMAL Net), to address laboratory capacity issues associated with possible drinking water-related contamination events. CAMAL Net establishes a triage system to process samples when water systems or commercial laboratory methods are not available or the water system lacks capacity within their own lab. The CAMAL Net system will not handle any samples where field screening indicates that the sample may contain a Center for Disease Control (CDC)-listed WMD agent. The list of WMD agents can be found on the CDC Web page at <http://www.bt.cdc.gov/>. Any request for analysis through the CAMAL Net system needs to be approved by the CDHS DWP District Engineer in CVWD's jurisdiction prior to collection of water quality samples to be processed.

7.4 Chemical Analysis Classification

The CDHS, along with its stakeholders and federal partners, are in the process of developing an algorithm to assist California water systems, public health agencies, law enforcement, and first responders with the identification of possible chemical agents in drinking water contamination events. A draft version has been developed, and it is anticipated that a final version will be released in the near future. The final version will become an appendix to this ERP.

7.5 Biological Analysis Classification

The LRN for Bioterrorism has ranked laboratories (Level A, B, C or D) based on the type of safety procedures they practice.

- Level A Lab uses a Class II biosafety lab (BSL) cabinet.
- Level B Lab is a BSL-2 facility + BSL-3 safety practices.
- Level C Lab is a BSL-3 facility.
- Level D Lab is a BSL-4 facility.
- Level A Labs are used to rule out and forward organisms.
- Level B Labs are used for limited confirmation and transport.
- Level C Labs are used for molecular assays and reference capacity.
- Level D Labs are used for the highest level of characterization.

Currently, in California there are 28 Level A labs, 10 Level B labs, and two Level C labs. The two Level C laboratories are the Los Angeles County Public Health Laboratory in Los Angeles, California and the CDHS MDL in Richmond, California. Lawrence Livermore National Laboratory is also a Level C laboratory, but access to that lab is restricted. The only Level D laboratories available in the LRN are the national laboratories, such as those at the CDC and the Department of Defense. These laboratories test and characterize samples that pose challenges beyond the capabilities of the Level A, B, and C reference labs and provide support for other LRN members during a serious outbreak or terrorist event. The most

dangerous or perplexing pathogens are handled only at the Bio-Safety Level 4 laboratories at CDC and the United States Army Medical Research Institute of Infectious Diseases.

7.6 Natural Disaster

During a natural disaster, flood, earthquake, fire etc., sample collection and analysis will be available to CVWD by the normal laboratory resources. Sampling will primarily consist of regulatory bacteriological samples and turbidity to show that the system has been flushed out. CVWD may also collect chlorine residual samples throughout the system with a field chlorine test kit.

7.7 Terrorist Event/Contamination Event

Once a threat warning has occurred and CVWD has deemed the threat confirmed, it will be necessary to collect water quality samples. The decisions made from the time of the threat warning to the time the threat is confirmed is specific to each individual event. This “credibility stage” may take between 2 and 8 hours and should involve consultation with local first responders, CDHS DWP (Drinking Water Primacy Agency), local Health Department, and the regional Federal Bureau of Investigation (FBI) office. For more detail on sampling during various stages of threat confirmation, see Action Plans 1A, 1B, and 1C.

Assuming the threat is credible enough to warrant water quality sampling, several state and federal agencies are involved to collect samples, transport the samples to appropriate laboratory, and analyze the samples.

CVWD’s first step in this process will be to contact the CDHS District Engineer so the utility can notify the CDHS-SRLB of the incoming samples. The following steps are described in more detail below:

- Emergency Water Quality Sampling Kit (EWQSK)
- Sample Collection
- Laboratory Required for Analysis
- Sample Transport
- Sample Analysis

7.7.1 Emergency Water Quality Sampling Kit

CVWD’s EWQSK contains sample bottles need for chemical, radiological, and microbiological analysis that can be split into three complete sample sets. A complete list of the EWQSK contents is provided in Appendix B. The EWQSK should remain sealed before the sample is collected. Since some of the sample bottles contain reagents that expire, the bottles in each kit are replaced annually.

7.7.2 Sample Collection

Several types of samples may need to be collected depending on the event. Sampling protocol includes:

- CVWD will collect samples for public health to determine if the water is safe for consumption using the EWQSK for public health.
- CVWD will assist the FBI as requested to collect samples for the crime scene investigation.
- CVWD will also provide assistance as requested to responding agencies such as local HAZMAT, FBI, California National Guard Civilian Support Team (CST), or USEPA.
- Proper personal protection material will be used at all times to minimize exposure to any possible agent, and all personnel involved in sampling activities will be properly trained.

7.7.3 Laboratory

Depending on the results of the field screening and actual event, the required laboratories will be notified and prepared to accept the samples. If an EWQSK (supplied by CVWD or CDHS DWP) is used, the CAMAL Net and the LRN will be notified and involved in the process for laboratory selection. The first step in this process is for the District Engineer working with CVWD to contact SRLB.

7.7.4 Sample Transport

Depending on the responding agencies and field screening results, the ICS will decide how the samples will be transported to the appropriate lab. Since the samples may be used for the crime investigation, proper chain-of-custody must be maintained. The possible agencies, depending on the event, are local HAZMAT teams, CHP, FBI, CST, or USEPA.

7.7.5 Sample Analysis

Once the samples are delivered to the appropriate laboratory, they may be split for analysis to different laboratories. The CDHS SRLB laboratory will handle the transport and laboratory testing protocols. Sample results will be shared through the ICS. Sample analysis may take days to weeks to complete depending on the complexity of analysis.

7.8 CVWD Water Sampling and Monitoring Procedures

The CVWD will have the primary responsibility for all water sampling and monitoring activities during an actual or potential contamination event. The [City of Santa Barbara Estero Treatment Plant Laboratory Director \(LD\)](#) will provide technical support and advice to the local emergency management agency or HAZMAT team as needed throughout the incident.

The LD will also play a key role in the interpretation and communication of monitoring or lab results and will consult directly with the [WUERM](#) on significant findings.

Specific information and procedures regarding water sampling and monitoring is included the following table:

Contaminant	Sampling/Monitoring Procedures	Quantity of Required Samples	Responsible Individual
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

The CVWD does not maintain a laboratory but has the following analytical capabilities:

Coli-alert tests, Colorimeter based, Chlorine residual and pH.

If outside laboratory assistance is needed, CVWD will contact the following laboratory facilities:

Outside Laboratory Name	Contact Number	Capabilities
[REDACTED]	[REDACTED]	[REDACTED]

8.0 Emergency Response, Recovery, and Termination

8.1 Response Phase

8.1.1 Initial Response

When a situation occurs that is judged to be of an emergency, "out of the ordinary," or of a suspicious nature, the person who first notices the situation should determine whether an immediate response by police, fire, or emergency medical services is necessary. If so, immediately call 911 to report the incident. Next, report the incident to your supervisor.

General information to be reported from CVWD facilities (or incident sites) includes:

- What has happened?
- What can be done about it?
- What is needed?
- An assessment of whether the situation calls for activation of the CVWD's EOC.

Additionally, immediate specific information should include the status of CVWD's:

- Personnel
- Equipment
- Vehicles
- Communications capabilities
- Facilities

The employee who first noticed the incident and the Supervisor that responded should:

1. Notify the WUERM or the Alternate WUERM as soon as possible.
2. Remain in a safe location in the vicinity to meet and assist medical, fire, and police personnel and other first responders as necessary.

8.1.2 Damage Assessment

Damage assessment is used to determine the extent of damage, estimate repair or replacement costs, and identify the resources needed to return the damaged system to full operation. This assessment is accomplished during the emergency response phase of the event, before the recovery phase is implemented.

The WUERM is responsible for establishing a Damage Assessment Team.

The CVWD Damage Assessment Team will be led by *the Operations Manager, with representatives from engineering*. Team composition may vary, however, depending upon the nature and extent of the emergency.

Damage assessment procedures should follow the guidelines established for system operability checks and determination of operability/serviceability. At a minimum, the damage assessment team will:

- Conduct an initial analysis of the extent of damage to the system or facility.
- Estimate the repairs required to restore the system or facility; the estimate should consider supplies, equipment, rental of specialized equipment (e.g., cranes), and additional staffing needs.
- Provide this estimate to the procurement representative for a cost estimate to conduct repairs.

Appendix F contains a damage assessment form that can be used for all CVWD facilities.

8.2 Recovery phase

8.2.1 Recovery Planning

During emergency response operations, the **Incident Commander** or **WUERM** will appoint a Recovery Manager. The Recovery Manager is responsible for selecting a recovery team and developing a recovery strategy prior to emergency termination.

The CVWD Recovery Manager will be a senior operations representative familiar with the systems that may be affected by the emergency. He/she will have the responsibility and authority to coordinate recovery planning; authorize recovery activities; protect the health and safety of workers and the public; and initiate, change, or recommend protective actions. Additional responsibilities include:

- Facilitate the transition from emergency to recovery operations.
- Develop, implement, and maintain the Recovery Plan.
- Coordinate all vendor and contractor activities that occur on site.
- Ensure that the appropriate safety inspections have been completed.
- Coordinate the completion of emergency repairs and schedule permanent repairs.
- Notify key agencies of emergency repair status and the scheduled completion of system repairs.
- Complete permanent repair and/or replacement of system facilities.
- Review press releases prior to distribution.
- Release repaired facilities and equipment for normal use.
- Replace, or authorize the replacement of, materials and supplies used in the emergency.

- Document all recovery activities.

The Recovery Manager determines the expertise and selects the personnel necessary for the recovery team. In general, the composition of the recovery team is based on the nature and extent of the emergency and includes:

- Technical advisors to the Recovery Manager, which may include external experts such as industrial hygienists or fire protection specialists.
- Utility personnel with the technical expertise to direct post-incident assessment activities and to analyze the results. Maintenance, operations, and engineering staff are expected to fill these positions.
- PIO, who will respond to inquiries or concerns from employees, the public, the news media, and outside agencies. The PIO should be prepared to provide information regarding the results of the incident investigation, the extent of on-site and off-site impacts, and the status of recovery operations.

8.2.2 Recovery Activities

The following activities will be directed by the Recovery Manager and will be executed by the recovery team as required following an incident or emergency situation.

- Notify all appropriate regulatory agencies that recovery phase is underway.
- Install warning signs, barriers, and shielding as needed.
- Take measures to protect workers and the public from hazardous exposures.
- Complete detailed evaluations of all affected water utility facilities and determine priorities for permanent repair, reconstruction, or replacement at existing or new locations.
- Begin repair activities design and make bids for contractor services.
- Make necessary repairs to the system and un-tag repaired facilities and equipment.
- Restore all telecommunications, data processing, and similar services to full operation.
- Complete assessment of losses and costs for repair and replacement, determine approximate reimbursements from insurance and other sources of financial assistance, and determine how residual costs will be financed by the water utility.
- Define needs for additional staff, initiate recruitment process, and adopt temporary emergency employment policies as necessary.
- Execute agreements with vendors to meet service and supply needs.
- Address needs for handling and disposing of any hazardous waste generated during recovery activities.
- Control discharges as a result of recovery activities within regulatory and environmental compliance limits.

- Reevaluate need for maintaining the emergency management organization; consider returning to the normal organizational structure, roles, and responsibilities when feasible.
- Collect cost accounting information gathered during the emergency and prepare request for Emergency Disaster Funds (follow FEMA and State OES requirements).
- Debrief staff to enhance response and recovery efforts in the future by identifying lessons learned, developing action plans and follow-up mechanisms, and providing employee assistance programs if needed.
- Prepare After-Action Reports as required. Complete reports within 6 months of the event (90 days for public utilities which are part of a city or county government.).

8.3 Termination and review phase

The Recovery Manager will officially terminate the recovery phase when normal operations are resumed at all facilities affected by the emergency. Termination and review actions include the following:

- Initiate permanent reconstruction of damaged water utility facilities and systems.
- Obtain inspections and/or certifications that may be required before facilities can be returned to service.
- Restore water utility operations and services to full pre-event levels.
- Determine how emergency equipment and consumable materials should be replenished, decontaminated, repaired or replaced.
- Identify operational changes that have occurred as a result of repair, restoration, or incident investigation.
- Document the recovery phase, and compile applicable records for permanent storage.
- Continue to maintain liaison as needed with external agencies.
- Update training programs, the CVWD ERP, and standard operating procedures, as needed, based upon lessons learned during the emergency response and recovery phases of the event.

9.0 Emergency Plan Approval, Update, Training, and Exercises

This section of the ERP describes the plan review and approval process, the practice and update schedule, plan for assessment of the ERP effectiveness and training, exercises, and drills of the ERP.

9.1 Plan Review and Approval

The CVWD process for review and approval of the ERP is described in the sections below.

9.1.1 CVWD Approval Authority

This plan is intended to be a living document that is reviewed regularly and updated as needed to ensure that the information it contains is correct. The ERP will be reviewed and approved by the WUERM, GM, and other approval personnel. The plan will undergo an initial review and approval process and will be reviewed and signed off by the SD after each revision. A revision log is found in the front of the ERP binder.

9.1.2 Local Government Approval

Local Government will review this plan annually for coordination and consistency with the City of Carpinteria's emergency planning programs.

9.2 Practice and Update Schedule

The schedule for training, updating, and review of the ERP is discussed below.

9.2.1 Schedule and Responsibility for Training and Exercises

A schedule for general security training and incident-specific exercises/drills for testing of the emergency response plan will be developed and reviewed annually.

The exercises, drills, and training sessions will be conducted annually or more frequently if the SD deems it necessary.

The SD will be responsible for the organization and management of the security-training program.

9.2.2 Schedule for ERP Review and Update

The SD will review and update the ERP and APs as follows:

- Annually prior to the annual ERP/AP training sessions.
- Upon update of the VA.

- Following the ERP exercises.
- Within 2 months of any significant plant modification or water system change.
- Immediately when there is a utility staff change where the staff member was named in the ERP.
- Immediately when there is a change in the roles and responsibilities of anyone involved in response activities.
- Immediately upon changes in internal and external contact information.

9.3 Assessment of ERP Effectiveness

To evaluate the effectiveness of the ERP and to ensure that procedures and practices developed under the ERP are adequate and are being implemented properly, the CVWD staff will perform audits of the program on a periodic basis.

One method of audit will be through exercises and drills. Members of CVWD management will act as observers during the exercises and will evaluate the staff's performance in responding to emergency incidents as well as the overall effectiveness of the ERP in accomplishing their goals. CVWD management will review the results of the evaluation, and the ERP and APs will be updated as appropriate to incorporate any lessons learned from the exercises.

The ERP program will also be discussed as an agenda item during the GM's meeting each time the VA is updated. At this time, CVWD management and staff will discuss the need to update or augment the ERP based on new information regarding threats or critical asset vulnerability.

The SD will maintain a file of ERP assessment and after-action reports.

9.4 Training, Exercises, and Drills

All CVWD personnel who may be required to respond to emergencies will receive initial and refresher training class on this ERP. The training will be conducted annually or when any of the following occurs:

- New employees are hired.
- Special emergency assignments are designated to operations staff.
- New equipment or materials are introduced.
- Procedures are updated or revised.

The training will consist of the following programs:

Orientation Sessions: The orientation sessions will include basic instruction and explanation of the ERP and AP procedures. Written tests may be used to ensure some level of comprehension by the attendees.

Table Top Workshop: Table top workshops involve developing scenarios that describe potential problems and providing certain information necessary to address the problems.

Employees will be presented with a fabricated major event. Next they will verbally respond to a series of questions and then evaluate whether their responses match what is written in the ERP.

Functional Exercises: The functional exercise is designed to simulate a real major event. A team of simulators is trained to develop a realistic situation. By using a series of pre-scripted messages, the simulation team sends information in to personnel assigned to carry out the ERP procedures. Both the simulators and personnel responding to the simulation are focused on carrying out the procedures to test the validity of the ERP.

Full-scale Drills: Emergency response personnel and equipment are actually mobilized and moved to a scene. A problem is presented to the response personnel, and they respond as directed by the ERP and the Incident Commander or WUERM at the scene.

10.0 References and Links

The following is a list of references and Internet links that provide additional water system security and ERP information.

California Department of Health Services Drinking Water Program: CDHS DWP is the Drinking Water Primary Agency for all California public water systems serving over 200 service connections. CDHS has published a guidance document to assist California public water systems in developing or revising their emergency response plans. General information, as well as the guidance document and its appendices, is available at <http://www.dhs.ca.gov/ps/ddwem/homeland/default.htm>.

Department of Homeland Security (DHS): DHS is the overall lead agency for homeland security issues. DHS will become involved in incident response if needed. General information is available at <http://www.dhs.gov/dhspublic>.

United States Environmental Protection Agency: USEPA has numerous resources available. The following are key sources:

- Water Infrastructure Security information, guidance, and training information can be found at <http://www.epa.gov/safewater/security/index.html>.
- Information on Local Emergency Planning Committees (LEPCs) can be found at <http://www.epa.gov/ceppo/lepclist.htm>.

The Center for Disease Control and Prevention: The CDC develops resources to assist hospital staff, clinics, and physicians in diagnosing diseases related to terrorism, reporting incidences of disease, and controlling the spread of infection. Information on emergency preparedness and response can be found at <http://www.bt.cdc.gov/>.

- To assist in the development of a Public Health Response Plan, the CDC published a planning guidance document entitled *The Public Health Response to Biological and Chemical Terrorism: Interim Planning Guidance for State Public Health Officials* (July 2001), which can be found at <http://www.bt.cdc.gov/Documents/Planning/PlanningGuidance.pdf>.
- *Interim Recommended Notification Procedures for Local and State Public Health Department Leaders in the Event of a Bioterrorist Incident* can be found at <http://www.bt.cdc.gov/EmContact/Protocols.asp>.

Federal Emergency Management Agency (FEMA): FEMA's mission is to reduce loss of life and property and protect our nation's critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response and recovery. FEMA takes the lead if an incident is assigned to DHS. General information can be found at <http://www.fema.gov>. In addition, several online training courses relevant to emergency management are available on-line from FEMA at <http://training.fema.gov/EMIWeb/IS/crslist.asp>.

The American Water Works Association (AWWA): USEPA training developed through partnership with AWWA covers the entire spectrum of security issues including assessing vulnerabilities, emergency response plans, and risk communication. AWWA information can be accessed at <http://www.awwa.org>. Specific AWWA resources can be found at <http://www.awwa.org/communications/offer/secureresources.cfm>.

The Association of State Drinking Water Administrators (ASDWA): ASDWA has information on water security planning, training, and links to state programs and other information sources. Go to the security link at <http://www.asdwa.org/>.

National Rural Water Association (NRWA): NRWA developed the SEMS Software Program, which can be loaded on a personal computer. It is based on NRWA/ASDWA's *Security Vulnerability Self-Assessment Guide for Small Drinking Water Systems Serving Populations Between 3,300 and 10,000*. More information can be found at <http://www.nrwa.org/>.

Agency for Toxic Substances and Disease Registry (ATSDR): ATSDR is directed by [congressional mandate](#) to perform specific functions concerning the effect on public health of hazardous substances in the environment. These functions include public health assessments of waste sites, health consultations concerning specific hazardous substances, health surveillance and registries, response to emergency releases of hazardous substances, applied research in support of public health assessments, information development and dissemination, and education and training concerning hazardous substances. More information can be found at <http://www.atsdr.cdc.gov/>.

Appendix A
Action Plans

AP 1A - Threat of or Actual Contamination to Water System		
POSSIBLE STAGE		
AP Summary:	This Action Plan applies to the intentional introduction of a contaminant into the water system. The contaminant could be introduced at any point within the system, including raw water, treatment facilities, distribution system including distribution pipes, finished water storage, or pump stations. The adversary may or may not give notice of the contaminant or provide the location. Contamination may have actually occurred or it may be a hoax.	
Initiation and Notification:	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	<p><i>Use this AP if you receive any incident warning (see types of warnings to left) indicating possible contamination of your water system</i></p> <p><i>If you have evidence that corroborates the warning, or if collective information indicates that contamination is likely, GO TO AP 1B – CREDIBLE STAGE.</i></p> <p><i>If there is confirmed evidence and/or definitive information that the water system has been contaminated. GO TO AP 1C – CONFIRMED STAGE.</i></p>

AP 1A - Threat of or Actual Contamination to Water System		
POSSIBLE STAGE		
	[REDACTED]	
Initiation and Notification:	[REDACTED] [WUERM] [Alternate WUERM] [REDACTED]	The individual who first notices or receives the threat warning should contact the [WUERM] immediately by whatever means of communication may be available.
Equipment Identified:	[REDACTED]	This equipment is available to assist in the execution of this AP.
Specific Activities:		
I. Assess the Problem	[REDACTED]	Threat Warning Report Forms help document, organize and summarize information about a

AP 1A - Threat of or Actual Contamination to Water System		
POSSIBLE STAGE		
	[REDACTED]	security incident. The individual who discovers the incident warning, the [WUERM], or another designated individual may complete the form. Only the form that corresponds to the type of threat warning needs to be completed. Completion of the form should not distract emergency responders from more urgent matters.
	[REDACTED]	Threat Evaluation Worksheets help organize information about a threat warning that will be used during the Threat Evaluation Process. The individual responsible for conducting the Threat Evaluation (e.g., the [WUERM]) should complete this worksheet.
II. Isolate and Fix the Problem	[REDACTED]	Notification phone numbers can be obtained from the Organization Contact List in the Appendices as well as from Section XX of the ERP. The immediate operational response actions are primarily intended to limit exposure of customers to potentially contaminated water. See EPA Toolbox Module 2, Section 3.3.2 for guidance on containing contaminants and evaluating movement of potentially contaminated water through distribution systems.
III. Monitoring	[REDACTED]	Site Characterization is intended to gather critical information to support the 'credible' stage of threat

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
V. Report of Findings	E. File incident reports.	<i>The Utility [Security Director] should file an internal report for the Utility's files, and also provide information as requested to Local Law Enforcement and other outside agencies.</i>
VI. AP-1B Revision Dates		

AP 1C - Contamination to Water System CONFIRMED STAGE		
AP Summary:	[REDACTED]	
Initiation and Notification:	[REDACTED]	[REDACTED]

AP 1C - Contamination to Water System CONFIRMED STAGE		
	[REDACTED]	
Initiation and Notification:	[REDACTED] [WUERM] [Alternate WEURM]	[REDACTED] [WUERM]
	[REDACTED]	[REDACTED] [WUERM]
	[REDACTED]	[REDACTED] [WUERM]
	[REDACTED]	[REDACTED] [Information Officer] [IO]
Equipment Identified:	[REDACTED]	[REDACTED]

**AP 1C - Contamination to Water System
CONFIRMED STAGE**

Specific Activities:		
I. Assess the Problem	[REDACTED]	[REDACTED]
I. Assess the Problem	[REDACTED]	[REDACTED]
II. Isolate and Fix the Problem	[REDACTED] (ERP Section XX)	[REDACTED]

**AP 1C - Contamination to Water System
CONFIRMED STAGE**

	[REDACTED]	
III. Monitoring	[REDACTED]	
IV. Recovery and Return to Safety	[REDACTED]	[REDACTED]

AP 1C - Contamination to Water System		
CONFIRMED STAGE		
V. Report of Findings	[REDACTED]	<i>[Security Director]</i>
VI. AP-1C Revision Dates		

AP 2 - Structural Damage from Explosive Device		
AP Summary:	[REDACTED]	
Initiation and Notification:	[REDACTED] CVWD [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [WUERM] [Alternate [WUERM] [REDACTED] [REDACTED] [REDACTED]	[REDACTED] [WUERM] [REDACTED]
	[REDACTED] CVWD [REDACTED] [REDACTED] [REDACTED]	[REDACTED] [REDACTED] [REDACTED] [WUERM]

AP 2 - Structural Damage from Explosive Device		
	[REDACTED]	[WUERM] [REDACTED]
Equipment Identified:	[REDACTED]	[REDACTED]
Specific Activities:		
I. Assess the Problem	[REDACTED]	[REDACTED]

AP 2 - Structural Damage from Explosive Device		
	[REDACTED]	
II. Isolate and Fix the Problem	[REDACTED] (ERP Section XX)	
III. Monitoring	[REDACTED]	
IV. Recovery and Return to Safety	[REDACTED]	[WUERM] [REDACTED] [WUERM] [REDACTED]

AP 2 - Structural Damage from Explosive Device

V. Report of Findings	[REDACTED]	[REDACTED] <i>[Security Director]</i>
VI. AP-2 Revision Dates		

**AP 3 - Employee Assaulted with Weapon
(Armed Intruder)**

AP Summary:	[REDACTED]	
Initiation and Notification:	[REDACTED]	[REDACTED]
Equipment Identified:	[REDACTED]	[REDACTED]

AP 3 - Employee Assaulted with Weapon (Armed Intruder)		
Specific Activities:		
I. Assess the Problem	[REDACTED]	[REDACTED]
II. Isolate and Fix the Problem	[REDACTED]	
III. Monitoring	[REDACTED]	[REDACTED]

AP 3 - Employee Assaulted with Weapon (Armed Intruder)		
	[REDACTED]	
IV. Recovery and Return to Safety	[REDACTED]	
V. Report of Findings	[REDACTED]	
VI. AP-3 Revision		

AP 3 - Employee Assaulted with Weapon (Armed Intruder)	
Dates	

AP4 - SCADA Security		
AP Summary:	<div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div>	
Initiation and Notification:	<p>Notify immediately upon discovery of the attack:</p> <ul style="list-style-type: none"> • [WUERM], • Data (IT) Manager <p>Others as appropriate (for example):</p> <ul style="list-style-type: none"> • Internet Service Provider • Computer Equipment Vendor • Computer Emergency Response Team 	<div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <p style="text-align: center; color: blue;">[WUERM]</p> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div>
Equipment Identified:	<div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div>	<div style="background-color: black; width: 100%; height: 15px; margin-bottom: 5px;"></div>

AP4 - SCADA Security		
	[REDACTED]	
Specific Activities:		
I. Assess the Problem	[REDACTED]	[REDACTED]
II. Isolate and Fix the Problem	[REDACTED]	[REDACTED]

AP4 - SCADA Security		
	[REDACTED]	[REDACTED]
III. Monitoring	[REDACTED]	[REDACTED]
IV. Recovery and Return to Safety	[REDACTED]	[REDACTED]
IV. Recovery and Return to Safety	[REDACTED]	[REDACTED]

AP4 - SCADA Security		
	[REDACTED]	[REDACTED]
V. Report of Findings	[REDACTED]	[REDACTED]
VI. AP-4 Revision Dates		

AP5 - IT Security		
AP Summary:	[REDACTED]	
Initiation and Notification:	[REDACTED] [WUERM] [REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED] [REDACTED]
Initiation and Notification:	[REDACTED] [REDACTED]	[REDACTED] [REDACTED]

AP5 - IT Security		
	[REDACTED]	[REDACTED]
Equipment Identified:	[REDACTED]	[REDACTED]
Specific Activities:	[REDACTED]	[REDACTED]

AP5 - IT Security		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

AP5 - IT Security

	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

AP5 - IT Security

	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[WUERM]

- [WUERM]
- [Alternate WUERM]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]		
	[REDACTED]	[REDACTED]
II. Isolate and Fix the Problem	[REDACTED]	[REDACTED]
II. Isolate and Fix the Problem	[REDACTED]	[REDACTED]

[REDACTED]		
	[REDACTED]	[REDACTED]
III. Monitoring	[REDACTED]	[REDACTED]
IV. Recovery and Return to Safety	[REDACTED]	[REDACTED]
V. Report of Findings	[REDACTED]	[REDACTED]
VI. AP-7 Revision Dates	[REDACTED]	

AP 8A - Natural Event (Flood)

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] • [WUERM] [Alternate WUERM] [WUERM]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

AP 8A - Natural Event (Flood)

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

AP 8A - Natural Event (Flood)		
	[REDACTED]	
[REDACTED]	[REDACTED] [IO]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

AP 8A - Natural Event (Flood)		
	[REDACTED] [WUERM] [IO]	
[REDACTED]	[REDACTED]	http://www.fema.gov/fp [REDACTED]

**AP 8A - Natural Event
(Flood)**

AP 8A - Natural Event (Flood)		
[REDACTED]	[REDACTED]	
[REDACTED]		

	[REDACTED]	
[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
IV. Recovery And Return to Safety	[REDACTED]	[REDACTED]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
V. Report of Findings	[REDACTED]	[REDACTED]
VI. AP-8B Revision Dates	[REDACTED]	

AP 8C - Natural Event (Tsunami)		
AP Summary:	[REDACTED]	
Initiation and Notification:	[REDACTED]	[REDACTED]
Equipment Identified:	[REDACTED]	[REDACTED]

AP 8C - Natural Event (Tsunami)		
Specific Activities:		
I. Assess the Problem	[REDACTED]	
II. Isolate and Fix the Problem	[REDACTED]	

AP 8C - Natural Event (Tsunami)		
II. Isolate and Fix the Problem	[REDACTED]	
II. Isolate and Fix the Problem	[REDACTED]	
II. Isolate and Fix the Problem	[REDACTED]	

AP 8C - Natural Event (Tsunami)		
	[REDACTED]	
III. Monitoring	[REDACTED]	
	[REDACTED]	

AP 8C - Natural Event (Tsunami)		
	[REDACTED]	
IV. Recovery And Return to Safety	[REDACTED]	

AP 8C - Natural Event (Tsunami)		
	[REDACTED]	
IV. Recovery And Return to Safety	[REDACTED]	
V. Report of Findings	[REDACTED]	
VI. AP-8C Revision Dates		

AP 8D - Natural Event (Earthquake)		
AP Summary:	[REDACTED]	
Initiation and Notification:	[REDACTED]	[REDACTED]
Equipment Identified:	[REDACTED]	[REDACTED]
Specific Activities:	[REDACTED]	
I. Assess the Problem	[REDACTED]	[REDACTED]

AP 8D - Natural Event (Earthquake)		
	[REDACTED]	[REDACTED]
I. Assess the Problem	[REDACTED]	[REDACTED]
II. Isolate and Fix the Problem	[REDACTED]	[REDACTED]
III. Monitoring	[REDACTED]	[REDACTED]

AP 8D - Natural Event (Earthquake)		
	[REDACTED]	
IV. Recovery And Return to Safety	[REDACTED]	
V. Report of Findings	[REDACTED]	
VI. AP-8D Revision Dates		

AP 9 - Water Supply Interruption		
AP Summary:	[REDACTED]	
Initiation and Notification:	[REDACTED]	[REDACTED]
Equipment Identified:	[REDACTED]	[REDACTED]
Specific Activities:		
I. Assess the Problem	[REDACTED]	
II. Isolate and Fix the Problem	[REDACTED]	

AP 9 - Water Supply Interruption		
	[REDACTED]	
II. Isolate and Fix the Problem	[REDACTED] CVWD	
	[REDACTED]	
	[REDACTED]	
II. Isolate and Fix the Problem	[REDACTED]	

AP 9 - Water Supply Interruption		
	[REDACTED]	
	[REDACTED]	
III. Monitoring	[REDACTED]	[REDACTED]
	[REDACTED]	
IV. Recovery and Return to Safety	[REDACTED]	[REDACTED]
	[REDACTED]	
	[REDACTED]	

AP 9 - Water Supply Interruption		
	[Redacted]	
V. Report of Findings	[Redacted]	
VI. AP-9 Revision Dates		

AP 10A - Bomb Threat (Telephone / In Person)		
AP Summary:	This Action Plan applies to the receipt of a bomb threat via telephone or in person. It is important to develop this plan in counsel with the local police and the local fire department services.	
Initiation and Notification:	[Redacted] [Redacted] [Redacted] [WUERM] [Redacted] [Redacted] [Redacted] [Redacted]	[Redacted]
Equipment Identified:	[Redacted] [Redacted]	
Specific Activities:		
I. Assess the Problem	[Redacted]	[Redacted]
II. Isolate and Fix the Problem	[Redacted] [Redacted]	[Redacted]

AP 10A - Bomb Threat (Telephone / In Person)		
VI. AP 10A Revision Dates		

AP 10B - Bomb Threat (Suspicious Package / Letter)		
AP Summary:		
Initiation and Notification:		
Equipment Identified:		
Specific Activities		
I. Assess the Problem		[WUERM]

AP 10B - Bomb Threat (Suspicious Package / Letter)		
I. Assess the Problem	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
II. Isolate and Fix the Problem	[REDACTED]	[REDACTED]
	[REDACTED] [WUERM]	[REDACTED]
	[REDACTED]	[REDACTED]
II. Isolate and Fix the Problem	[REDACTED] CVWD	[REDACTED]
	[REDACTED] [Information Officer] [IO]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]

AP 10B - Bomb Threat (Suspicious Package / Letter)		
	[REDACTED]	
III. Monitoring	[REDACTED]	
	[REDACTED]	
	[REDACTED]	
	[REDACTED]	
IV. Recovery and Return to Safety	[REDACTED]	
V. Report of Findings	[REDACTED]	[Security Director] [REDACTED]
VI. AP 10B Revision Dates		

AP 10C - Bomb Threat (Written Threat Received)		
AP Summary:	This Action Plan applies to the receipt of a written bomb threat. It is important to develop this plan in counsel with your local police and local fire department.	
Initiation and Notification:	[REDACTED] [REDACTED] [REDACTED] [WUERM] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED]
Equipment Identified:	[REDACTED] [REDACTED]	
Specific Activities		
I. Assess the Problem	[REDACTED]	
II. Isolate and Fix the Problem	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED] [REDACTED] [REDACTED]

AP 10C - Bomb Threat (Written Threat Received)		
	[WUERM] [REDACTED] CVWD CVWD [REDACTED] [REDACTED] [Information Officer] [IO]	[REDACTED]
	[REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED] [REDACTED]
III. Monitoring	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED] [REDACTED]

AP 10C - Bomb Threat (Written Threat Received)		
	[REDACTED]	
IV. Recovery and Return to Safety	[REDACTED]	
V. Report of Findings	[REDACTED]	[Security Director] [REDACTED]
VI. AP 10C Revision Dates		

Appendix B
System and Facility Information

SYSTEM SHUT DOWN AND ISOLATION PLAN

SYSTEM COMPONENT	METHOD OF SHUTDOWN OR ISOLATION			LOCATION & PERSON TO PERFORM SHUTDOWN OR ISOLATION		SPECIAL REQUIREMENTS
	Automated	Manual	SCADA Controlled	SCADA Controlled	Manual Operation	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Distribution System Isolation Plan

[REDACTED]

[REDACTED]

CA Dept. of Health Services Recommended Emergency Sampling Kit

Quantity Per Kit	Total Quantity Needed (50 Kits)	Size	Description	Supplier	Page No.	MFG Number	Catalog No.	Quantity to Order	Unit Price	Extended Price
3	150	1 L	Wheaton Glass 24/case	VWR	190	219820	16159-903	7	\$166.46	\$1,165.22
4	200	1 L	Amber Glass 12/case	VWR	176		15900-142	17	\$26.20	\$445.40
3	150	2 1/2 L	Amber Glass 6/case	VWR	179		15900-192	25	\$26.10	\$652.50
5	250	40 ml	Amber Glass Vials 72/case	VWR	175		15900-024	4	\$70.15	\$280.60
2	100	125 ml	125 ml (4 oz) Nalgene Polypropylene Wide Mouth Bottle 12/case	Fischer Scientific	191	2105-0004	02893A	9	\$19.74	\$177.66
3	150	1/2 Gal	Plastic 64 oz Type F Natural	Mayfair Plastics				150	\$0.458	\$68.70
2	100	125 ml	Amber Glass w/septa 12/case	VWR	176		15900-146	9	\$17.75	\$159.75
2	100	250 ml	Disposable Plastic Bac-t-Bottle w/thiosulfate (Forest Biomedical)	Eagle Pitcher				100	\$1.50	\$150.00
2	100	10 L	Collapsible Carboy LDPE Cubitainers 12/case	VWR	189		EP 160-2.5	9	\$58.74	\$528.66
4	200	pair	Vinyl gloves (disposable) Large 1000/case	VWR	746		PH2D7852	1	\$177.41	\$177.41
2	100	each	Moldex Type N85 particulate respirator 20/pk	Fischer Scientific	1544	1501	19-003-245A	5	\$21.07	\$105.35
2	100	each	Disposable Lab Jacket Kimberly Clark "Kleen Guard" Size XL 15/case	Fischer Scientific	35	36544	17-981-41H	7	\$80.00	\$560.00
2	100	each	Bouton Softsides Goggle	Central Stores			45-132-12500	100	\$1.89	\$189.00
12	600	feet	50' Coil 3/8-in ID 1/2 -in O.D. Tygon Laboratory tubing R-3606	VWR	1807	AJC00027	63010-122	4	\$73.05	\$292.20

C:\WD\ERP 07/27/2007

B-3

2	100	each	Connector Clamps with thumbscrew 10/pack	Fischer Scientific	410		14-198A	10	\$14.18	\$141.80
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Quantity Per Kit	Total Quantity Needed (50 Kits)	Size	Description	Supplier	Page No.	MFG Number	Catalog No.	Quantity to Order	Unit Price	Extended Price
10	500	9 x 18	Zip-lock LDPE Sample Bags Nalgene 250/case	VWR	55	6255-0918	56766-130	2	\$139.45	\$278.90
1	50	roll	Lab grade marker tape 1" (12/case)	VWR	926		36425-067	4	\$50.04	\$200.16
1	50	each	Biohazard Bags 12 x 24 (200/case)	VWR	52		11215-898	1	\$119.16	\$119.16
4	200	each	Antiseptic wipes (pads) 200/case	VWR	1945		21899-553	1	\$123.80	\$123.80
10	500	grams	Sodium Thiosulfate granules Mallinckrodt 500 grams	VWR	2320		MK809612	1	\$37.95	\$37.95
40	2000	each	Adhesive labels 500/roll	Stock				4	\$5.00	\$20.00
2	100	30.8 Qt	Collapsible Cooler (Igoo Softmate 48)	Igoo			Softmate 48	100	\$32.36	\$3,236.00
1	50	30 Gal	Plastic Storage Bin (Sterilite Ultra)	Sterilite Corp.		17454204	Ultra 30 Gal	54	\$11.49	\$620.46
									Total	\$9,831.03
								Price per Kit		\$196.62

C:\WD\ERP 07/27/2007

B-4

TABLE C-1

911 Area	Direct Phone Number
Santa Barbara Sheriff	805- 684-4561

The individual(s) who discover the threat or emergency situation will immediately notify CVWD's 24-hour Call Center. The *Dispatcher at the Call Center* will then notify the [Water Utility Emergency Response Manager](#) or [WUERM](#). The remainder of the CVWD staff will be notified according to the table below.

TABLE C-2

Name and Title	Responsibilities during an Emergency	Contact Numbers
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]

Appendix C
Emergency Phone Lists

TABLE C-3

Local Agencies	Name	Contact Numbers
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

TABLE C-4

County Agencies	Name	Contact Numbers
County Public Health Officer	Elliot Schulman M.D.	805-681-4373
County Director of Environmental Health Department	Rick Merryfield	805-681-4900
County OES	General Number	805-681-5526
County HAZMAT Team	General Number	805-686-8170

TABLE C-5

State Agencies	Name	Contact Numbers
CDHS District Engineer	Kurt Souza If can't get a hold of "DE", call the CA Warning Center's 24/7 phone number and ask for the CDHS Duty Officer. A CDHS manger will be contacted and call the water system	[REDACTED]
Department of Water Resources	General	818-543-4600, 916-657-1134
Department of Fish and Game	OSPR	805-568-1229
Department of Toxic Substances Control	Dorothy Rice	916-323-3577
Regional Water Quality Control Board	Todd Stanley	805-542-4769
CA OES (State OES)	Warning Center (Ask for CDHS Duty Officer-Drinking Water Program)	(800) 852-7550 24/7 (916) 845-8911 24/7

TABLE C-6

Federal Agencies	Name	Contact Numbers
FBI	Randy J Aden (SSRA)	805-642-3995
EPA	Mavin Young	415-972-3561
Department of Homeland Security (DHS)	General	202-282-8000
Health and Human Services (HHS)	General	877-696-6775
Center for Disease Control (CDC)	General	888-246-2675
ATF	General	805-348-1820 or 888-283-2662

TABLE C-7

Vendors / Contractors	Name	Contact Numbers
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

TABLE C-8

Customer Name	Critical Care Customers	Large Water Users	Primary Contact Information	Secondary Contact Information
Veterans Building and Clinic	Yes	No	City of Carpinteria 805-684-5405	SB County Health Department 805-684-8681
Carpinteria Unified School District	yes	yes	Cindy Abbott 805-684-4511	
Cate School	yes	yes	Sandy Pierce 805-684-4127	Tano Vega 805-684-4127
Ridgeland Mutual Water Co	no	yes	Dick Van Antwerp 805-969-4966	

TABLE C-9

Firefighting Water Source	Contact Information	Quantity Available
Montecito Water District	Bob Roebuck, Montecito Water	Interties for water direct into our system
Jamison Lake	Bob Roebuck, Montecito Water	Lake full
Lake Casitas	John Johnson, Casitas Water	Lake Full

TABLE C-10

Supplier	Contact Information
Arrowhead Water	Contact Person: John Andrews Office phone: 805-653-0253 Mobile phone:

TABLE C-11

Media Type	Contact Information
Santa Barbara News Press	Camilla Cohee, 805-564-5280
KEYT	News Room, 805-882-3933
KRUZ,	Pat Cantwell, 805-682-2895
KBKO (Spanish Speaking radio)	805-879-1490

TABLE C-12

County Agency	Name	Contact Numbers
County Health Department	Primary: Roger E. Heroux, M.P.A.	805- 681-5102
County Health Department	1 st Alternate: Peggy Langle	805-681-5102
County Health Department	2 nd Alternate:	805-681-5102
County Health Officer	Primary: Elliot Schulman, MD	805-681-5102
County Health Officer	1 st Alternate: Michele Mickiewicz	805-681-5102
County Health Officer	2 nd Alternate: Jane Overbaugh	805-681-5102

PUBLIC NOTICE

**CONSUMER ALERT DURING WATER OUTAGES
OR PERIODS OF LOW PRESSURE**

1. If you are experiencing water outages or low water pressure, immediately discontinue any non-essential water usage. This includes all outdoor irrigation and car washing. Minimizing usage will reduce the potential for the water system to lose pressure or completely run out of water. Please notify your water system of the outage or low pressure.
2. If the water looks cloudy or dirty, you should not drink it. Upon return of normal water service, you should flush the hot and cold water lines until the water appears clear and the water quality returns to normal.
3. If you are concerned about the water quality or are uncertain of its safety, you may add eight drops of household bleach to one gallon of water and let it sit for 30 minutes or alternatively, if you are able, water can be boiled for one minute at a rolling boil to ensure its safety.
4. Use of home treatment devices does not guarantee the water supply is safe after low pressure situations.
5. Do not be alarmed if you experience higher than normal chlorine concentrations in your water supply since the California Department of Health Services is advising public water utilities to increase chlorine residuals in areas subject to low pressure or outages.
6. The California Department of Health Services has also advised public water systems to increase the bacteriological water quality monitoring of the distribution system in areas subject to low pressure. They may be collecting samples in your area to confirm that the water remains safe. You will be advised if the sampling reveals a water quality problem.
7. Your water system is committed to make certain that an adequate quantity of clean, wholesome, and potable water is delivered to you. We recommend that you discuss the information in this notice with members of your family to ensure that all family members are prepared should water outages or low water pressure occur.

Appendix D
Public Notices and Press Releases

FECHA:

ORDEN DE HERVIR EL AGUA

Hierva su Agua antes de Usarla

Falta de seguir este aviso podría tener resultados estómago o enfermedad intestinal

Debido a la [falta de agua (water outage), falta de electricidad (power outage), inundación (flood), incendio (fire), temblor (earthquake) or other emergency], durante [date, month, etc.], el Departamento de California de Servicios de Salud en conjunción con la Carpinteria y el Condado de [County name] esta aconsejando a todos usuarios de el sistema de [water system name] que hiervan el agua de canilla o usen agua embotellada para beber y cocinar como medida de seguridad.

Que debo hacer?

NO BEBA EL AGUA SIN ANTES HERVIRLA. Hierva toda el agua, **déjela hervir por un minuto**, y déjela reposar antes de usarla, o utilice agua embotellada. Agua hervida o embotellada debe ser usada para beber y para preparar la comida hasta el próximo aviso. **Hierviendo morta a bacteria y otros organismos en el agua. [or Este es el metodo preferido para asegurar que el agua esta segura para beber.]**

Optional alternative to include for prolonged situations where it fits.

- Otro método de purificación del agua para los residentes que no tengan gas o electricidad disponibles es utilizar blanqueador líquido de uso doméstico (Clorox®, Purex®, etc.). Para hacerlo, añada 8 gotas (o 1/4 cucharadita) de blanqueador por galón de agua clara, o 16 gotas (o media cucharadita) por galón de agua turbia, mézclelo bien y déjelo descansar 30 minutos antes de utilizarlo. Este procedimiento de purificación causa que el agua huela y tenga sabor a cloro, lo que indica que ha sido desinfectada de manera adecuada.
- También se puede utilizar tabletas de purificación del agua siguiendo las instrucciones del fabricante.
- Hay agua potable disponible en los siguientes sitios: 1301 Santa Ynez Avenue
Traiga un recipiente limpio para el agua (con una capacidad máxima de 5 galones).

Le informaremos cuando las pruebas demuestren que no hay bacterias y que usted ya no necesita hervir su agua. Anticipamos que resolveremos el problema el [date of expected resolution in Spanish day-month-year].

Para mas información, por favor póngase en contacto con:

Contacto del sistema de agua: Omar Castro al 805-684-2816 o escribiendo a 1301 Santa Ynez Avenue.

Departamento de Salud de California: 805-566-1326.

Condado de Santa Barbara: (805) 681-5280

Por favor comparta esta información con otros que pueden tomar de esta agua, colocando este aviso en lugares visibles, o remitiéndolo por correo, o entregandolo manualmente. Es de particular interés distribuir este aviso ampliamente si usted lo recibe representando un negocio, un hospital u hogar de infantes u hogar de ancianos o comunidad residencial.

LAST UPDATED – 01/27/04

Date:

UNSAFE WATER ALERT

Carpinteria Valley Water District water is possibly contaminated with [an unknown substance]

DO NOT DRINK YOUR WATER

Failure to follow this advisory could result in illness.

An unknown substance has been added to the drinking water supplied by the Carpinteria Valley Water District due to a recent [intrusion; break-in] at [one of the wells; our pumping plant; storage tank; distribution system; specific facility]. The California Department of Health Services, Santa Barbara County Health Department, and Carpinteria Valley Water District are advising residents of Carpinteria Valley to NOT USE THE TAP WATER FOR DRINKING AND COOKING, HAND WASHING, OR BATHING UNTIL FURTHER NOTICE.

What should I do?

- **DO NOT DRINK YOUR TAP WATER---USE ONLY BOTTLED WATER.** Bottled water should be used for all drinking (including baby formula and juice), brushing teeth, washing dishes, making ice and food preparation **until further notice.**
- **DO NOT TRY AND TREAT THE WATER YOURSELF.** Boiling, freezing, filtering, adding chlorine or other disinfectants, or letting water stand will not make the water safe.
- Potable water is available at the following locations: City Hall at 5775 Carpinteria Avenue and the Water District Office at 1301 Santa Ynez Avenue. Please bring a clean water container (5 gallons maximum capacity).

We will inform you when tests show that the water is safe again. We expect to resolve the problem within [estimated time frame].

For more information call:

Water Utility contact: Charles Hamilton, General Manager, 805-684-2816, 1301 Santa Ynez Avenue
California Department of Health Services at: Kurt Souza, District Engineer, 805-566-1326

Local County Health Department: (805) 681-5280

This notice is being sent to you by Carpinteria Valley Water District California Public Water System ID # 421-0001. Date Distributed:

Please share this information with all other people who receive this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand.

LAST UPDATED – 01/27/04

Date:

BOIL WATER ORDER

Este informe contiene información muy importante sobre su agua potable.
Tradúzcalo o hable con alguien que lo entienda bien.

BOIL YOUR WATER BEFORE USING

Failure to follow this advisory could result in stomach or intestinal illness.

Due to the recent event [e.g., water outage, power outage, flood, fire, earthquake or other emergency situation], the California Department of Health Services in conjunction with the [County Name] County Health Department, and [Water System name] Water System are advising residents of [City, Town, System] to use boiled tap water or bottled water for drinking and cooking purposes as a safety precaution.

DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a boil, **let it boil for one (1) minute**, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking and food preparation **until further notice**. **Boiling kills bacteria and other organisms in the water.**

Optional alternative to include for prolonged situations where it fits.

- **An alternative method of purification for residents that do not have gas or electricity available is to use fresh liquid household bleach (Clorox®, Purex®, etc.). To do so, add 8 drops (or 1/4 teaspoon) of bleach per gallon of clear water or 16 drops (or 1/2 teaspoon) per gallon of cloudy water, mix thoroughly, and allow to stand for 30 minutes before using. A chlorine-like taste and odor will result from this purification procedure and is an indication that adequate disinfection has taken place.**
- Water purification tablets may also be used by following the manufacturer's instructions.
- **Optional:** Potable water is available at the following locations: [List locations]
Please bring a clean water container (5 gallons maximum capacity).

We will inform you when tests show no bacteria and you no longer need to boil your water. We anticipate resolving the problem within [estimated time frame].

For more information call:

Water Utility contact: [Name, title, phone & address of responsible utility representative].
California Department of Health Services – Drinking Water Field Operations Branch- District Office at [(805) 566-1326].
Local Environmental Health Jurisdiction: [Santa Barbara County at (805) 681-5102].

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

LAST UPDATED – 01/14/04

**Carpinteria Valley Water District
Press Release**

Media Contact: Charles Hamilton, Carpinteria Valley Water District

Date:

Water Contamination Emergency

Insert instructions and alerts *here*

LAST UPDATED – 01/14/04



State of California—Health and Human Services Agency
DEPARTMENT OF HEALTH SERVICES



ARNOLD SCHWARZENEGGER
Governor

WATER QUALITY EMERGENCY NOTIFICATION PLAN

Name of Utility: Carpinteria Valley Water District

Physical Location/Address: City of Carpinteria and unincorporated areas of Carpinteria Valley

The following persons have been designated to implement the plan upon notification by the State Department of Health Services that an imminent danger to the health of the water users exists:

Water Utility:		Telephone		
Contact Name & Title	Email Address	Day	Evening	Cell
1. Charles B. Hamilton				
2. Bob Mc Donald				
3. Omar Castro				

The implementation of the plan will be carried out with the following State and County Health Department personnel:

State & County Health Departments:		Telephone	
Contact Name & Title		Day	Evening
1. Kurt Souza, District Engineer California Department of Health Services		(805) 566-1326	
2. Mir Ali, Engineer California Department of Health Services		((805) 566-1326	
3. County Environmental Health Department Local Primacy Agency		(805) 681-5102	

4. If the above personnel cannot be reached, contact:

Office of Emergency Services Warning Center (24 hrs) (800) 852-7550 or (916) 845-8911
When reporting a water quality emergency to the Warning Center, please ask for the California Department of Health Services – Drinking Water Program Duty Officer.

NOTIFICATION PLAN

Attach a written description of the method or combination of methods to be used (radio, television, door-to-door, sound truck, etc.) to notify customers in an emergency. For each section of your plan give an estimate of the time required, necessary personnel, estimated coverage, etc. Consideration must be given to special organizations (such as schools), non-English speaking groups, and outlying water users. Ensure that the notification procedures you describe are practical and that you will be able to actually implement them in the vent of an emergency. Examples of notification plans are attached for large, medium and small communities.

Report prepared by: _____

Signature and Title _____ Date _____

Appendix E
California Statewide Emergency Notification
Plan

PLAN I (Medium Community)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Written Threat Report Form

INSTRUCTIONS

The purpose of this form is to summarize significant information from a written threat received by a drinking water utility. This form should be completed by the WUERM or an individual designated by incident command to evaluate the written threat. The summary information provided in this form is intended to support the threat evaluation process; however, the completed form is not a substitute for the complete written threat, which may contain additional, significant details.

The written threat itself (e.g., the note, letter, e-mail message, etc.) may be considered evidence and thus should be minimally handled (or not handled at all) and placed into a clean plastic bag to preserve any forensic evidence.

Remember, tampering with a drinking water system is a crime under the SDWA Amendments!

SAFETY

A suspicious letter or package could pose a threat in and of itself, so caution should be exercised if such packages are received. The US Postal Service has issued guidance when dealing with suspicious packages (http://www.usps.com/news/2001/press/pr01_1022gsa.htm).

THREAT NOTIFICATION

Name of person receiving the written threat: _____

Person(s) to whom threat was addressed: _____

Date threat received: _____ Time threat received: _____

How was the written threat received?

- | | | |
|--|---|---|
| <input type="checkbox"/> US Postal service | <input type="checkbox"/> Delivery service | <input type="checkbox"/> Courier |
| <input type="checkbox"/> Fax | <input type="checkbox"/> E-mail | <input type="checkbox"/> Hand delivered |
| <input type="checkbox"/> Other _____ | | |

If mailed, is the return address listed? Yes No

If mailed, what is the date and location of the postmark? _____

If delivered, what was the service used (list any tracking numbers)? _____

If Faxed, what is the number of the sending fax? _____

If E-mailed, what is the e-mail address of sender? _____

If hand-delivered, who delivered the message? _____

DETAILS OF THREAT

Has the water already been contaminated? Yes No

Date and time of contaminant introduction known? Yes No

Date and time if known: _____

Location of contaminant introduction known? Yes No

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

Name or type of contaminant known? Yes No

Type of contaminant

- | | | |
|-----------------------------------|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> Chemical | <input type="checkbox"/> Biological | <input type="checkbox"/> Radiological |
|-----------------------------------|-------------------------------------|---------------------------------------|

Specific contaminant name/description: _____

Mode of contaminant introduction known? Yes No

Method of addition: Single dose Over time Other _____

Amount of material: _____

Additional Information: _____

Motive for contamination known? Yes No

- | | | |
|--|--|---|
| <input type="checkbox"/> Retaliation/revenge | <input type="checkbox"/> Political cause | <input type="checkbox"/> Religious doctrine |
| <input type="checkbox"/> Other _____ | | |

Describe motivation: _____

NOTE CHARACTERISTICS

Perpetrator Information:

Stated name: _____

Affiliation: _____

Phone number: _____

Location/address: _____

Condition of paper/envelop:

- | | | |
|--|--|---|
| <input type="checkbox"/> Marked personal | <input type="checkbox"/> Marked confidential | <input type="checkbox"/> Properly addressed |
| <input type="checkbox"/> Neatly typed or written | <input type="checkbox"/> Clean | <input type="checkbox"/> Corrected or marked-up |
| <input type="checkbox"/> Crumpled or wadded up | <input type="checkbox"/> Soiled/stained | <input type="checkbox"/> Torn/tattered |
| <input type="checkbox"/> Other: _____ | | |

How was the note prepared?

- | | | |
|---|--|---|
| <input type="checkbox"/> Handwritten in print | <input type="checkbox"/> Handwritten in script | <input type="checkbox"/> Computer typed |
| <input type="checkbox"/> Machine typed | <input type="checkbox"/> Spliced (e.g., from other typed material) | |
| <input type="checkbox"/> Other: _____ | | |

If handwritten, does writing look familiar? Yes No

Language:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Clear English | <input type="checkbox"/> Poor English |
| <input type="checkbox"/> Another language: _____ | |
| <input type="checkbox"/> Mixed languages: _____ | |

Writing Style

- | | | |
|---------------------------------------|--|-------------------------------------|
| <input type="checkbox"/> Educated | <input type="checkbox"/> Proper grammar | <input type="checkbox"/> Logical |
| <input type="checkbox"/> Uneducated | <input type="checkbox"/> Poor grammar/spelling | <input type="checkbox"/> Incoherent |
| <input type="checkbox"/> Use of slang | <input type="checkbox"/> Obscene | |
| <input type="checkbox"/> Other: _____ | | |

Writing Tone

- | | | |
|--|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> Clear | <input type="checkbox"/> Direct | <input type="checkbox"/> Sincere |
| <input type="checkbox"/> Condescending | <input type="checkbox"/> Accusatory | <input type="checkbox"/> Angry |
| <input type="checkbox"/> Agitated | <input type="checkbox"/> Nervous | <input type="checkbox"/> Irrational |
| <input type="checkbox"/> Other: _____ | | |

SIGNOFF

Name of individual who received the threat:

Print name _____

Signature _____ Date/Time: _____

Name of person completing form (if different from written threat recipient):

Print name _____

Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.6 - Interim Final December 2003

IT Incident Response and Reporting Checklist

Date _____ Time _____

Status:

- Site Under Attack
- Past Incident
- Repeated Incidents
- Unresolved

Contact Information:

Name _____
 Title _____
 Utility _____
 Direct-dial phone _____
 E-mail _____
 Location / Site involved _____
 Street Address _____
 City _____
 State/ZIP _____

1. What is the nature of the emergency? (Check all that apply)

- Denial of Service attack
- Unauthorized electronic monitoring
- Network intrusion
- Insider attack
- Probe/scan
- Malicious code (virus, Trojan horse, worm)
- Website defacement
- Other (explain)

2. Is there just one, or more than one, incident involved simultaneously?

3. Is this a single or multi-site incident?

4. What is the extent of penetration / infection?

5. Estimate the duration of attack

6. What is the entry point of the incident (network, the phone line, etc)?

7. What resources will be required to deal with this incident? (A Computer Emergency Response Team with a forensic expert might be needed immediately to analyze a major incident versus simply disconnecting the compromised equipment from the Internet for later analysis)

8. What is the source of the attack?

9. What is the target of the attack?

10. Impact of attack

11. Has there been a loss or compromise of business data?

12. What type of data has already been compromised or is at risk?

13. How critical is this data?

14. Affect on customers (Customers might be sensitive, based on the intensity level of the intellectual property loss. It could be a violation of privacy legislation versus a serious theft of software property, critically affecting a customer's enterprise-level business)

15. Estimate system downtime

16. Document damage to systems

17. Estimate financial loss

18. Has there been damage to the integrity or delivery of water or services?

19. Describe

20. Other utility systems affected

21. Severity of attack (include financial loss)

Low Medium High

22. Did the attacker gain root, administrative or system access?

23. How was the incident detected?

- Intrusion detection system or audit logs
- External complaint
- User report
- Other

24. What are the known symptoms?

25. What utility areas are affected?

26. What systems are affected?

Gather as much information as possible about the systems, including suspected systems. For example:

- Operating system
- Platform
- Applications
- IP addresses
- Associated or suspected user IDs
- Most recent changes applied
- Other related items

27. Are the backups of the perceived affected systems available (provide all of the information regarding online, onsite, or offsite backups)?

See www.cert.org/tech_tips/intruder_detection_checklist.html for more information on detecting an intruder.

Maintaining Crime Scene Integrity*

Security breaches and suspicious activity need to be evaluated to determine if the actions are a result of “normal” activity, such as a construction crew working in the area, or the result of activity that could result in an intentional threat to the safety or security of the facility and its operations.

- As soon as **you** recognize that the threat is/was intentional and particularly if the actions of the threatening individuals are suspected to have been successful, **you** must notify facility management ([Security Director]/[General manager]).
- The ([SD]/[GM]) should immediately notify the local law enforcement agency responsible for criminal investigation at the facility as soon as they have verified a credible threat.
- No personnel** from CVWD facility should enter the area where any possible criminal activity might have occurred so as not to disturb the area. All signs of inappropriate entrance to the facility and any physical activity of the suspects must be available for evaluation by law enforcement without any disturbance.
- CVWD facility staff** and/or **law enforcement** may collect water samples prior to the collection of physical evidence.
- CVWD facility staff** should collect samples outside of the boundaries of the suspected crime scene, if possible, to avoid concerns about the integrity of the crime scene.
- The **CVWD facility [GM]** should pre-designate a qualified laboratory that can assist in analysis, if the sample is suspected to contain water that has been intentionally contaminated, to insure chain of evidence custody. Law enforcement may require the collection of an additional sample set to be analyzed by their designated lab.
- CVWD facility staff** should be aware of possible physical evidence of contamination that might include discarded PPE, equipment (such as pumps and hoses), or containers with residual material. Special care should be taken by facility personnel to avoid moving or disturbing any potential physical evidence.
- CVWD facility staff** should notify [SD]/[GM] of any obvious physical evidence of contamination.
- CVWD facility staff** should not handle any physical evidence except at the direction of the appropriate law enforcement agency.
- Any photographs or videos taken by **CVWD facility staff** should be reported to law enforcement for proper handling to ensure integrity of the evidence.

The **CVWD [SD]/[GM]** if appropriate, should clearly designate the area of suspected criminal activity to assure that facility personnel do not inadvertently enter the area and disturb evidence.

The **CVWD [SD]/[GM]** can instruct security personnel to stand by and/or lock doors/gates, and/or string tape or rope to restrict entrance, as appropriate.

The **[SD]/[GM]** should balance the needs of both the public health concerns and the concerns of possible criminal activity in their decisions to protect the crime scene.

* Adapted from EPA Response Protocol Toolbox: Planning for and Responding to Drinking Water Contamination Threats and Incidents Module 3: Site Characterization and Sampling Guide Section 3.6.

Phone Threat Report Form

INSTRUCTIONS

This form is intended to be used by utility staff that regularly answer phone calls from the public (e.g., call center operators). The purpose of this form is to help these staff capture as much information from a threatening phone call while the caller is on the line. It is important that the operator keep the caller on the line as long as possible in order to collect additional information. Since this form will be used during the call, it is important that operators become familiar with the content of the form. The sections of the form are organized with the information that should be collected during the call at the front of the form (i.e., Basic Call Information and Details of Threat) and information that can be completed immediately following the call at the end of the form (i.e., the description of the caller). The information collected on this form will be critical to the threat evaluation process.

Remember, tampering with a drinking water system is a crime under the SDWA Amendments

THREAT NOTIFICATION

Name of person receiving the call: _____

Date phone call received: _____ Time phone call received: _____

Time phone call ended: _____ Duration of phone call: _____

Originating number: _____ Originating name: _____

*If the number/name is not displayed on the caller ID, press *57 (or call trace) at the end of the call and inform law enforcement that the phone company may have trace information.*

Is the connection clear? Yes No

Could call be from a wireless phone? Yes No

DETAILS OF THREAT

Has the water already been contaminated? Yes No

Date and time of contaminant introduction known? Yes No

Date and time if known: _____

Location of contaminant introduction known? Yes No

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

Name or type of contaminant known? Yes No

Type of contaminant

- Chemical Biological Radiological

Specific contaminant name/description: _____

Mode of contaminant introduction known? Yes No

Method of addition: Single dose Over time Other _____

Amount of material: _____

Additional Information: _____

Motive for contamination known? Yes No

- Retaliation/revenge Political cause Religious doctrine

Other _____

Describe motivation: _____

CALLER INFORMATION

Basic Information:

Stated name: _____
 Affiliation: _____
 Phone number: _____
 Location/address: _____

Caller's Voice:

Did the voice sound disguised or altered? Yes No
 Did the call sound like a recording? Yes No
 Did the voice sound? Male / Female Young / Old
 Did the voice sound familiar? Yes No
 If 'Yes,' who did it sound like? _____
 Did the caller have an accent? Yes No
 If 'Yes,' what nationality? _____

How did the caller sound or speak?
 Educated Well spoken Illiterate
 Irrational Obscene Incoherent
 Reading a script Other _____

What was the caller's tone of voice?
 Calm Angry Lispering Stuttering/broken
 Excited Nervous Sincere Insincere
 Slow Rapid Normal Slurred
 Soft Loud Nasal Clearing throat
 Laughing Crying Clear Deep breathing
 Deep High Raspy Cracking
 Other _____

Were there background noises coming from the caller's end?
 Silence
 Voices describe _____
 Children describe _____
 Animals describe _____
 Factory sounds describe _____
 Office sounds describe _____
 Music describe _____
 Traffic/street sounds describe _____
 Airplanes describe _____
 Trains describe _____
 Ships or large boats describe _____
 Other: _____

SIGNOFF

Name of call recipient:
 Print name _____
 Signature _____ Date/Time: _____
 Name of person completing form (if different from call recipient):
 Print name _____
 Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.5 – Interim Final December 2003

Public Health Information Report Form Instructions

The purpose of this form is to summarize significant information about a public health episode that could be linked to contaminated water. This form should be completed by the WUERM or an individual designated by incident command. The information compiled in this form is intended to support the threat evaluation process. In the case of a threat warning due to a report from public health, it is likely that the public health agency will assume incident command during the investigation. The drinking water utility will likely play a support role during the investigation, specifically to help determine whether or not water might be the cause.

PUBLIC HEALTH NOTIFICATION

Date and Time of notification: _____
 Name of person who received the notification: _____

Contact information for individual providing the notification

Full Name: _____
 Title: _____
 Organization: _____
 Address: _____
 Day-time phone: _____
 Evening phone: _____
 Fax Number: _____
 E-mail address: _____

Why is this person contacting the drinking water utility? _____

Has the state or local public health agency been notified? Yes No

If "No," the appropriate public health official should be immediately notified.

DESCRIPTION OF PUBLIC HEALTH EPISODE

Nature of public health episode:

Unusual disease (mild) Unusual disease (severe) Death
 Other: _____

Symptoms:

Diarrhea Vomiting/nausea Flu-like symptoms
 Fever Headache Breathing difficulty
 Other: _____

Describe symptoms: _____

Causative Agent: Known Suspected Unknown

If known or suspected, provide additional detail below

Chemical Biological Radiological

Describe _____

Estimate of time between exposure and onset of symptoms: _____

Exposed Individuals:

Location where exposure is thought to have occurred

- Residence Work School
 Restaurant Shopping mall Social gathering
 Other: _____

Additional notes on location of exposure: _____

Collect addresses for specific locations where exposure is thought to have occurred.

Is the pattern of exposure clustered in a specific area? Yes No

Extent of area

- Single building Complex (several buildings) City block
 Neighborhood Cluster of neighborhoods Large section of city
 Other: _____

Additional notes on extent of area: _____

Do the exposed individuals represent a disproportionate number of:

- Immune compromised Elderly Children
 Infants Pregnant women Women
 Other: _____
 None, no specific groups dominate the makeup of exposed individuals

EVALUATION OF LINK TO WATER

Are the symptoms consistent with typical waterborne diseases, such as gastrointestinal disease, vomiting, or diarrhea? Yes No

Does the area of exposure coincide with a specific area of the system, such as a pressure zone or area feed by a specific plant? Yes No

Were there any consumer complaints within the affected area? Yes No

Were there any unusual water quality data within the affected area? Yes No

Were there any process upsets or operational changes? Yes No

Was there any construction/maintenance within the affected area? Yes No

Were there any security incidents within the affected area? Yes No

SIGNOFF

Name of person completing form:

Print name _____
 Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.8 – Interim Final December 2003

Security Incident Report Form**INSTRUCTIONS**

The purpose of this form is to help organize information about a security incident, typically a security breach, which may be related to a water contamination threat. The individual who discovered the security incident, such as a security supervisor, the WUERM, or another designated individual may complete this form. This form is intended to summarize information about a security breach that may be relevant to the threat evaluation process. This form should be completed for each location where a security incident was discovered.

DISCOVERY OF SECURITY INCIDENT

Date/Time security incident discovered: _____

Name of person who discovered security incident: _____

Mode of discovery:

- Alarm (building) Alarm (gate/fence) Alarm (access hatch)
 Video surveillance Utility staff discovery Citizen discovery
 Suspect confession Law enforcement discovery
 Other _____

Did anyone observe the security incident as it occurred? Yes No

If "Yes", complete the 'Witness Account Report Form'

SITE DESCRIPTION

Site Name: _____

Type of facility

- Source water Treatment plant Pump station
 Ground storage tank Elevated storage tank Finished water reservoir
 Distribution main Hydrant Service connection
 Other _____

Address: _____

Additional Site Information: _____

BACKGROUND INFORMATION

Have the following "normal activities" been investigated as potential causes of the security incident?

- Alarms with known and harmless causes Utility staff inspections
 Routine water quality sampling Construction or maintenance
 Contractor activity Other _____

Was this site recently visited prior to the security incident? Yes No

If "Yes," provide additional detail below

Date and time of previous visit: _____

Name of individual who visited the site: _____

Additional Information: _____

Has this location been the site of previous security incidents? Yes No

If "Yes," provide additional detail below

Date and time of most recent security incident: _____

Description of incident: _____

What were the results of the threat evaluation for this incident?

- 'Possible' 'Credible' 'Confirmed'

Have security incidents occurred at other locations recently? Yes No

If "Yes", complete additional 'Security Incident Reports' (Appendix 8.3) for each site

Name of 1st additional site: _____

Name of 2nd additional site: _____

Name of 3rd additional site: _____

SECURITY INCIDENT DETAILS

Was there an alarm(s) associated with the security incident? Yes No
If "Yes," provide additional detail below
 Are there sequential alarms (e.g., alarm on a gate and a hatch)? Yes No
 Date and time of alarm(s): _____
 Describe alarm(s): _____

Is video surveillance available from the site of the security incident? Yes No
If "Yes," provide additional detail below
 Date and time of video surveillance: _____
 Describe surveillance: _____

Unusual equipment found at the site and time of discovery of the security incident:
 Discarded PPE (e.g., gloves, masks) Empty containers (e.g., bottles, drums)
 Tools (e.g., wrenches, bolt cutters) Hardware (e.g., valves, pipe)
 Lab equipment (e.g., beakers, tubing) Pumps or hoses
 None Other _____
 Describe equipment: _____

Unusual vehicles found at the site and time of discovery of the security incident:
 Car/sedan SUV Pickup truck
 Flatbed truck Construction vehicle None
 Other _____
 Describe vehicles (including make/model/year/color, license plate #, and logos or markings): _____

Signs of tampering at the site and time of discovery of the security incident:
 Cut locks/fences Open/damaged gates, doors, or windows
 Open/damaged access hatches Missing/damaged equipment
 Facility in disarray None
 Other _____
 Are there signs of sequential intrusion (e.g., locks removed from a gate and hatch)? Yes No
 Describe signs of tampering: _____

Signs of hazard at the site and time of discovery of the security incident:
 Unexplained or unusual odors Unexplained dead animals
 Unexplained dead or stressed vegetation Unexplained liquids
 Unexplained clouds or vapors None
 Other _____
 Describe signs of hazard: _____

SIGNOFF

Name of person responsible for documenting the security incident:
 Print name _____
 Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.3 – Interim Final December 2003

SUSPECT DESCRIPTION FORM

GENERAL APPEARANCE

CLOTHING

Gender:
 Male
 Female

Color/Type:

Layered Shirts/Blouse

Race:
 White
 Black
 Middle Eastern

Cap/Hat

Hispanic
 Asian
 Native American

Coat/Jacket

Other _____

Hair:
 Color
 Style
 Texture
 Sideburns

Tie

Pants

Eyes:
 Color
 Shape
 Glasses (type)

Shoes

Stockings

Physical Characteristics:

Age
 Height
 Weight
 Build

Gloves

Jewelry

Distinguishing Marks (describe):

Scars
 Tattoos
 Gang Insignia

Bag/Backpack
 Purse/Briefcase

Other:
 Left Handed / Right Handed

SUSPECT Demeanor

- Apologetic
- Calm
- Belligerent
- Angry
- Threatening
- Nervous
- Confused

Distinguishing Traits

- Speech
- Accent
- Gait / Limp

Facial Characteristics

Skin:
Color
Texture

Describe shape of:

- Mouth
- Lips
- Ears
- Cheeks
(full or sunken)
- Nose
- Neck
- Eyes
- Eyebrows

Presence of:

- Adam's Apple
- Chin clefts
- Wrinkles

Hair:

- Mustache
- Beard
- Other

Describe any:

- Facial piercing
- Ear piercing

WEAPON (describe if any)

- Handgun
- Long gun
- Knife

Direction of Escape

What did the suspect say?

VEHICLE

- Color
- Make
- Model
- Body Style
- Damage / Rust
- Antenna
- Bumper Sticker
- Wheel Covers

License Number _____

BOMB THREAT CHECKLIST

Be Calm and Courteous

Give a co-worker a signal to "listen in"

Date: _____ Time call started: _____
 _____ Time call ended: _____

Check call display for phone number (if available)

EXACT WORDING OF BOMB THREAT:

What can you tell me?

CALLER'S VOICE

- Male
- Female

When is the bomb going to explode?

- Old (Age?) _____
- Young (Age?) _____

What kind of bomb is it?

- Calm
- Excited

Where is the bomb right now?

- Soft
- Loud

What does the bomb look like?

- Angry
- Cracking Voice

What will cause the bomb to explode?

- Laughter
- Crying

Did you place the bomb?

- Normal
- Disguised

Why?

- High pitched
- Deep

What is your name?

REMARKS:

- Nasal
- Slurred

- Distinct
- Ragged

- Rapid
- Slow

- Raspy
- Stutter

- Lisp
- Heavy Breather

- Clearing Throat
- Intoxicated

- Pleasant
- Whisper

- Familiar (who?) _____
- _Accent (type?) _____

FAMILIARITY WITH FACILITY

- Much
- Some
- None

BACKGROUND SOUNDS

- Street
- Party Sounds

- Office Noises
- Train

- Voices
- Airplane

- PA System
- Animals

- Local Music
- Static on line

- Long Distance
- Motors

- Bells
- Whistles

- Factory Machinery
- Crockery

- Household sounds
- Bedlam

- ___Chanting
- ___Other

Inform the caller that the building is occupied and the detonation of a bomb could result in death or serious injury to many innocent people.

BOMB THREAT LANGUAGE

- Well Spoken
- Incoherent

- Foul
- Irrational

- Taped
- Deliberate

- Abusive
- Righteous

- Message read by threat maker

Threat Evaluation Worksheet

INSTRUCTIONS

The purpose of this worksheet is to help organize information about a contamination threat warning that would be used during the Threat Evaluation Process. The individual responsible for conducting the Threat Evaluation (e.g., the WUERM) should complete this worksheet. The worksheet is generic to accommodate information from different types of threat warnings; thus, there will likely be information that is unavailable or not immediately available. Other forms in the Appendices are provided to augment the information in this worksheet.

THREAT WARNING INFORMATION

Date/Time threat warning discovered: _____

Name of person who discovered threat warning: _____

Type of threat warning:

- Security breach
- Witness account
- Phone threat
- Written threat
- Law enforcement
- Unusual water quality
- News media
- Consumer complaints
- Public health notification
- Other _____

Identity of the contaminant: Known Suspected Unknown

If known or suspected, provide additional detail below

- Chemical
- Biological
- Radiological

Describe _____

Time of contamination: Known Estimated Unknown

If known or estimated, provide additional detail below

Date and time of contamination: _____

Additional Information: _____

Mode of contamination: Known Suspected Unknown

If known or suspected, provide additional detail below

Method of addition: Single dose Over time Other _____

Amount of material: _____

Additional Information: _____

Site of contamination: Known Suspected Unknown

If known or suspected, provide additional detail below

Number of sites: _____

Provide the following information for each site.

Site #1

Site Name: _____

Type of facility

- Source water
- Treatment plant
- Pump station
- Ground storage tank
- Elevated storage tank
- Finished water reservoir
- Distribution main
- Hydrant
- Service connection
- Other _____

Address: _____

Additional Site Information: _____

Site #2

Site Name: _____

Type of facility

- Source water
- Treatment plant
- Pump station
- Ground storage tank
- Elevated storage tank
- Finished water reservoir
- Distribution main
- Hydrant
- Service connection
- Other _____

Address: _____

Additional Site Information: _____

Site #3

Site Name: _____

Type of facility

- Source water
- Treatment plant
- Pump station
- Ground storage tank
- Elevated storage tank
- Finished water reservoir
- Distribution main
- Hydrant
- Service connection
- Other _____

Address: _____

Additional Site Information: _____

ADDITIONAL INFORMATION

Has there been a breach of security at the suspected site? Yes No

If "Yes", review the completed 'Security Incident Report'

Are there any witness accounts of the suspected incident? Yes No

If "Yes", review the completed 'Witness Account Report'

Was the threat made verbally over the phone? Yes No

If "Yes", review the completed 'Phone Threat Report'

Was a written threat received? Yes No

If "Yes", review the completed 'Written Threat Report'

Are there unusual water quality data or consumer complaints? Yes No

If "Yes", review the completed 'Water Quality/Consumer Complaint Report'

Are there unusual symptoms or disease in the population? Yes No

If "Yes", review the completed 'Public Health Report'

Is a 'Site Characterization Report' available? Yes No

If "Yes", review the completed 'Site Characterization Report'

Are results of sample analysis available? Yes No

If "Yes", review the analytical results report, including appropriate QA/QC data

Is a 'Contaminant Identification Report' available? Yes No

If "Yes", review the completed 'Sample Analysis Report'

Is there relevant information available from external sources? Yes No

Check all that apply

- Local law enforcement
- FBI
- DW primacy agency
- Public health agency
- Hospitals / 911 call centers
- US EPA / Water ISAC
- Media reports
- Homeland security alerts
- Neighboring utilities
- Other _____

Point of Contact: _____

Summary of key information from external sources (provide detail in attachments as necessary):

THREAT EVALUATION

Has normal activity been investigated as the cause of the threat warning? Yes No

Normal activities to consider

- Utility staff inspections
- Routine water quality sampling
- Construction or maintenance
- Contractor activity
- Operational changes
- Water quality changes with a known cause
- Other _____

Is the threat 'possible'? Yes No

Summarize the basis for this determination: _____

Response to a 'possible' threat:

- None Site characterization Isolation/containment
 Increased monitoring/security Other _____

Is the threat 'credible'? Yes No

Summarize the basis for this determination: _____

Response to a 'credible' threat:

- Sample analysis Site characterization Isolation/containment
 Partial EOC activation Public notification Provide alternate water supply
 Other _____

Has a contamination incident been confirmed? Yes No

Summarize the basis for this determination: _____

Response to a confirmed incident:

- Sample analysis Site characterization Isolation/containment
 Full EOC activation Public notification Provide alternate water supply
 Initiate remediation and recovery
 Other _____

How do other organizations characterize the threat?

Organization	Evaluation	Comment
<input type="checkbox"/> Local Law Enforcement	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> FBI	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> Public Health Agency	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> Drinking Water Primacy Agency	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> Other	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> Other	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	

SIGNOFF

Name of person responsible for threat evaluation:

Print name _____
 Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.2 – Interim Final December 2003

Water Quality/Consumer Complaint Report Form

INSTRUCTIONS - This form is provided to guide the individual responsible for evaluating unusual water quality data or consumer complaints. It is designed to prompt the analyst to consider various factors or information when evaluating the unusual data. The actual data used in this analysis should be compiled separately and appended to this form. The form can be used to support the threat evaluation due to a threat warning from unusual water quality or consumer complaints, or another type of threat warning in which water quality data or consumer complaints are used to support the evaluation. Note that in this form, water quality refers to both specific water quality parameters and the general aesthetic characteristics of the water that might result in consumer complaints.

Threat warning is based on: Water quality Consumer complaints Other

What is the water quality parameter or complaint under consideration?

Are unusual consumer complaints corroborated by unusual water quality data?

Is the unusual water quality indicative of a particular contaminant of concern? For example, is the color, order, or taste associated with a particular contaminant?

Are consumers in the affected area experiencing any unusual health symptoms?

What is 'typical' for consumer complaints for the current season and water quality?

- Number of complaints.
- Nature of complaints.
- Clustering of complaints

What is considered to be 'normal' water quality (i.e., what is the baseline water quality data or level of consumer complaints)?

What is reliability of the method or instrumentation used for the water quality analysis?

- Are standards and reagents OK?
- Is the method/instrument functioning properly?

Based on recent data, does the unusual water quality appear to be part of a gradual trend (i.e., occurring over several days or longer)?

Are the unusual water quality observations sporadic over a wide area, or are they clustered in a particular area?

What is the extent of the area? Pressure zone. Neighborhood. City block. Street. Building.

If the unusual condition isolated to a specific area:

- Is this area being supplied by a particular plant or source water?
- Have there been any operational changes at the plant or in the affected area of the system?
- Has there been any flushing or distribution system maintenance in the affected area?
- Has there been any repair or construction in the area that could impact water quality?

SIGNOFF

Name of person completing form:

Print name _____
 Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.7 – Interim Final December 2003

Witness Account Report Form

INSTRUCTIONS

The purpose of this form is to document the observations of a witness to activities that might be considered an incident warning. The individual interviewing the witness, or potentially the witness, should complete this form. This may be the WUERM or an individual designated by incident command to perform the interview. If law enforcement is conducting the interview (which may often be the case), then this form may serve as a prompt for "utility relevant information" that should be pursued during the interview. This form is intended to consolidate the details of the witness account that may be relevant to the threat evaluation process. This form should be completed for each witness that is interviewed.

BASIC INFORMATION

Date/Time of interview: _____
 Name of person interviewing the witness: _____
Witness contact information
 Full Name: _____
 Address: _____
 Day-time phone: _____
 Evening phone: _____
 E-mail address: _____
 Reason the witness was in the vicinity of the suspicious activity: _____

WITNESS ACCOUNT

Date/Time of activity: _____
Location of activity: _____
 Site Name: _____
 Type of facility
 Source water Treatment plant Pump station
 Ground storage tank Elevated storage tank Finished water reservoir
 Distribution main Hydrant Service connection
 Other _____
 Address: _____
 Additional Site Information: _____

Type of activity
 Trespassing Vandalism Breaking and entering
 Theft Tampering Surveillance
 Other _____
 Additional description of the activity _____

Description of suspects

Were suspects present at the site? Yes No
 How many suspects were present? _____
 Describe each suspect's appearance:

Suspect #	Sex	Race	Hair color	Clothing	Voice
1					
2					
3					
4					
5					
6					

Where any of the suspects wearing uniforms? Yes No
 If "Yes," describe the uniform(s): _____

Describe any other unusual characteristics of the suspects: _____

Did any of the suspects notice the witness? Yes No
 If "Yes," how did they respond: _____

Vehicles at the site

Were vehicles present at the site? Yes No
 Did the vehicles appear to belong to the suspects? Yes No
 How many vehicles were present? _____

Describe each vehicle:

Vehicle #	Type	Color	Make	Model	License plate
1					
2					
3					
4					

Where there any logos or distinguishing markings on the vehicles? Yes No
 If "Yes," describe: _____

Provide any additional detail about the vehicles and how they were used (if at all): _____

Equipment at the site

Was any unusual equipment present at the site? Yes No
 Explosive or incendiary devices Firearms
 PPE (e.g., gloves, masks) Containers (e.g., bottles, drums)
 Tools (e.g., wrenches, bolt cutters) Hardware (e.g., valves, pipe, hoses)
 Lab equipment (e.g., beakers, tubing) Pumps and related equipment
 Other _____
 Describe the equipment and how it was being used by the suspects (if at all): _____

Unusual conditions at the site

Were there any unusual conditions at the site? Yes No
 Explosions or fires Fogs or vapors Unusual odors
 Dead/stressed vegetation Dead animals Unusual noises
 Other _____
 Describe the site conditions: _____

Additional observations

Describe any additional details from the witness account: _____

SIGNOFF

Name of interviewer:
 Print name _____
 Signature _____ Date/Time: _____
 Name of witness:
 Print name _____
 Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.4 – Interim Final December 2003

Damage Assessment Form

INITIAL DAMAGE ASSESSMENT		DATE	PAGE OF
SITE ID	LOCATION <i>(Use map location, address, etc.)</i>		
DESCRIPTION OF DAMAGE			
IMPACT		COST ESTIMATE	
SITE ID	LOCATION <i>(Use map location, address, etc.)</i>		
DESCRIPTION OF DAMAGE			
IMPACT		COST ESTIMATE	
SITE ID	LOCATION <i>(Use map location, address, etc.)</i>		
DESCRIPTION OF DAMAGE			
IMPACT		COST ESTIMATE	
NAME OF INSPECTOR	DEPARTMENT	PHONE	

Appendix G
ERP Certification Form

CERTIFICATION OF COMPLETION

OF AN EMERGENCY RESPONSE PLAN

Public Water System ID number: 421-0001
System Name: Carpinteria Valley Water District
City where system is located: Carpinteria, CA
County Santa Barbara
State : California

Printed Name of Person Authorized to Sign this Certification on Behalf of the System: Robert Mc Donald

Title: District Engineer
Address : 1301 Santa Ynez
City: Carpinteria
State and ZIP Code: CA, 93013
Phone: 805-684-2816 Fax: 805-684-3170 Email: Bob@cvwd.net

I certify to the Administrator of the U.S. Environmental Protection Agency that this community water system has completed an Emergency Response Plan that complies with Section 1433(b) of the Safe Drinking Water Act as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV — Drinking Water Security and Safety). I further certify that this document was prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information (Safe Drinking Water Act (42 U.S.C.300f *et seq.*)).

The emergency response plan that this community water system completed incorporates the results of the vulnerability assessment completed for the system and includes “plans, procedures, and identification of equipment that can be implemented or utilized in the event of a terrorist or other intentional attack ” on this community water system. The emergency response plan also includes “actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water provided to communities and individuals.”

This CWS has coordinated, to the extent possible, with existing Local Emergency Planning Committees established under the Emergency Planning and Community Right-to- Know Act (42 U.S.C.11001 *et seq.*) when preparing this emergency response plan.

Signed: _____ Date: _____
Primary contact person that EPA can call if there are questions about this Certification:
Name: _____

Address (if different than that of the Authorized Representative): _____

Phone: _____

Email Address: _____

Alternate Contact Person:

Name: _____

Address (if different than that of the Authorized Representative): _____

Source: EPA Small-Medium ERP Guidance 2004

Appendix H

California DWR UWMP Review for Completeness Forms

**2005 Urban Water Management Plan "Review for Completeness" Form
Carpinteria Valley Water District**

Coordination with Appropriate Agencies (Water Code § 10620 (d)(1)(2))

- Yes
 Participated in area, regional, watershed or basin wide plan _____ Reference & Page Number
 Name of plan _____ Lead Agency _____
 Describe the coordination of the plan preparation and anticipated benefits. _____ Reference & Page Number

Table 1 Coordination with Appropriate Agencies							
	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not Involved / No Information
Central Coast Water Authority		X			X	X	
Cachuma Operations & Maintenance Board				X	X	X	
United States Bureau of Reclamation					X		
City Of Carpinteria				X	X	X	
Montecito Water District					X	X	
Santa Barabara County Water Agency		X			X	X	
Santa Barbara County P & D				X	X	X	
General Public			X			X	

Describe resource maximization / import minimization plan (Water Code §10620 (f))

- Describe how water management tools / options maximize resources & minimize need to import water _____ Reference & Page Number

Plan Updated in Years Ending in Five and Zero (Water Code § 10621(a))

- Date updated and adopted plan received _____ (enter date) _____ Reference & Page Number

City and County Notification and Participation (Water Code § 10621(b))

- Notify any city or county within service area of UWMP of plan review & revision _____ Reference & Page Number
 Consult and obtain comments from cities and counties within service area _____ Reference & Page Number

Service Area Information Water Code § 10631 (a))

- Include current and projected population _____ Reference & Page Number
 Population projections were based on data from state, regional or local agency _____ Reference & Page Number

Table 2 Population - Current and Projected						
	2005	2010	2015	2020	2025	2030 - opt
Service Area Population	18,500	20,600	21,150	21,700	22,300	22,900

- Describe climate characteristics that affect water management _____ Reference & Page Number
 Describe other demographic factors affecting water management _____ Reference & Page Number

Table 3 Climate						
	January	February	March	April	May	June
Standard Average ETo	1.67	2.24	3.43	4.94	4.99	5.24
Average Rainfall	4.28	4.49	3.42	1.52	0.43	0.09
Average Temperature	54.3	55	56.3	58	60.6	62.8

Table 3 (continued) Climate							
	July	August	September	October	November	December	Annual
Average ETo	5.29	5.33	3.89	3.51	2.22	1.86	44.6
Average Rainfall	0.01	0.07	0.35	0.58	2.08	2.87	20.2
Average Temperature	65.2	66.1	65.3	61.9	57.7	54.1	59.8

Water Sources		(Water Code § 10631 (b))	
<input type="checkbox"/>	Identify existing and planned water supply sour	2-1	Reference & Page Number
<input type="checkbox"/>	Provide current water supply quantities	2-1	Reference & Page Number
<input type="checkbox"/>	Provide planned water supply quantities	2-1	Reference & Page Number

Table 4 Current and Planned Water Supplies - AFY						
Water Supply Sources	2005	2010	2015	2020	2025	2030 - opt
Water purchased from:						
U.S. Bureau of Reclamation	2,813	2,813	2,240	2,240	2,240	2,240
Department of Water Resources	2,200	1,700	1,700	1,700	1,700	1,700
CVWD produced groundwater	2,500	2,500	2,500	2,500	2,500	2,500
Supplier surface diversions	0	0	0	0	0	0
Transfers in or out	0	0	0	0	0	0
Exchanges in or out	0	0	0	0	0	0
Recycled Water (projected use)	0	0	0	0	0	0
Desalination	0	0	0	0	0	0
Total	7,513	7,013	6,440	6,440	6,440	6,440

If Groundwater identified as existing or planned source		(Water Code §10631 (b)(1-4))	
<input type="checkbox"/>	Has management plan	_____	Reference & Page Number
<input type="checkbox"/>	Attached management plan (b)(1)	_____	Reference & Page Number
<input type="checkbox"/>	Description of basin(s) (b)(2)	_____	Reference & Page Number
<input type="checkbox"/>	Basin is adjudicated	_____	Reference & Page Number
<input type="checkbox"/>	If adjudicated, attached order or decree (b)(2)	_____	Reference & Page Number
<input type="checkbox"/>	Quantified amount of legal pumping right (b)(2)	_____	Reference & Page Number

Table 5 Groundwater Pumping Rights - AF Year	
Basin Name	Pumping Right - AFY
Non adjudicated safe yield (Carpinteria)	4500-5500
Total	0

<input type="checkbox"/>	DWR identified, or projected to be, in overdraft (b)(2)	_____	Reference & Page Number
<input type="checkbox"/>	Plan to eliminate overdraft (b)(2)	_____	Reference & Page Number
<input type="checkbox"/>	Analysis of location, amount & sufficiency, last five years (b)(3)	_____	Reference & Page Number
<input type="checkbox"/>	Analysis of location & amount projected, 20 years (b)(4)	_____	Reference & Page Number

Table 6 Amount of Groundwater pumped - AFY				
Basin Name (s)	2000	2001	2002	2004
Carpinteria	1210	84	535	446
% of Total Water Supply	29.00%	2.00%	15.00%	11.00%
				26.00%

Table 7 Amount of Groundwater projected to be pumped - AFY					
Basin Name(s)	2010	2015	2020	2025	2030 - opt
Carpinteria	2,000	2,000	2,000	2,000	2,000
% of Total Water Supply	28.5%	31.1%	31.1%	31.1%	31.1%

Reliability of Supply

(Water Code §10631 (c) (1-3))

Describes the reliability of the water supply and vulnerability to seasonal or climatic shortage _____ Reference & Page Number

Table 8 Supply Reliability - AF Year					
Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
6,360	5,890	6,360	6,360	6,360	5,980
% of Normal	92.6%	100.0%	100.0%	100.0%	94.0%

Table 9 Basis of Water Year Data			
Water Year Type	Cachuma	GrndWat	StateWat
Average Water Year	avg 1941-2005	avg 1995-2005	avg 1922-1994
Single-Dry Water Year	1976-77	1976-1977	1977
Multiple-Dry Water Years	1988-1992	1988-1992	1931-1934

20% decline DWR Reliability Year 4 _____ Reference & Page Number
 _____ Reference & Page Number
 _____ Reference & Page Number

Water Sources Not Available on a Consistent Basis

(Water Code §10631 (c))

Describe the reliability of the water supply due to seasonal or climatic shortages _____ Reference & Page Number
 Describe the vulnerability of the water supply to seasonal or climatic shortages _____ Reference & Page Number
 No unreliable sources _____ Reference & Page Number

Table 10 Factors resulting in inconsistency of supply				
Name of supply	Legal	Environmental	Water Quality	Climatic
Cachuma Project	x	x		x
Local Groundwater			x	
State Water Project				x

Describe plans to supplement or replace inconsistent sources with alternative sources or DMMs _____ Reference & Page Number
 No inconsistent sources _____ Reference & Page Number

Transfer or Exchange Opportunities

(Water Code §10631 (d))

Describe short term and long term exchange or transfer opportunities _____ Reference & Page Number
 No transfer opportunities _____ Reference & Page Number

Table 11 Transfer and Exchange Opportunities - AF Year					
Transfer Agency	Transfer or Exchange	Short term	Proposed Quantities	Long term	Proposed Quantities
CCWA	Transfer	yes	2,000	no	-
Total			2,000		0

Water Use Provisions

(Water Code §10631 (e)(1)(2))

- Quantify past water use by sector 4-2 Reference & Page Number
- Quantify current water use by sector 4-2 Reference & Page Number
- Project future water use by sector 4-2 Reference & Page Number

TABLE 12 - Past, Current and Projected Water Deliveries

Water Use Sectors	2000				2005				2010			
	metered		unmetered		metered		unmetered		metered		unmetered	
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	2,925	715			2,995	1,016			3,065	1,066		
Multi-family	300	988			308	500			330	550		
Commercial	212	385			216	368			220	384		
Industrial	69	124			64	116			64	116		
Institutional/gov	56	113			56	121			56	121		
Landscape	0	0			0	0			0	0		
Agriculture	424	2,043			424	1840			424	1,941		
other	90	0			111	0			132	0		
Total	4,076	4,369	0	0	4,174	3,962	0	0	4,291	4,178	0	0

TABLE12 (continued) - Past, Current and Projected Water Deliveries

Water Use Sectors	2015				2020				2025				
	metered		unmetered		metered		unmetered		metered		unmetered		metered
	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts
Single family	3,135	1,116			3,205	1,166			3,275	1,216			3,345
Multi-family	345	600			360	650			375	700			390
Commercial	224	400			228	416			232	432			236
Industrial	64	124			64	124			64	124			64
Institutional/gov	56	113			56	113			56	113			56
Landscape	0	0			0	0			0	0			0
Agriculture	424	2,042			424	2,143			424	2,244			424
other	153	0			174	0			195	0			216
Total	4,401	4,395	0	0	4,511	4,612	0	0	4,621	4,829	0	0	4,731

- Identify and quantify sales to other agencies Reference & Page Number
- No sales to other agencies Reference & Page Number

**Table 13
Sales to Other Agencies - AF Year**

Water Distributed	2000	2004	2010	2015	2020	2025	2030 - opt
Montecito Water District	0	250	0	0	0	0	0
Total	0	250	0	0	0	0	0

- Identify and quantify additional water uses Reference & Page Number

**Table 14
Additional Water Uses and Losses - AF Year**

Water Use	2000	2005	2010	2015	2020	2025	2030 - opt
Saline barriers	0	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0	0
raw water	0	0	0	0	0	0	0
recycled	0	0	0	0	0	0	0
other (define)	0	0	0	0	0	0	0
Unaccounted-for system losses	200	200	200	200	200	200	200
Total	200	200	200	200	200	200	200

Any recycled water was included in table 12 should not be included in table 14.

**Table 15
Total Water Use - AF Year**

Water Use	2000	2005	2010	2015	2020	2025	2030 - opt
Total of Tables 12, 13, 14	4,569	4,412	4,378	4,595	4,812	5,029	5,246

2005 Urban Water Management Plan "Review of DMMs for Completeness" Form (Water Code §10631 (f))

(Water Code §10631 (f) & (g), the 2005 Urban Water Management Plan "Review of DMMs for Completeness" Form is found on Sheet 2

Planned Water Supply Projects and Programs, including non-implemented DMMs (Water Code §10631 (g))

- No non-implemented / not scheduled DMMs _____ Reference & Page Number
- Cost-Benefit includes economic and non-economic factors (environmental, social, health, customer impact, and technological factors) _____ Reference & Page Number
- Cost-Benefit analysis includes total benefits and total costs _____ Reference & Page Number
- Identifies funding available for Projects with higher per-unit-cost than DMMs _____ Reference & Page Number
- Identifies suppliers' legal authority to implement DMMs, efforts to implement the measures and efforts to identify cost share partners _____ Reference & Page Number

Non-implemented & Not Scheduled DMM / Planned Water Supply Projects (Name)	Per-AF Cost (\$)

Planned Water Supply Projects and Programs (Water Code §10631 (h))

- No future water supply projects or programs _____ Reference & Page Number
- Detailed description of expected future supply projects & programs _____ Reference & Page Number
- Timeline for each proposed project _____ Reference & Page Number
- Quantification of each projects normal yield (AFY) _____ Reference & Page Number
- Quantification of each projects single dry-year yield (AFY) _____ Reference & Page Number
- Quantification of each projects multiple dry-year yield (AFY) _____ Reference & Page Number

Project Name	Projected Start Date	Projected Completion Date	Normal-year AF to agency	Single-dry year yield AF	Multiple-Dry-Year 1 AF	Multiple-Dry-Year 2 AF	Multiple-Dry-Year 3 AF

Opportunities for development of desalinated water (Water Code §10631 (i))

- Describes opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply
- No opportunities for development of desalinated water

Sources of Water	Check if yes
Ocean Water	X Santa Barbara Desal Plant
Brackish ocean water	
Brackish groundwater	
other	
other	

District is a CUWCC signatory (Water Code § 10631 (j))

Urban suppliers that are California Urban Water Conservation Council members may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g). The supplier's CUWCC Best Management Practices Report should be attached to the UWMP.

- Agency is a CUWCC member _____ Reference & Page Number
- 2003-04 annual updates are attached to plan _____ Reference & Page Number
- Both annual updates are considered completed by CUWCC website _____ Reference & Page Number

If Supplier receives or projects receiving water from a wholesale supplier (Water Code §10631 (k))

Yes

- Agency receives, or projects receiving, wholesale water _____ Reference & Page Number
- Agency provided written demand projections to wholesaler, 20 years _____ Reference & Page Number

Table 19 Agency demand projections provided to wholesale suppliers - AFY					
Wholesaler	2010	2015	2020	2025	2030 - opt
(name 1)	0	0	0	0	0
(name 2)	0	0	0	0	0
(name 3)	0	0	0	0	0

- Wholesaler provided written water availability projections, by source, to agency, 20 years _____ Reference & Page Number
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 20 Wholesaler identified & quantified the existing and planned sources of water- AFY					
Wholesaler sources	2010	2015	2020	2025	2030 - opt
(source 1)					
(source 2)					
(source 3)					

- Reliability of wholesale supply provided in writing by wholesale agency _____ Reference & Page Number
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 21 Wholesale Supply Reliability - % of normal AFY					
Wholesaler sources	Multiple Dry Water Years				
	Single Dry	Year 1	Year 2	Year 3	Year 4
(source 1)					
(source 2)					
(source 3)					

Table 22 Factors resulting in inconsistency of wholesaler's supply				
Name of supply	Legal	Environment	Water Quality	Climatic

Water Shortage Contingency Plan Section (Water Code § 10632)
Stages of Action (Water Code § 10632 (a))

- Provide stages of action _____ Reference & Page Number
- Provide the water supply conditions for each stage _____ Reference & Page Number
- Includes plan for 50 percent supply shortage _____ Reference & Page Number

Table 23 Water Supply Shortage Stages and Conditions RATIONING STAGES		
Stage No.	Water Supply Conditions	% Shortage
1		15%
2		30%
3		50%

Three-Year Minimum Water Supply (Water Code §10632 (b))

- Identifies driest 3-year period _____ Reference & Page Number
- Minimum water supply available by source for the next three years _____ Reference & Page Number

Table 24 Three-Year Estimated Minimum Water Supply - AF Year				
source**	Normal	2006	2007	2008
Cachuma	2,813	1,547	1,547	1,547
SWP	2,200	1,650	1,650	1,650
Groundwater	2,000	2,000	2,000	2,000
Total	7,013	5,197	5,197	5,197

*Note: If reporting after 2005, please change the column headers (Year 1, 2, & 3) to the appropriate years

Preparation for catastrophic water supply interruption (Water Code §10632 (c))

Provided catastrophic supply interruption plan _____ Reference & Page Number

Table 25 Preparation Actions for a Catastrophe	
Possible Catastrophe	Check if Discussed
Regional power outage	yes
Earthquake	yes
Other (name event)	
Other (name event)	

see disaster preparedness plan

Prohibitions (Water Code § 10632 (d))

List the mandatory prohibitions against specific water use practices during water shortages _____ Reference & Page Number

Table 26 Mandatory Prohibitions	
Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water for street washing	1
No external watering between 10am to 4pm	1
Restaurants to offer water only upon request	1
Boat and vehicle washing controls	1
Runoff prohibition	1
Other (name prohibition)	
Other (name prohibition)	

Consumption Reduction Methods (Water Code § 10632 (e))

List the consumption reduction methods the water supplier will use to reduce water use in the most restrictive stages with up to a 50% reduction. _____ Reference & Page Number

Table 27 Consumption Reduction Methods		
Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Voluntary - Allocations for all customer types	1	15
Mandatory - Allocations for all customer types	2	30
Mandatory - Allocations for all customer types	3	50
name method		
name method		
name method		

Penalties (Water Code § 10632 (f))

List excessive use penalties or charges for excessive use _____ Reference & Page Number

Table 28 Penalties and Charges	
Penalties or Charges	Stage When Penalty Takes Effect
Penalty for excess use	1
Charge for excess use	1
Civil misdemeanor	1
Termination of service	1
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	

Revenue and Expenditure Impacts (Water Code § 10632 (g))

- Describe how actions and conditions impact revenues _____ Reference & Page Number
- Describe how actions and conditions impact expenditures _____ Reference & Page Number
- Describe measures to overcome the revenue and expenditure impacts _____ Reference & Page Number

Table 29 Proposed measures to overcome revenue impacts	
Names of measures	Check if Discussed
Rate adjustment	
Development of reserves	X
name of measure	
name of measure	

Table 30 Proposed measures to overcome expenditure impacts	
Names of measures	Check if Discussed
none	X
name of measure	
name of measure	
name of measure	

Water Shortage Contingency Ordinance/Resolution (Water Code § 10632 (h))

- Attach a copy of the draft water shortage contingency resolution or ordinance. _____ Reference & Page Number

Reduction Measuring Mechanism (Water Code § 10632 (i))

- Provided mechanisms for determining actual reductions _____ Reference & Page Number

Table 31 Water Use Monitoring Mechanisms	
Mechanisms for determining actual reductions	Type data expected (pop-up?)
Allocations for each customer type	computer software analysis and flagging
Name mechanism	
Name mechanism	

Recycling Plan Agency Coordination Water Code § 10633

- Describe the coordination of the recycling plan preparation information to the extent available. _____ Reference & Page Number

Table 32 Participating agencies	
	participated
Water agencies	
Wastewater agencies	
Groundwater agencies	
Planning Agencies	

Wastewater System Description (Water Code § 10633 (a))

- Describe the wastewater collection and treatment systems in the supplier's service area _____ Reference & Page Number
- Quantify the volume of wastewater collected and treated _____ Reference & Page Number

Table 33 Wastewater Collection and Treatment - AF Year							
Type of Wastewater	2000	2005	2010	2015	2020	2025	2030 - opt
Wastewater collected & treated in service area	6,796						
Volume that meets recycled water standard	1,030						

avg mgd AFY
 0 -
 0 -

Wastewater Disposal and Recycled Water Uses (Water Code § 10633 (a - d))

- Describes methods of wastewater disposal _____ Reference & Page Number
- Describe the current type, place and use of recycled water _____ Reference & Page Number
- None _____ Reference & Page Number
- Describe and quantify potential uses of recycled water _____ Reference & Page Number

**Table 34
Disposal of wastewater (non-recycled) AF Year**

Method of disposal	Treatment Level	2005	2010	2015	2020	2025	2030 - opt
Name of method							
Name of method							
Name of method							
Name of method							
Total		0	0	0	0	0	0

**Table 35
Recycled Water Uses - Actual and Potential (AFY)**

User type	Treatment Level	2005	2010	2015	2020	2025	2030 - opt
Agriculture		0	0	0	0	0	0
Landscape		0	0	0	0	0	0
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
Other (user type)							
Other (user type)							
Total		0	0	0	0	0	0

- Determination of technical and economic feasibility of serving the potential uses _____ Reference & Page Number

Projected Uses of Recycled Water (Water Code § 10633 (e))

- Projected use of recycled water, 20 years _____ Reference & Page Number

**Table 36
Projected Future Use of Recycled Water in Service Area - AF Year**

	2010	2015	2020	2025	2030 - opt
Projected use of Recycled Water	0	0	0	0	0

- Compare UWMP 2000 projections with UWMP 2005 actual (§ 10633 (e)) _____ Reference & Page Number
- None _____ Reference & Page Number

**Table 37
Recycled Water Uses - 2000 Projection compared with 2005 actual - AFY**

User type	2000 Projection for 2005	2005 actual use
Agriculture	0	0
Landscape	0	0
Wildlife Habitat	0	0
Wetlands	0	0
Industrial	0	0
Groundwater Recharge	0	0
Other (user type)		
Other (user type)		
Total		0

Plan to Optimize Use of Recycled Water

(Water Code § 10633 (f))

- Describe actions that might be taken to encourage recycled water uses _____ Reference & Page Number
 Describe projected results of these actions in terms of acre-feet or recycled water used per year _____ Reference & Page Number

Table 38 Methods to Encourage Recycled Water Use					
Actions	AF of use projected to result from this action				
	2010	2015	2020	2025	2030 - opt
Financial incentives					
name of action					
name of action					
name of action					
name of action					
name of action					
name of action					
name of action					
Total	0	0	0	0	0

- Provide a recycled water use optimization plan which includes actions to facilitate the use of _____ Reference & Page Number
 recycled water (dual distribution systems, promote recirculating uses)

Water quality impacts on availability of supply

(Water Code § 10634)

- Discusses water quality impacts (by source) upon water management strategies and supply reliability _____ Reference & Page Number
 No water quality impacts projected _____

Table 39 Current & projected water supply changes due to water quality - percentage						
water source	2005	2010	2015	2020	2025	2030 - opt
none	0	0	0	0	0	0

Supply and Demand Comparison to 20 Years

(Water Code § 10635 (a))

- Compare the projected normal water supply to projected normal water use over the next 20 years, in 5-year increments. _____ Reference & Page Number

Table 40 Projected Normal Water Supply - AF Year					
(from table 4)	2010	2015	2020	2025	2030 - opt
Supply	7,013	6,440	6,440	6,440	6,440
% of year 2005	93%	86%	86%	86%	86%

Table 41 Projected Normal Water Demand - AF Year					
(from table 15)	2010	2015	2020	2025	2030 - opt
Demand	4,378	4,595	4,812	5,029	5,246
% of year 2005	99%	104%	109%	114%	119%

Table 42 Projected Supply and Demand Comparison - AF Year					
	2010	2015	2020	2025	2030 - opt
Supply totals	7,013	6,440	6,440	6,440	6,440
Demand totals	4,378	4,595	4,812	5,029	5,246
Difference	2,635	1,845	1,628	1,411	1,194
Difference as % of Supply	38%	29%	25%	22%	19%
Difference as % of Demand	60%	40%	34%	28%	23%

Supply and Demand Comparison: Single-dry Year Scenario (Water Code § 10635 (a))

Compare the projected single-dry year water supply to projected single-dry year water use _____ Reference & Page Number over the next 20 years, in 5-year increments.

Table 43 Projected single dry year Water Supply - AF Year					
	2010	2015	2020	2025	2030 - opt
Supply	5,868	5,308	5,308	5,308	5,308
% of projected normal	83.7%	82.4%	82.4%	82.4%	82.4%

Table 44 Projected single dry year Water Demand - AF Year					
	2010	2015	2020	2025	2030 - opt
Demand	4,378	4,595	4,812	5,029	5,246
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 45 Projected single dry year Supply and Demand Comparison - AF Year					
	2010	2015	2020	2025	2030 - opt
Supply totals	5,868	5,308	5,308	5,308	5,308
Demand totals	4,378	4,595	4,812	5,029	5,246
Difference	1,490	713	496	279	62
Difference as % of Supply	25.4%	13.4%	9.3%	5.3%	1.2%
Difference as % of Demand	34.0%	15.5%	10.3%	5.5%	1.2%

Supply and Demand Comparison: Multiple-dry Year Scenario (Water Code § 10635 (a))

Project a multiple-dry year period (as identified in Table 9) occurring between 2006-2010 _____ Reference & Page Number and compare projected supply and demand during those years

Table 46 Projected supply during multiple dry year period ending in 2010 - AF Year					
	2006	2007	2008	2009	2010
Supply	6,360	6,360	6,360	5,980	5,801
% of projected normal	100.0%	100.0%	100.0%	94.0%	82.7%

Table 47 Projected demand multiple dry year period ending in 2010 - AFY					
	2006	2007	2008	2009	2010
Demand	4,006	4,049	4,093	4,136	4,180
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 48 Projected Supply and Demand Comparison during multiple dry year period ending in 2010- AF Year					
	2006	2007	2008	2009	2010
Supply totals	6,360	6,360	6,360	5,980	5,801
Demand totals	4,006	4,049	4,093	4,136	4,180
Difference	2,355	2,311	2,268	1,844	1,622
Difference as % of Supply	37.0%	36.3%	35.7%	30.8%	28.0%
Difference as % of Demand	58.8%	57.1%	55.4%	44.6%	38.8%

Project a multiple-dry year period (as identified in Table 9) occurring between 2011-2015 _____ Reference & Page Number and compare projected supply and demand during those years

Table 49 Projected supply during multiple dry year period ending in 2015 - AF Year					
	2011	2012	2013	2014	2015
Supply	5,801	5,801	5,801	5,353	5,353
% of projected normal	90.1%	90.1%	90.1%	83.1%	83.1%

Table 50 Projected demand multiple dry year period ending in 2015 - AFY					
	2011	2012	2013	2014	2015
Demand	4,221	4,265	4,308	4,352	4,395
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 51 Projected Supply and Demand Comparison during multiple dry year period ending in 2015- AF Year					
	2011	2012	2013	2014	2015
Supply totals	5,801	5,801	5,801	5,353	5,353
Demand totals	4,221	4,265	4,308	4,352	4,395
Difference	1,580	1,536	1,493	1,001	958
Difference as % of Supply	27.2%	26.5%	25.7%	18.7%	17.9%
Difference as % of Demand	37.4%	36.0%	34.7%	23.0%	21.8%

Project a multiple-dry year period (as identified in Table 9) occurring between 2016-2020 _____ Reference & Page Number and compare projected supply and demand during those years

Table 52 Projected supply during multiple dry year period ending in 2020 - AF Year					
	2016	2017	2018	2019	2020
Supply	5,801	5,801	5,801	5,353	5,353
% of projected normal	90.1%	90.1%	90.1%	83.1%	83.1%

Table 53 Projected demand multiple dry year period ending in 2020 - AFY					
	2016	2017	2018	2019	2020
Demand	4,438	4,482	4,525	4,569	4,612
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 54 Projected Supply and Demand Comparison during multiple dry year period ending in 2020- AF Year					
	2016	2017	2018	2019	2020
Supply totals	5,801	5,801	5,801	5,353	5,353
Demand totals	4,438	4,482	4,525	4,569	4,612
Difference	1,363	1,319	1,276	784	741
Difference as % of Supply	23.5%	22.7%	22.0%	14.7%	13.8%
Difference as % of Demand	30.7%	29.4%	28.2%	17.2%	16.1%

Project a multiple-dry year period (as identified in Table 9) occurring between 2021-2025 _____ Reference & Page Number and compare projected supply and demand during those years

Table 55 Projected supply during multiple dry year period ending in 2025 - AF Year					
	2021	2022	2023	2024	2025
Supply	5,801	5,801	5,801	5,353	5,353
% of projected normal	90.1%	90.1%	90.1%	83.1%	83.1%

Table 56 Projected demand multiple dry year period ending in 2025 - AFY					
	2021	2022	2023	2024	2025
Demand	4,655	4,699	4,742	4,786	4,829
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 57 Projected Supply and Demand Comparison during multiple dry year period ending in 2025- AF Year					
	2021	2022	2023	2024	2025
Supply totals	5,801	5,801	5,801	5,353	5,353
Demand totals	4,655	4,699	4,742	4,786	4,829
Difference	1,146	1,102	1,059	567	524
Difference as % of Supply	19.7%	19.0%	18.3%	10.6%	9.8%
Difference as % of Demand	24.6%	23.5%	22.3%	11.9%	10.9%

Provision of Water Service Reliability section to cities/counties within service area (Water Code § 10635(b))

Provided Water Service Reliability section of UWMP to cities and counties within which it provides water supplies within 60 days of UWMP submission to DWR _____ Reference & Page Number

Does the Plan Include Public Participation and Plan Adoption (Water Code § 10642)

- Attach a copy of adoption resolution _____ Reference & Page Number
- Encourage involvement of social, cultural & economic community groups _____ Reference & Page Number
- Plan available for public inspection _____ Reference & Page Number
- Provide proof of public hearing _____ Reference & Page Number
- Provided meeting notice to local governments _____ Reference & Page Number

Review of implementation of 2000 UWMP (Water Code § 10643)

- Reviewed implementation plan and schedule of 2000 UWMP _____ Reference & Page Number
- Implemented in accordance with the schedule set forth in plan _____ Reference & Page Number
- 2000 UWMP not required _____ Reference & Page Number

Provision of 2005 UWMP to local governments (Water Code § 10644 (a))

Provide 2005 UWMP to DWR, and cities and counties within 30 days of adoption _____ Reference & Page Number

Does the plan or correspondence accompanying it show where it is available for public review (Water Code § 10645)

Does UWMP or correspondence accompanying it show where it is available for public review _____ Reference & Page Number

Appendix I

BMP Reports 2003-2004

Reported as of 2/2/07

Water Supply & Reuse

Reporting Unit:

Carpinteria Valley Water District

Year:

2003

Water Supply Source Information

Supply Source Name

Quantity (AF) Supplied

Supply Type

Total AF:

Reported as of 2/2/07

Accounts & Water UseReporting Unit Name:
Carpinteria Valley Water DistrictSubmitted to
CUWCC
05/31/2004Year:
2003**A. Service Area Population Information:**

1. Total service area population 18500

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	3063	1108	0	0
2. Multi-Family	317	546	0	0
3. Commercial	219	388	0	0
4. Industrial	73	137	0	0
5. Institutional	54	128	0	0
6. Dedicated Irrigation	0	0	0	0
7. Recycled Water	0	0	0	0
8. Other	433	1948	0	0
9. Unaccounted	NA	0	NA	0
Total	4159	4255	0	0

Metered**Unmetered**

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

- 1. Based on your signed MOU date, 05/15/1996, your Agency STRATEGY DUE DATE is: 05/15/1998
- 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? yes
 - a. If YES, when was it implemented? 01/01/1994
- 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? yes
 - a. If YES, when was it implemented? 01/01/1994

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	34	10
2. Number of surveys completed:	27	7

Indoor Survey:

- 3. Check for leaks, including toilets, faucets and meter checks yes yes
- 4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary yes yes
- 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary yes yes

Outdoor Survey:

- 6. Check irrigation system and timers yes yes
- 7. Review or develop customer irrigation schedule no no
- 8. Measure landscaped area (Recommended but not required for surveys) no no
- 9. Measure total irrigable area (Recommended but not required for surveys) no no
- 10. Which measurement method is typically used (Recommended but not required for surveys) None
- 11. Were customers provided with information packets that included evaluation results and water savings recommendations? no no
- 12. Have the number of surveys offered and completed, survey results, and survey costs been tracked? yes yes
 - a. If yes, in what form are surveys tracked? manual activity
 - b. Describe how your agency tracks this information.

Through time sheets, customer service cards and water audit forms.

C. Water Survey Program Expenditures

This Year Next Year

1. Budgeted Expenditures	9750	9750
2. Actual Expenditures	9608	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 02: Residential Plumbing Retrofit

Reporting Unit:

Carpinteria Valley Water District

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? yes
 - a. If YES, list local jurisdictions in your service area and code or ordinance in each:

City Building/Plumbing Code & Count Building and Plumbing code.
2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no
3. Estimated percent of single-family households with low-flow showerheads: %
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: %
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes
 - a. If YES, when did your agency begin implementing this strategy? 01/31/2000
 - b. Describe your targeting/ marketing strategy.

LF Shower heads and aerater are offered to water audited customers, and are sold at the counter at our cost.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	90	14
3. Number of toilet-displacement devices distributed:	20	18
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	28	9
6. Does your agency track the distribution and cost of low-flow devices?		yes
a. If YES, in what format are low-flow devices tracked?		Manual Activity
b. If yes, describe your tracking and distribution system :		

Tracking system only consists of number of devices distributed not where distributed. This will be changed starting 2004

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	800	800
2. Actual Expenditures	1038	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
 - a. Determine metered sales (AF) 4270
 - b. Determine other system verifiable uses (AF) 100
 - c. Determine total supply into the system (AF) 4215
 - d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 1.04
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
4. Did your agency complete a full-scale audit during this report year? no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no
6. Does your agency operate a system leak detection program? yes
 - a. If yes, describe the leak detection program:

Older Pipes are targeted and inspected for leaks using a leak detection device

B. Survey Data

1. Total number of miles of distribution system line. 75
2. Number of miles of distribution system line surveyed. 2

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	1000	1000
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

- 1. Does your agency require meters for all new connections and bill by volume-of-use? yes
- 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? no
 - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?
 - b. Describe the program:
- 3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

- 1. 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? no
 - a. If YES, when was the feasibility study conducted? (mm/dd/yy)
 - b. Describe the feasibility study:
- 2. Number of CII accounts with mixed-use meters. 346
- 3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 2/2/07

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:

Carpinteria Valley Water District

BMP Form Status:

100% Complete

Year:

2003

A. Water Use Budgets

- | | |
|--|----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 34 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|---|------------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 01/01/1994 |
| b. Description of marketing / targeting strategy: | |
| Large landscape customer are periodically notified that free water audit are available to them. | |
| 2. Number of Surveys Offered. | 2 |
| 3. Number of Surveys Completed. | 1 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | no |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below: | |

C. Other BMP 5 Actions

- | | |
|---|-----|
| 1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. | no |
| Does your agency provide mixed-use accounts with landscape budgets? | |
| 2. Number of CII mixed-use accounts with landscape budgets. | |
| 3. Do you offer landscape irrigation training? | yes |
| 4. Does your agency offer financial incentives to improve landscape water use efficiency? | no |

Type of Financial Incentive:

Budget (Dollars/ **Number Awarded to Customers** **Total Amount Awarded**

Year)

- a. Rebates
- b. Loans
- c. Grants

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

Water saving tips, List of qualified water wise landscape companies, Xeroscape landscape plant lists.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? no

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	1250	1500
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? no
 - a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

2. Does your agency offer rebates for high-efficiency washers? no
3. What is the level of the rebate?
4. Number of rebates awarded.

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 07: Public Information Programs

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

We provide information at the counter regarding various water conserving practices including landscaping, leak detection, sell aerators, and showerheads. We participate in water awareness week at the local Earthday events and hand out literature. Work with Santa Barbara County Water Agency to advertise water conservation events and have information on our website regarding Water efficiency.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	yes	5
b. Public Service Announcement	yes	5
c. Bill Inserts / Newsletters / Brochures	yes	16
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	1
f. Special Events, Media Events	yes	1
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	1750	1750
2. Actual Expenditures	2645	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 08: School Education Programs

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	3	60	1
Grades 4th-6th	yes	3	55	1
Grades 7th-8th	yes	0	0	1
High School	yes	0	0	1

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/01/1997

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	550	600
2. Actual Expenditures	129	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:

Carpinteria Valley Water District

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

- 1. Has your agency identified and ranked COMMERCIAL customers according to use? yes
- 2. Has your agency identified and ranked INDUSTRIAL customers according to use? yes
- 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? yes

Option A: CII Water Use Survey and Customer Incentives Program

- 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? yes

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	1	0	1
b. Number of New Surveys Completed	1	0	1
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0
CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no
Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

- 5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this no

option?

6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?

7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.

8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	750	750
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 09a: CII ULFT Water Savings

Reporting Unit:

Carpinteria Valley Water District

BMP Form Status:
100% Complete

Year:
2003

1. Did your agency implement a CII ULFT replacement program in the reporting year? No
If No, please explain why on Line B.
10.

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.
- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.
2. How does your agency advertise this program?
Check all that apply.
- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)
2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?
3. What is the total number of customer accounts participating in the program during the last year ?

CII Subsector	Number of Toilets Replaced					Type Not Specified
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount		
4. a. Offices						0
b. Retail / Wholesale						0
c. Hotels						0
d. Health						0
e. Industrial						0
f. Schools: K to 12						0
g. Eating						0
h. Govern-						0

- ment
- i. Churches 0
- j. Other 0

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- a. Disruption to business
- b. Inadequate payback
- c. Inadequate ULFT performance
- d. Lack of funding
- e. American's with Disabilities Act
- f. Permitting
- g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

A specific program has not been developed.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor		
b. Materials		
c. Marketing & Advertising		
d. Administration & Overhead		
e. Outside Services		
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

- a. Wholesale agency contribution
- b. State agency contribution
- c. Federal agency contribution

d. Other contribution

e. Total

0

D. Comments

BMP 11: Conservation Pricing

Reporting Unit:
Carpinteria Valley Water District

BMP Form
 Status:
100% Complete

Year:
2003

A. Implementation**Rate Structure Data Volumetric Rates for Water Service by Customer Class****1. Residential**

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$1389412
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$1866394

2. Commercial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$375561
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$200609

3. Industrial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$131118
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$128696

4. Institutional / Government

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$109211
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$92285

5. Irrigation

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

6. Other

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$1159537
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$1011357

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 12: Conservation Coordinator

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

- 1. Does your Agency have a conservation coordinator? yes
- 2. Is this a full-time position? no
- 3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
- 4. Partner agency's name: Santa Barbara Water Agency
- 5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 15%
 - b. Coordinator's Name Patty Rodriguez
 - c. Coordinator's Title Water Conservation Coordinator
 - d. Coordinator's Experience and Number of Years 5 years experience as District's Coordinator
 - e. Date Coordinator's position was created (mm/dd/yyyy) 1/1/1999
- 6. Number of conservation staff, including Conservation Coordinator. 3

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	1000	1000
2. Actual Expenditures	518	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 13: Water Waste Prohibition

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

The Rule states that no person, company, corporation etc.. shall knowingly use water wastefully. If a customer is found to have violated rule 28 then that customers service will be shutoff at the meter until such time that the violation is corrected.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

CVWD

Rules & Regulations, Rule No. 28

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

- | | |
|--|-----|
| a. Gutter flooding | yes |
| b. Single-pass cooling systems for new connections | no |
| c. Non-recirculating systems in all new conveyor or car wash systems | yes |
| d. Non-recirculating systems in all new commercial laundry systems | yes |
| e. Non-recirculating systems in all new decorative fountains | yes |
| f. Other, please name
Unrepaired leaks | yes |

2. Describe measures that prohibit water uses listed above:

When a field person sees a violation he reports it to the office. The Office will contact the customer to have them correct the violation. If the customer does not correct the violation the water is shut off.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|--|-----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | yes |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | no |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. | no |
| c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. | no |

4. Does your agency include water softener checks in home water audit programs? yes

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 14: Residential ULFT Replacement Programs

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate		
3. Direct Install		
4. CBO Distribution		
5. Other		

Total

- 6. Describe your agency's ULFT program for single-family residences.
- 7. Describe your agency's ULFT program for multi-family residences.
- 8. Is a toilet retrofit on resale ordinance in effect for your service area? no
- 9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Because Residential new construction is at very low rate in the District much of development consists of remodels and expansions. As a condition of these remodels or expansions the District requires replacement of high use fixtures including Toilets.

D. Comments

Reported as of 2/2/07

Water Supply & Reuse

Reporting Unit:

Carpinteria Valley Water District

Year:

2004**Water Supply Source Information**

Supply Source Name	Quantity (AF) Supplied	Supply Type
Cachuma Project	2653	Imported
State Water Project	981	Imported
Ground Water	1264	Groundwater

Total AF: 4898

Reported as of 2/2/07

Accounts & Water UseReporting Unit Name:
Carpinteria Valley Water DistrictSubmitted to
CUWCC
02/01/2005Year:
2004**A. Service Area Population Information:**

1. Total service area population 18500

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	3041	852	0	0
2. Multi-Family	303	843	0	0
3. Commercial	216	406	0	0
4. Industrial	68	135	0	0
5. Institutional	55	137	0	0
6. Dedicated Irrigation	0	0	0	0
7. Recycled Water	0	0	0	0
8. Other	531	2126	0	0
9. Unaccounted	NA	0	NA	0
Total	4214	4499	0	0
	Metered		Unmetered	

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

- 1. Based on your signed MOU date, 05/15/1996, your Agency STRATEGY DUE DATE is: 05/15/1998
- 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? yes
 - a. If YES, when was it implemented? 01/01/1994
- 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? yes
 - a. If YES, when was it implemented? 01/01/1994

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	56	9
2. Number of surveys completed:	47	9

Indoor Survey:

- 3. Check for leaks, including toilets, faucets and meter checks yes yes
- 4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary yes yes
- 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary yes yes

Outdoor Survey:

- 6. Check irrigation system and timers yes yes
- 7. Review or develop customer irrigation schedule no no
- 8. Measure landscaped area (Recommended but not required for surveys) no no
- 9. Measure total irrigable area (Recommended but not required for surveys) no no
- 10. Which measurement method is typically used (Recommended but not required for surveys) None
- 11. Were customers provided with information packets that included evaluation results and water savings recommendations? no no
- 12. Have the number of surveys offered and completed, survey results, and survey costs been tracked? yes yes
 - a. If yes, in what form are surveys tracked? manual activity
 - b. Describe how your agency tracks this information.

Through time sheets and water audit forms.

C. Water Survey Program Expenditures

This Year Next Year

1. Budgeted Expenditures	10800	10800
2. Actual Expenditures	6177	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 02: Residential Plumbing Retrofit

Reporting Unit:
Carpinteria Valley Water District

BMP Form Status:
100% Complete

Year:
2004

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? yes
 - a. If YES, list local jurisdictions in your service area and code or ordinance in each:

 City Building/Plumbing Code & Count Building and Plumbing code.
2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no
3. Estimated percent of single-family households with low-flow showerheads: %
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: %
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes
 - a. If YES, when did your agency begin implementing this strategy? 01/31/2000
 - b. Describe your targeting/ marketing strategy.

LF Shower heads, garden nozzles and aerater are offered to water audited customers, and are sold at the counter at our cost.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	91	10
3. Number of toilet-displacement devices distributed:	10	3
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	90	2
6. Does your agency track the distribution and cost of low-flow devices?		yes
a. If YES, in what format are low-flow devices tracked?		Manual Activity
b. If yes, describe your tracking and distribution system :		

Tracking system only consists of number of devices distributed not where distributed.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	800	800
2. Actual Expenditures	247	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
 - a. Determine metered sales (AF) 4295
 - b. Determine other system verifiable uses (AF) 100
 - c. Determine total supply into the system (AF) 4133
 - d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 1.06
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
4. Did your agency complete a full-scale audit during this report year? no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no
6. Does your agency operate a system leak detection program? yes
 - a. If yes, describe the leak detection program:

Older Pipes are targeted and inspected for leaks using a leak detection device

B. Survey Data

1. Total number of miles of distribution system line. 75
2. Number of miles of distribution system line surveyed. 2

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	1000	1000
2. Actual Expenditures	1176	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

- 1. Does your agency require meters for all new connections and bill by volume-of-use? yes
- 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? no
 - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?
 - b. Describe the program:
- 3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

- 1. 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? no
 - a. If YES, when was the feasibility study conducted? (mm/dd/yy)
 - b. Describe the feasibility study:
- 2. Number of CII accounts with mixed-use meters. 346
- 3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
Carpinteria Valley Water District

BMP Form Status:
100% Complete

Year:
2004

A. Water Use Budgets

- | | |
|--|----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 34 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|--|------------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 01/01/1994 |
| b. Description of marketing / targeting strategy: | |
| Large landscape customers are periodically notified that a free water audit are available to them. | |
| 2. Number of Surveys Offered. | 1 |
| 3. Number of Surveys Completed. | 1 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | no |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below: | |

C. Other BMP 5 Actions

- | | |
|---|-----|
| 1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets? | no |
| 2. Number of CII mixed-use accounts with landscape budgets. | 0 |
| 3. Do you offer landscape irrigation training? | yes |
| 4. Does your agency offer financial incentives to improve landscape water use efficiency? | yes |

Type of Financial Incentive:	Budget (Dollars/	Number Awarded to Customers	Total Amount Awarded
------------------------------	------------------	-----------------------------	----------------------

	Year)		
a. Rebates	1000	0	0
b. Loans	0	0	0
c. Grants	0	0	0
5. Do you provide landscape water use efficiency information to new customers and customers changing services?			yes

a. If YES, describe below:

Water saving tips, List of qualified water wise landscape companies, Xeroscape landscape plant lists.

6. Do you have irrigated landscaping at your facilities?	yes
a. If yes, is it water-efficient?	yes
b. If yes, does it have dedicated irrigation metering?	no
7. Do you provide customer notices at the start of the irrigation season?	no
8. Do you provide customer notices at the end of the irrigation season?	no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	1500	1500
2. Actual Expenditures	1000	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

F. Comments

Effective 2005, we will actively promote ET controllers to our large landscape customers in an effort to encourage efficient water use. The ET controllers are provided through grant funding.

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? no
 - a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

2. Does your agency offer rebates for high-efficiency washers? yes
3. What is the level of the rebate? 100
4. Number of rebates awarded. 0

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 07: Public Information Programs

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

We provide information at the counter regarding various water conserving practices including landscaping, leak detection, sell aerators, garden nozzles and showerheads. We participate in water awareness week at the local Earthday events and hand out literature. Work with Santa Barbara County Water Agency to advertise water conservation events and have information on our website regarding Water efficiency.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	yes	4
b. Public Service Announcement	yes	4
c. Bill Inserts / Newsletters / Brochures	yes	16
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	1
f. Special Events, Media Events	yes	2
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	1500	1500
2. Actual Expenditures	4443	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 08: School Education Programs

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	1	87	1
Grades 4th-6th	yes	1	28	1
Grades 7th-8th	yes	0	0	1
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/01/1997

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	600	600
2. Actual Expenditures	198	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:

Carpinteria Valley Water District

BMP Form Status:

100% Complete

Year:

2004

A. Implementation

- 1. Has your agency identified and ranked COMMERCIAL customers according to use? yes
- 2. Has your agency identified and ranked INDUSTRIAL customers according to use? yes
- 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? yes

Option A: CII Water Use Survey and Customer Incentives Program

- 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? yes

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	1
b. Number of New Surveys Completed	0	0	1
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0
CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	no	no	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	yes
Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	1561	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

- 5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this no

option?

6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings? no

7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.

8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	1500	1500
2. Actual Expenditures	32	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 09a: CII ULFT Water Savings

Reporting Unit:

Carpinteria Valley Water District

BMP Form Status:

100% Complete

Year:

2004

1. Did your agency implement a CII ULFT replacement program in the reporting year? Yes
 If No, please explain why on Line B.
 10.

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply. Consumption ranking
Potential savings
CII Sector or subsector

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

The program has not been in existence long enough in order to determine the effectiveness.

2. How does your agency advertise this program? Direct letter
Bill message
Newsletter
Web page
TV PSAs
Newspapers
 Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

The program has not been in existence long enough in order to determine the effectiveness.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) Yes
2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? Yes
3. What is the total number of customer accounts participating in the program during the last year ? 0

CII Subsector	Number of Toilets Replaced					Type Not Specified
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount		
4. a. Offices	0	0	0	0	0	0
b. Retail / Wholesale	0	0	0	0	0	0
c. Hotels	0	0	0	0	0	0
d. Health	0	0	0	0	0	0
e. Industrial	0	0	0	0	0	0

f. Schools: K to 12	0	0	0	0	0
g. Eating	0	0	0	0	0
h. Govern- ment	0	0	0	0	0
i. Churches	0	0	0	0	0
j. Other	0	0	0	0	0

5. Program design. Rebate or voucher

6. Does your agency use outside services to implement this program? Yes

a. If yes, check all that apply. Community Based Organization

7. Participant tracking and follow-up. Telephone

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- a. Disruption to business 1
- b. Inadequate payback 5
- c. Inadequate ULFT performance 1
- d. Lack of funding 3
- e. American's with Disabilities Act 1
- f. Permitting 1
- g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

The major obstacle of this program's effectiveness for our agency is the low interest of customers.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Our program did not reach its objectives for this reporting year. The major obstacle of this program's effectiveness for our agency is the low interest of our customers.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	2518	700
b. Materials	100	31.56
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	2618	731.56

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	1500
e. Total	1500

D. Comments

BMP 11: Conservation Pricing

Reporting Unit:
Carpinteria Valley Water District

BMP Form
 Status:
100% Complete

Year:
2004

A. Implementation**Rate Structure Data Volumetric Rates for Water Service by Customer Class****1. Residential**

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$1651443
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$2537482

2. Commercial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$444012
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$219133

3. Industrial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$146069
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$136322

4. Institutional / Government

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$135796
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$98033

5. Irrigation

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

6. Other

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$1320549
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$1069909

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 2/2/07

BMP 12: Conservation Coordinator

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name: Santa Barbara Water Agency
5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 50%
 - b. Coordinator's Name Rhonda Gutierrez
 - c. Coordinator's Title Water Conservation Coordinator
 - d. Coordinator's Experience and Number of Years 0 yrs 4 mos
 - e. Date Coordinator's position was created (mm/dd/yyyy) 1/1/1999
6. Number of conservation staff, including Conservation Coordinator. 3

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	13093	25186
2. Actual Expenditures	2539	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 13: Water Waste Prohibition

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

The Rule states that no person, company, corporation etc.. shall knowingly use water wastefully. If a customer is found to have violated rule 28 then that customers service will be shutoff at the meter until such time that the violation is corrected.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

CVWD

Rules & Regulations, Rule No. 28

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

- | | |
|--|-----|
| a. Gutter flooding | yes |
| b. Single-pass cooling systems for new connections | no |
| c. Non-recirculating systems in all new conveyor or car wash systems | yes |
| d. Non-recirculating systems in all new commercial laundry systems | yes |
| e. Non-recirculating systems in all new decorative fountains | yes |
| f. Other, please name
Unrepaired leaks | yes |

2. Describe measures that prohibit water uses listed above:

When a field person sees a violation he reports it to the office. The Office will contact the customer to have them correct the violation. If the customer does not correct the violation the water is shut off.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|--|-----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | yes |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | no |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. | no |
| c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. | no |

4. Does your agency include water softener checks in home water audit programs? yes

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 14: Residential ULFT Replacement Programs

Reporting Unit: **Carpinteria Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	0	0

- 6. Describe your agency's ULFT program for single-family residences.
- 7. Describe your agency's ULFT program for multi-family residences.
- 8. Is a toilet retrofit on resale ordinance in effect for your service area? no
- 9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

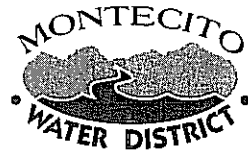
Because Residential new construction is at very low rate in the District much of development consists of remodels and expansions. As a condition of these remodels or expansions the District requires replacement of high use fixtures including Toilets.

D. Comments

Appendix J

Examples of Public Education Materials

Ortega Reservoir Improvement Project

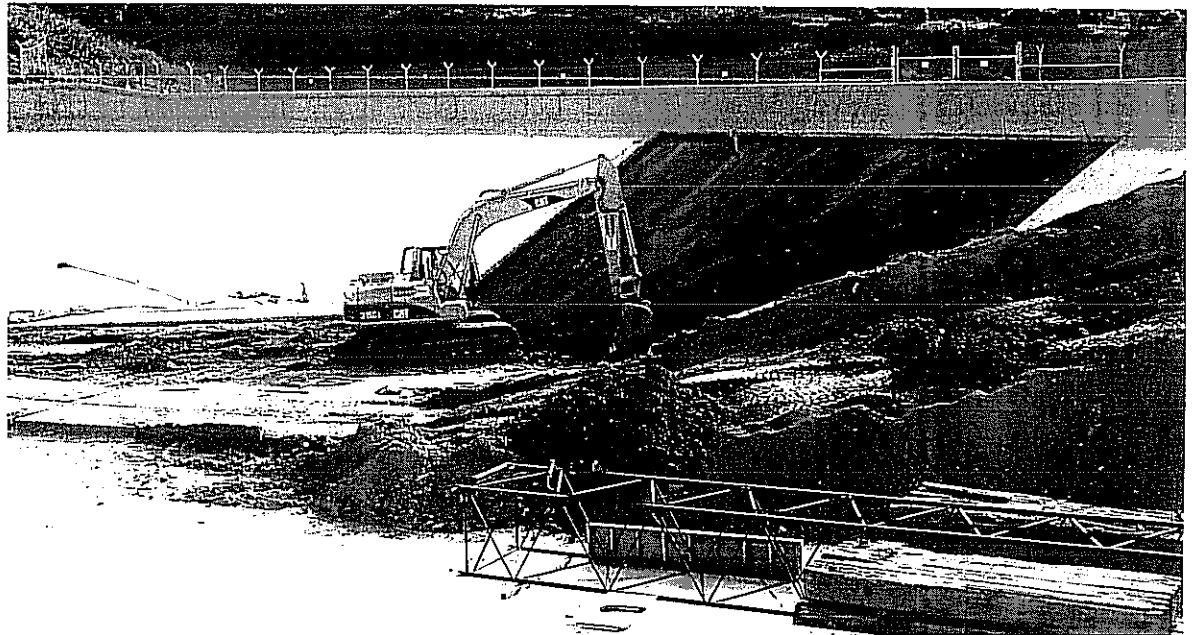


A Special Bulletin from
Montecito Water District and
Carpinteria Valley Water District



PLEASE BE READY TO REDUCE WATER USE DURING APRIL-JUNE HOT DAYS

Your Water District urges you to be prepared to reduce your water use if there is an unusual hot spell during the April-June construction period at Ortega Reservoir.



Construction Underway At Ortega Reservoir

Ortega reservoir stores much of the drinking water needed to supply customers in Montecito, Summerland and Carpinteria Valley. Because of concerns about meeting mandated water quality standards, a construction project is underway to help assure the quality of the drinking water stored in the reservoir.

April-June Is Critical Construction Period

Recent record rains have delayed construction of the divider wall at Ortega Reservoir, pushing completion of the work into the April-June period. If a period of unusually hot weather should occur during this time, water demand could climb significantly. With the reservoir empty during construction, it could be challenging to meet customers' peak demands.

Doing Work Now Avoids Additional Costs

One alternative to this scenario is to stop work on the divider wall during April-June and resume in the fall. This would delay completion of the project for nearly a year, increase costs by \$300,000, and delay improving water quality. Proceeding this spring not only saves money; it assures full funding of a low-interest State loan.

Following careful consideration of all options, the water districts have concluded that the best course is to complete this phase of construction now. Construction will be completed by the end of June and the reservoir returned to full service.

Customer water supplies will be adequate but limited during April-June.

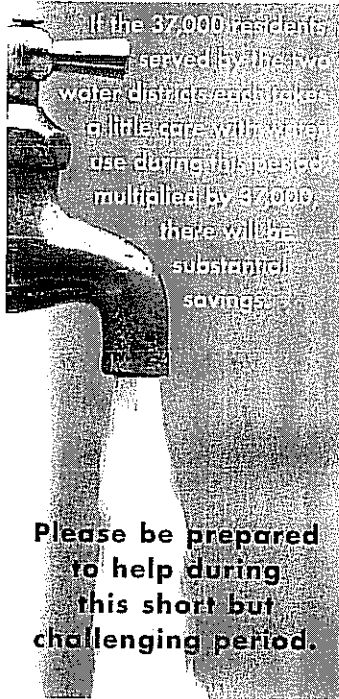


All customers are urged to be ready to adjust water use in the event of unusually hot weather.

Will There Be Enough Water?

What Your Water District Is Doing To Increase Supplies

Montecito and Carpinteria Valley Water Districts have developed interim plans that should assure adequate water supply during the spring construction period. Agreements among Montecito, Carpinteria and Santa Barbara, along with system interconnections and increased production from water wells are expected to meet essential customer needs. But the situation would be greatly eased by reduced water usage by customers in the event of hot weather in April-June.



If the 37,000 residents served by these two water districts each take a little care with water use during this period multiplied by 37,000, there will be substantial savings.

Please be prepared to help during this short but challenging period.

Why The Reservoir Must Be Covered

Water Quality Issue

Water delivered to Ortega Reservoir is already treated. But the uncovered body of water is currently exposed to wind blown debris, animals, and other contaminants, requiring heavy chlorination to meet drinking water standards. Since excessive chlorination can have unhealthful effects, reservoir operators monitor water quality constantly to assure that it is safe.

Project Will Provide Many Benefits

The Ortega Reservoir Improvement Project is designed to protect water quality by placing a roof over the reservoir and adding facilities to improve water circulation.

Currently the reservoir is empty, as work progresses on installing a center wall to support the roof and enhance circulation. This work is expected to continue until June 2005. Next year, the roof will be installed and the project completed. Ortega Reservoir water will be able to meet upcoming, and even stricter, federal and state drinking water standards.



Check this website for updates: www.montecitowater.com

Montecito Water District: Tel. 805-969-2271
 Carpinteria Valley Water District: Tel. 805-684-2816
 Email: info@cvwd.net

Questions? Call Your Water Agency

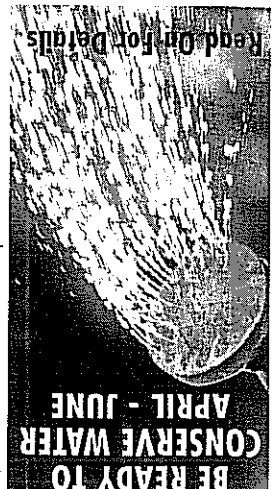
1301 Santa Ynez Ave, Carpinteria, CA 93013
 805-684-2816
 Email: info@cvwd.net



583 San Ysidro Road Montecito, CA 93108
 805-969-2271
montecitowater.com



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Water News

Winter 2005

Carpinteria Valley Water District Board of Directors

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Vice President

Jim Drain
Bob Lieberknecht
Matt Roberts

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General Manager

Suzie Lara

Engineering
Bob McDonald
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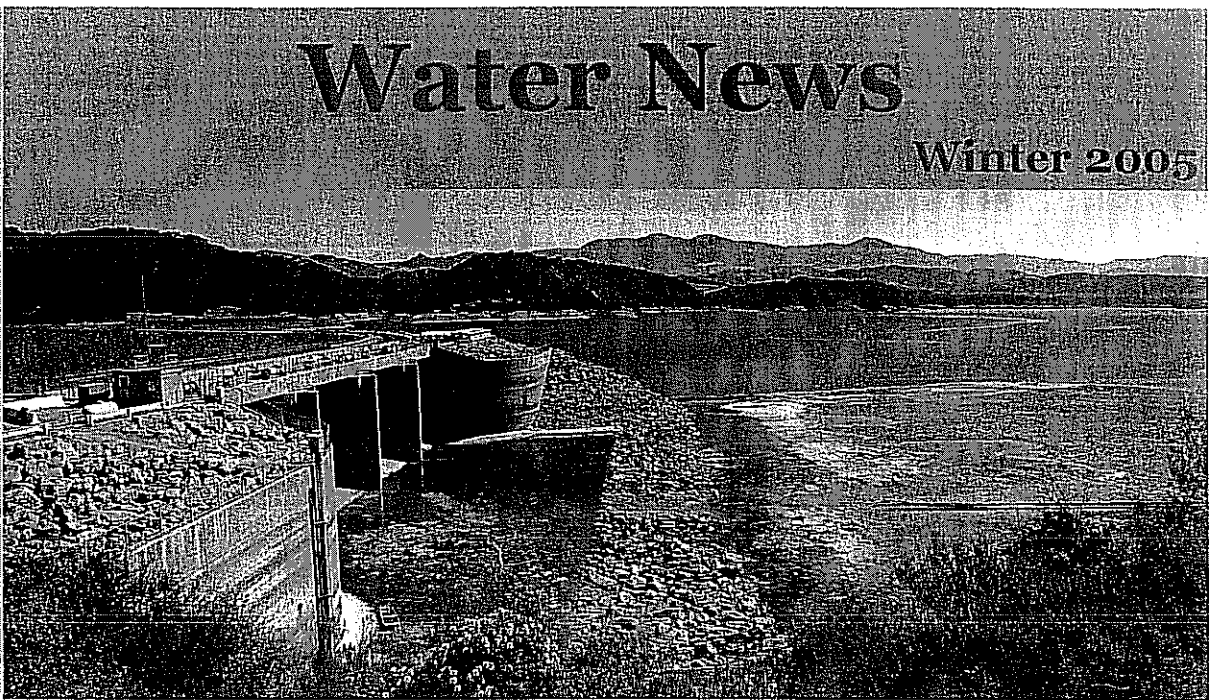
Brian King
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Tootie Maier
Patty Rodriguez

Field
Omar Castro
Superintendent

Gabe Jaimes
Jon Macias
Joey Mendoza
Jon Paola
Danny Rada
Daniel Rodriguez
Ted Sampson



Although recent storms replenished Lake Cachuma, conservation is essential to maintaining a sufficient water supply.
photo courtesy of Santa Barbara News Press

Water Conservation and Efficient Water Use Prolong the Availability of Water Resources

Water conservation and efficient water use is a lifestyle that benefits you, the community, and our water resources. There are several steps you can take in order to reduce your water use and increase its efficiency.

Complimentary Residential Water Savings Survey

One important step toward saving water is understanding where your water is currently being used. A residential water savings survey is offered at no cost to CVWD customers. Via the survey, you will learn how to conserve water by reviewing your landscape, irrigation and indoor plumbing systems.

Stop those leaks.

Check your indoor water appliances and devices for leaks. Many silent leaks allow water and your money to go down the drain. Studies have shown homes can waste more than 10% due to leaking, which costs both you and the environment.

Replace your old toilet, the largest water user inside your home.

Toilets made prior to 1993 use anywhere from 3.5 gallons per flush (gpf) up to 8 gpf. New high efficiency toilets are mandated to use 1.6 gpf or less.

Replace your clothes washer, the second largest water user in your home.

Energy Star rated washers that also have a **Water Factor** at or lower than 9.5, use 35-50 % less water and 50% less energy per load.

Plant water conserving gardens with proper landscape design and irrigation.

Select plants that are appropriate for our local cli-

mate. Consider the trend toward Xeriscape—using “low water use” plants, a more natural, native landscape or wildscape. A list of “Green Gardener Certified” landscape and gardening professionals is available in our office. These professionals promote and utilize resource efficient landscaping practices.

Water only what your plants need.

Most water is wasted in your garden by watering when your plants do not need the water or by not maintaining the irrigation system. Consider installing a weather adjusting ET irrigation controller that automatically saves water by not watering when the plants don't need the water.

If you have questions about watering, water conservation tools for your garden, or would like a complimentary water savings survey, please call (805) 684-2816.

Save Water, Save a Buck Rebate Program

Businesses can save money and water by participating in the “Save Water, Save a Buck” Rebate Program. Rebate dollars will be given for the replacement of water guzzling toilets, urinals, and washing machines with water efficient ones – ultra low flush toilets and urinals, waterless urinals, and high efficiency clothes washers. For more information, phone 1-800-215-7559 or log onto www.sbwater.org

Carpinteria Reservoir Cover

This \$6 million project is now almost completed. The new cover, a response to the California Department of Health Services 1995 policy addressing open reservoirs, has resulted in dramatically improved drinking water quality and a much more secure facility. It has been funded by a low interest loan from the California Department of Health Services.

Water Storage Tank

This \$7.5 million project has progressed through the environmental review and permitting phase, and the annexation has been completed. Design is nearly complete and the District hopes to begin construction by spring of 2005. The Project consists of the construction of a **3.0 million gallon (MG) underground water storage tank** and related facilities for District purposes, **annexation** to the District of 2,265 acres of mostly Rancho Monte Alegre (RMA) lands, and construction of **water facilities for purposes of serving RMA properties.**

The 3 MG tank will have long lasting benefit to the District. It will enable efficient utilization of District wells, help the District meet the new and more stringent water quality standards set by the EPA, and provide local independence and reliability for the delivery of water to most all of the customers within the City of Carpinteria. The annexation enables RMA to obtain District water to support 300 acres of avocado and olive orchards as well as serve existing and future home sites on the ranch.

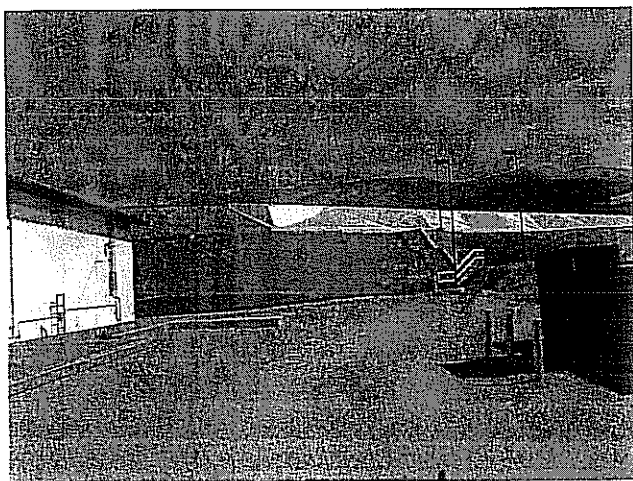
All annexation and RMA facility costs are being paid for by the ranch owners. District project costs will be funded by proceeds from the January 2000 sale of Certificates of Participation (COPs) if grants or a loan from the State of California are not obtained.

Ortega Reservoir Cover

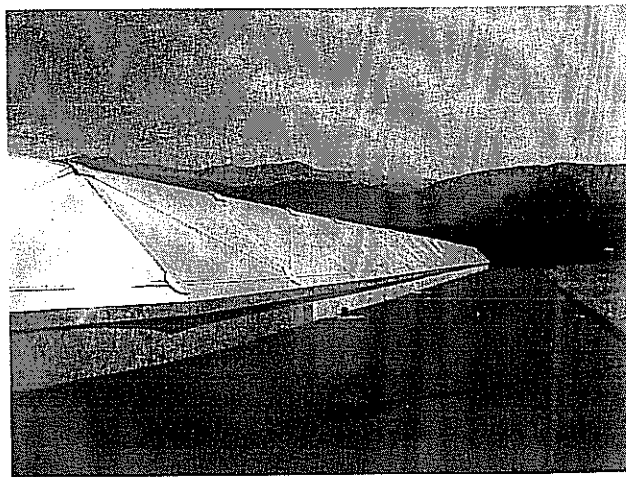
The first phase of this \$17 million project, planned for the same reasons as the Carpinteria Reservoir project, has begun. Located in Summerland in an area that is now served by the Montecito Water District, the federally owned Ortega Reservoir serves the Carpinteria Valley as well as the Summerland area. Montecito Water District is the lead agency for this project and is paying for half of the \$17 million cost. Carpinteria Valley Water District will utilize low interest loan funds from the California Department of Health Services to pay most of its \$8.5 million share of the Project, if no grant funds are obtained.

New Headquarters Well

This \$1.8 million well and iron and manganese filtration plant project is now almost completed. The well is a big producer, capable of up to 1,500 gallons per minute. The well project has been expanded to include injection capabilities with the assistance of a \$125,000 grant from the Department of Water Resources. This new well replaces the loss of groundwater supply associated with a failed well on the same District headquarters site nearby. A low interest loan from the Department of Health Services is funding this project.

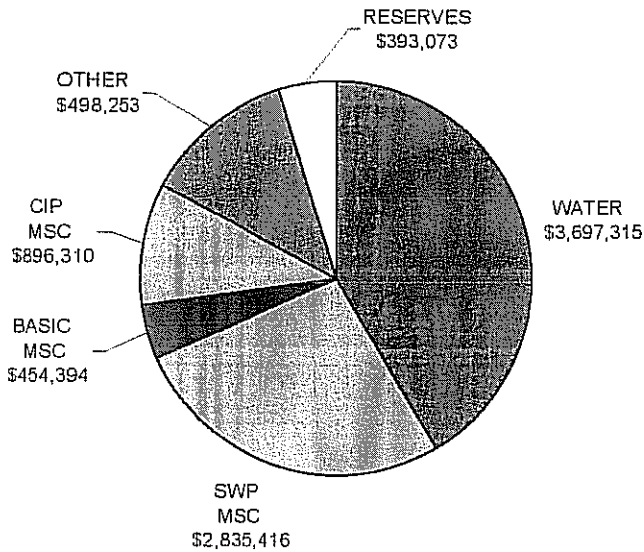


Views of the Carpinteria Reservoir cover.



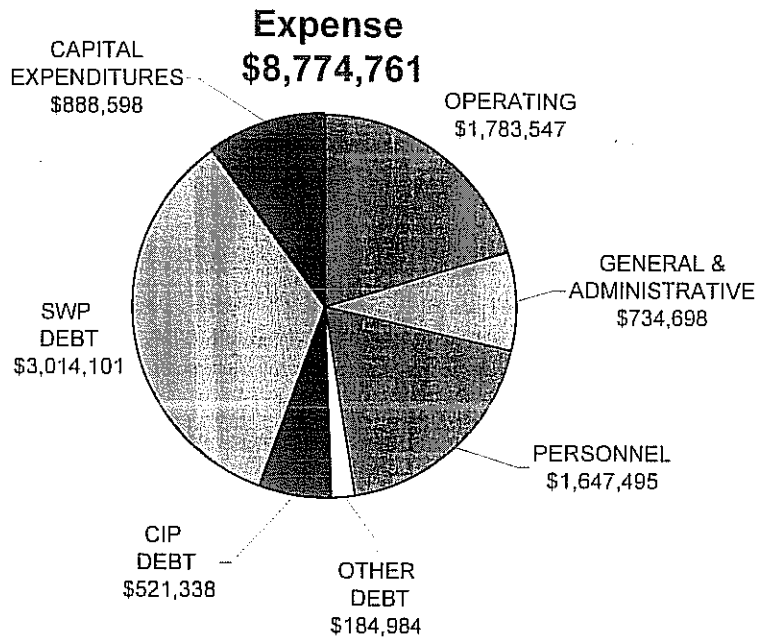
2004-2005 Budget

Revenue \$8,774,761



MSC - Monthly Service Charge
 CIP - Capital Improvement Program
 SWP - State Water Project

The CVWD Board of Directors unanimously approved its \$8.77 million FY 2004/2005 budget in July, including an operating budget of \$4.2 million, a debt service budget of \$3.72 million and capital expenditures of \$888,598.



The District's goal in preparing its annual budget is to ensure public participation so that concerns and priorities of customers are reflected in the Board's decisions. The Board, District staff and our customers are all concerned with keeping rates as low as possible. Following are important rate and budget meetings scheduled for this year:

<u>DATE</u>	<u>MEETING</u>	<u>TIME</u>	<u>LOCATION</u>
March 16, 2005	Community Meeting	7:00 p.m.	City Hall
<u>Adopt Budget</u> June 15, 2005	Board Meeting	4:00 p.m.	District

District Board meetings are typically the third and fourth Wednesdays of the month. Please see District website, www.cvwd.net, or call the District office for current information and dates.

*El Distrito es bilingüe
Favor de llamar con
cualquier pregunta sobre su
cuenta o el uso de agua.
Estamos aquí para asistirlos.*



Carpinteria Valley Water District

1301 Santa Ynez Avenue
Carpinteria, CA 93013
Phone 805-684-2816
Fax 805-684-3170
www.cvwd.net

New Employees



Daniel Rodriguez



Jon Paola



Esperanza Lopez

The District has hired three new employees; they are Daniel Rodriguez, Jon Paola and Esperanza Lopez.

Daniel, our new Serviceperson Helper, is a long time resident of Carpinteria and brings a strong work ethic and devotion to give the best quality customer service. Prior to his employment with the District, Daniel was working in the construction industry.

Jon Paola, our new District Water Treatment Operator/Distribution Operator, is also a long time resident of Carpinteria. Jon has an extensive background in the electrical industry and has worked on several water treatment projects prior to his commencement with the Carpinteria Valley Water District. Jon's attention to detail has enabled him to adapt very quickly to technical equipment and procedures.

Esperanza Lopez is the District's new Account Clerk II. A resident of Carpinteria, Esperanza has an extensive background in customer service. Esperanza's English/Spanish bilingual abilities help the District serve its Spanish speaking customers. Esperanza's great attitude & willingness to assist with all aspects of customer service have enabled her to quickly adjust to the District.

We welcome all three of these employees to our team and look forward to their future as part of the District team.



check your sprinkler system for leaks

Most sprinkler systems go on early in the morning when you are still sleeping. About once a month it's a good idea to turn your sprinklers on and check for leaks, overspray, and broken or misdirected sprinkler heads and emitters.



use Water-wise plants

Whether you are putting in a new landscape or slowly changing the current landscaping at your home, select water-wise plants that are appropriate for our local climate. A searchable water-wise plant database is available at sbwater.org.

For more information:

sbwater.org or call 805-568-3440

Provided by:

Family of Santa Barbara County Water Providers

how to be water-wise in Your Garden



sbwater.org

family of santa barbara county water providers



your garden can be a mystery. The average person uses twice the amount of water needed to keep plants healthy. However, simple adjustments can make a big difference.

Here are easy ways to save water outdoors:



An easy way to determine how much and how often to water your garden is by using the landscape watering calculator at sbwater.org. Just enter your zip code, type of soil, plants and sprinklers into the watering calculator and it will provide you with a schedule. Then adjust your irrigation controller accordingly.



Pressure that is too high causes the water exiting the sprinkler to turn to mist, which can be blown away by even just a gentle breeze. Install a pressure regulator to increase the efficiency of your sprinklers.



Have this inexpensive device wired to your irrigation controller and it will automatically shut off your sprinklers when it is raining.



If your irrigation controller's backup battery is dead, a power outage will cause it to reset to the default settings, watering about twice as much as necessary. Replace your battery as needed, at least once a year.



On many irrigation controllers today, there is a feature called "water budget", or seasonal adjust, which lets you easily change your watering schedule as the weather changes. Locate the water budget feature on your controller, then set the water budget to the weekly watering index. For your weekly watering index visit sbwater.org.



Smart irrigation controllers automatically calculate a scientifically-based irrigation schedule using several factors, including your plant and soil type. These controllers then adjust the irrigation schedule as local weather changes. Whether it is for your home or your business, with smart irrigation controllers, you'll spend less time and money maintaining your landscape. For the latest information on smart irrigation controllers, go to sbwater.org.

sbwater.org



COMMERCIAL REBATE PROGRAM

REBATES INCREASED
THE CITY OF SANTA BARBARA
FOR A LIMITED TIME!

SAVE WATER
 SAVE A BUCK
 in Santa Barbara County

Install High Efficiency Toilets, Urinals and Washing Machines and

SLASH YOUR WATER AND ENERGY BILLS!

UPGRADE YOUR BUSINESS WITH NEW EQUIPMENT!

LOWER YOUR MAINTENANCE!

We'll even give you rebate dollars

Ultra Low Flush Toilets
\$150-300 REBATE
 per fixture

Ultra Low Flush & Waterless Urinals
\$300 REBATE
 per fixture

High Efficiency Clothes Washers
\$350 REBATE
 per washer

REBATE PROGRAM FOR BUSINESSES

HIGH EFFICIENCY CLOTHES WASHERS

ULTRA LOW FLUSH TOILETS *or High Efficiency Toilets*
only 1.3 gallons per flush!

\$150 REBATE
 per fixture*

SAVE ABOUT \$60 ~ \$100 a year in water and sewer bill savings for each fixture installed

ULTRA LOW FLUSH & WATERLESS URINALS

\$300 REBATE
 per fixture

SAVE ABOUT \$60 ~ \$100 a year in water and sewer bill savings

*Rebate amounts vary depending upon the type of rebate authorized and the amount of the rebate. For more information on the application form, see the back of this brochure.

\$350 REBATE
 per HEW

High Efficiency Washers (HEWs) pay for themselves and...

USE 50% LESS ENERGY than traditional models

LOWER WATER, SEWER AND ENERGY COSTS associated with washing by 35-50%

SAVES YOU ABOUT \$1000 in reduced operating costs over the life of the machine as compared to traditional models

For an approved list of washers go to www.sbwater.org.

Please be aware that you may be eligible for additional rebate dollars for High Efficiency Washers from Southern California Gas Company. Call 1-800-GAS-2000 for more information.

*Increased rebate amounts are available on a first-come, first-served basis. If higher rebates are exhausted when you apply, you can still receive the original rebate amounts.

IT'S EASY TO GET YOUR REBATE!

If you are a commercial customer of one of the following water agencies:

- City of Santa Barbara
- City of Santa Maria
- Carpinteria Valley Water District
- Montecito Water District
- Goleta Water District
- City of Lompoc

SIMPLY FOLLOW THE STEPS BELOW

CALL 1-800-215-7559

A telephone representative will verify that funds are still available. Rebates are subject to available funds. A telephone representative will aid in verifying your eligibility, including product make and model numbers, prior to your purchase.

PURCHASE AND INSTALL qualifying models of toilets, urinals, and/or clothes washers.

FILL OUT THE REBATE APPLICATION on the back side of this brochure. Be sure to include your original sales receipt(s).

MAIL COMPLETED APPLICATION TO: Rebate Program, 128 E. Anapamu Street, Suite 240 Santa Barbara, CA 93101

- Rebate customers will be handled on a first-come, first-served basis.
- Program runs January 1, 2004-December 31, 2007, as funding is available.
- Customer may be required to have an on-site inspection.

For more information please call **1-800-215-7559**

Program is coordinated by the Santa Barbara County Water Agency. Visit our website at www.sbwater.org.



Commercial Rebate Application

Please complete numbers 1 through 8.

Please enclose the original sales receipts with your application.

1. Please check your Water Utility listed below:

- City of Santa Barbara Montecito Water District
 City of Santa Maria Goleta Water District
 Carpinteria Valley Water District City of Lompoc*

2. Your Business Service Address Information

Your Business Name _____

Street Address _____

Apt/Unit # _____

City _____

State _____ Zip Code _____

Do you own or rent the property? Own Rent

What type of Business do you operate? _____

3. Water Bill Account Number

Name on the Account _____

Account Holder's telephone # _____

Your telephone # _____

(if different than Account Holder)

Water Utility Account Number _____

4. Your Mailing Address

(All communication including check will be sent to this address)

Street Address _____

Apt/Unit # _____

City _____

State _____ Zip Code _____

ULTRA LOW FLUSH TOILETS AND URINALS

5. If your business is a RESTAURANT, FOOD STORE or WHOLE SALE ESTABLISHMENT, please complete the following section...

Tank-type Ultra Low Flush Toilets Installed:

Toilet Manufacturer	Model of Toilet(s)	# of Toilets of this manufacturer/model	Rebate \$ per Toilet	Subtotal Rebate \$
1.				
2.				
3.				

\$300

TOTAL: _____

Flushometer Ultra Low Flush Toilets Installed:

Toilet Manufacturer	Model of Toilet(s)	# of Toilets of this manufacturer/model	Rebate \$ per Toilet	Subtotal Rebate \$
1.				
2.				
3.				

\$300

TOTAL: _____

Urinals Installed:

Urinal Manufacturer	Model of Urinal(s)	# of Urinals of this manufacturer/model	Rebate \$ per Urinal	Subtotal Rebate \$
1.				
2.				
3.				

\$300

TOTAL: _____

*If your business is in the City of Lompoc you may be eligible for additional rebate dollars. Call 875-8299 for information.

ULTRA LOW FLUSH TOILETS AND URINALS

6. ALL OTHER BUSINESSES and SCHOOLS, please complete the following section...

Tank-type Ultra Low Flush Toilets Installed:

Toilet Manufacturer	Model of Toilet(s)	# of Toilets of this manufacturer/model	Rebate \$ per Toilet	Subtotal Rebate \$
1.				
2.				
3.				

\$150

TOTAL: _____

Flushometer Ultra Low Flush Toilets Installed:

Toilet Manufacturer	Model of Toilet(s)	# of Toilets of this manufacturer/model	Rebate \$ per Toilet	Subtotal Rebate \$
1.				
2.				
3.				

\$150

TOTAL: _____

Urinals Installed:

Urinal Manufacturer	Model of Urinal(s)	# of Urinals of this manufacturer/model	Rebate \$ per Urinal	Subtotal Rebate \$
1.				
2.				
3.				

\$300

TOTAL: _____

HIGH EFFICIENCY CLOTHES WASHERS

7. ALL BUSINESS TYPES, please complete the following section...

Clothes Washers Installed:

MUST BE CEE CERTIFIED

Washer Manufacturer	Model of Washer(s)	# of Washers of this manufacturer/model	Rebate \$ per Washer	Subtotal Rebate \$
1.				
2.				
3.				

\$350

TOTAL: _____

Route operators are eligible for rebates but must include a copy of a 5 year lease agreement showing address at which washers are located.

GRAND TOTAL All Rebates: \$ _____

8. Signature required for this rebate program

"I certify that the information contained on this application is true and correct, and that I have not previously participated in a local ULFT rebate program. I understand that rebate dollars are for customers of the participating water utilities and subject to available funds.

All toilets being submitted for rebates are 1.6 gallons or less and replacing non-1.6 gallon models. All toilets must be of commercial grade with elongated bowls and open front seats. The seat height must be between 17"-19" from the floor. The flush handle must be on the side of the fixture with the most space.

All urinals being submitted for rebates are 1 gallon or less and replacing non-one gallon urinals.

All washers being submitted for rebates are on the CEE approved washer list (www.sbwater.org).

I agree to the program requirements as stated on this application. I understand that my site may be subject to inspection as a requirement for rebate payment."

Name (print) _____

Signature _____

Date _____ E-mail _____

Mail Application & Receipts to:

Rebate Program, 123 E. Anapamu Street, Suite 240
Santa Barbara, CA 93101

Program Hotline: 1-800-215-7559



Attention Business Owners

Highest Rebates YET!

If you're thinking of replacing your old washing machines, toilets, or urinals with HIGH PERFORMANCE, MONEY SAVING APPLIANCES, now is the time!

LIMITED TIME ONLY!!! UP TO \$350 BACK!

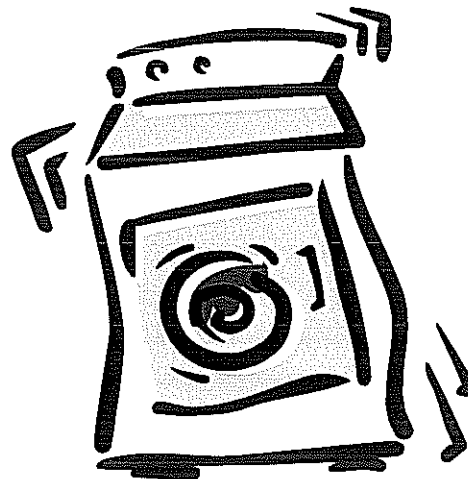
- Buy a high efficiency toilet, urinal, or washing machine, and receive the following rebates:

High Efficiency Toilets	\$150-\$300
Waterless or Low-Flush Urinals	\$300
High Efficiency Clothes Washers	\$350

- High efficiency washers can **save up to 50% of water and 50% energy costs** and are easier on clothes!
- High Efficiency Toilets and Low-Flush Urinals can **save you \$60-\$100 per fixture per year on water bills** and many High Efficiency toilets out perform standard models!
- Commercial, Industrial, and Institutional water customers only
- Visit www.sbwater.org/CIIRebateProgram.htm or call **1-800-215-7559** for rebate requirements
- www.flexyourpower.org to see if you're eligible for other rebates

Family of Santa Barbara County Water Providers
C/O Santa Barbara County Water Agency
123 E. Anapamu Street
Santa Barbara, CA 93101
Info: 1-800-215-7559
www.sbwater.org

family of santa barbara county water providers
sbwater.org
saving you water



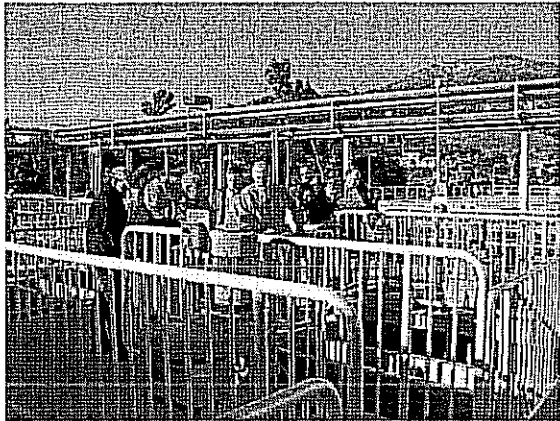


January 2006

Carpinteria Valley Water District

H₂KNOW

Cater Water Treatment Plant Tour



Members of the Water Issues Study Group and District employees participated in the Cater Water Treatment Plant tour led by Susan Thomson, Water Treatment Plant Superintendent, Ken Goodenough, Water Systems Manager and Paul Dunkley, Water Treatment Plant Supervisor. The event began with a discussion of the upcoming Federal water quality regulations and how Plant staff are preparing to meet the new more stringent disinfection by-product rules. The tour of the facility highlighted the recent upgrades to the treatment



facility, including computer automated controls, filtration beds, improved chemical regulation, and solids handling facility. The group also made stops at the City of Santa Barbara's Sheffield water tank project to view the landscaping underway and the Ortega Reservoir in Summerland to observe the ongoing reservoir covering. Members of the WISG group on the tour were Rodney Chow, Miguel Checa, Case VanWingerden, Phylene Wiggins and Alterio Banks. The group is planning a trip to Bradbury Dam in mid February, 2006. Anyone from the community interested in attending this event, should call Rhonda at the District office (805) 684-2816.

CVWD Fiscal Budget 2006-2007

Carpinteria Valley Water District is gearing up for it's annual budget process. The public is encouraged to attend Board meetings and submit comments regarding the proposed fiscal budget. The board meetings during this time period are currently scheduled as follows:

Wednesday, March 29th	7 p.m.	Carpinteria City Hall Council Chambers
Wednesday, April 19th	4 p.m.	CVWD Board Room
Wednesday, April 26th	4 p.m.	CVWD Board Room
Wednesday, May 17th	4 p.m.	CVWD Board Room
Wednesday, May 24th	4 p.m.	CVWD Board Room

Please call the District office to confirm dates and time.

The District Office
will be closed
January 16th
in observance of
Martin Luther King Jr. Day

In case of emergency,
call (805) 684-2816 for
assistance.

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ET Irrigation Controller



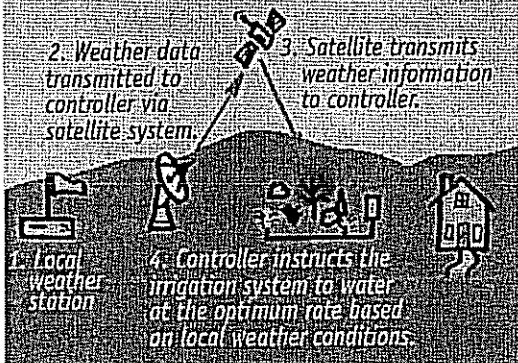
High-tech equipment uses local weather data to water your landscape with maximum efficiency!



The Linden-Meadows HOA is the first Carpinteria Valley Water District residential customer to participate in a countywide high-tech landscape water efficiency program that uses special weather stations to automatically transmit information about temperature and other factors via satellite to special sprinkler system controllers.

The controllers automatically use the data to adjust irrigation timing to match the actual needs of plants each day. A study by the Irvine Ranch Water District showed that the controllers save about 25% on water use.

Please phone Rhonda at (805) 684-2816 for more information or to schedule a site evaluation.



Thank You!

The Carpinteria Valley Water District thanks the generous Carpinteria community and District employees for their donations to the District's Holiday Gift Drive! Your gifts were distributed to needy families & court dependent children by way of the Santa Barbara Unity Shoppe and the Children's Auxiliary Toy Store. Each gift made a child's Christmas a little brighter.

Norma C. Rosales
Business Manager

Ask Us!

Q. Does CVWD sponsor the SB County High School Video Contest?

A. CVWD, in conjunction with Santa Barbara County Water Agency and other local water agencies sponsors the Water Awareness High School Video Contest. The contest is a potentially rewarding way for students to increase their awareness of the importance of water while earning cash prizes for their school. First prize is \$1000.00. This year's contest will focus on producing Public Service Announcements that promote water conservation and Santa Barbara County water efficiency programs currently underway in Santa Barbara County. Flyers and information have been sent to area high schools. **Each high school is asked to submit one entry.** For more information and contest guidelines, visit www.sbwater.org/VideoContest.htm. **Contest deadline is April 14, 2006.**

Please submit questions you would like answered via our newsletter by mail at P.O. Box 578, Carpinteria, CA 93014, fax (805) 684-3170 or email info@cvwd.net.



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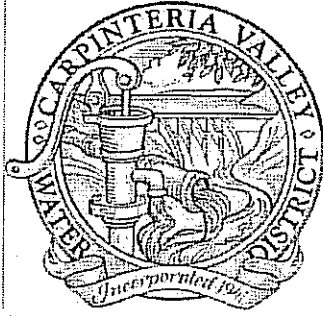
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Daniel Rodriguez
Greg Stanford

June 2006



Carpinteria Valley Water District

H₂KNOW

2006-07 Water Rates and Service Charges

The Carpinteria Valley Water District Board of Directors has approved the 2006-2007 Fiscal Year Budget with new water and service charge rates to take effect July 1, 2006. Customers will see the new rates for their July use on bills received in August. Below are the new rates:

Water Service Rates						
	2005-06 Water Rates			2006-07 Water Rates		
	Basic HCF	Pumping Level I ¹ HCF	Pumping Level II ² HCF	Basic HCF	Pumping Level I ¹ HCF	Pumping Level II ² HCF
HCF = 100 cubic feet = 748 gallons						
Residential:						
First 7 HCF:	\$2.38	\$2.48	\$2.58	\$2.51	\$2.74	\$2.96
Next 8 HCF:	\$2.95	\$3.05	\$3.15	\$3.11	\$3.34	\$3.56
All HCF thereafter:	\$3.33	\$3.43	\$3.53	\$3.51	\$3.74	\$3.96
Commercial, Industrial & Public Authority:	\$3.10	\$3.20	\$3.30	\$3.27	\$3.50	\$3.72
Agricultural / Irrigation*:	\$1.52	\$1.62	\$1.72	\$1.60	\$1.83	\$2.05

Monthly Water Meter Service Charges								
Meter Size:	2005-06 Monthly Charges				2006-07 Monthly Charges			
	Basic	SWP ³	CIP ⁴	Total	Basic	SWP ³	CIP ⁴	Total
5/8"	\$4.71	\$26.29	\$16.00	\$47.00	\$3.41	\$24.84	\$21.40	\$49.65
3/4"	\$4.71	\$26.29	\$16.00	\$47.00	\$3.41	\$24.84	\$21.40	\$49.65
1"	\$7.85	\$43.81	\$16.00	\$67.66	\$5.68	\$41.40	\$21.40	\$68.48
1 1/2"	\$15.70	\$87.63	\$16.00	\$119.33	\$11.35	\$82.80	\$21.40	\$115.55
2"	\$25.12	\$140.20	\$16.00	\$181.32	\$18.16	\$132.48	\$21.40	\$172.04
3"	\$50.24	\$280.40	\$16.00	\$346.64	\$36.32	\$264.96	\$21.40	\$322.68
4"	\$78.50	\$438.13	\$16.00	\$532.63	\$56.75	\$414.00	\$21.40	\$492.15
6"	\$157.00	\$876.25	\$16.00	\$1,049.25	\$113.50	\$828.00	\$21.40	\$962.90
8"	\$361.10	\$2,015.38	\$16.00	\$2,392.48	\$261.05	\$1,904.40	\$21.40	\$2,186.85

¹ Pumping Level I = 350 feet above sea level

² Pumping Level II = 650 feet above sea level

³ SWP = State Water Project

⁴ CIP = Capital Improvement Program (charged per dwelling unit)

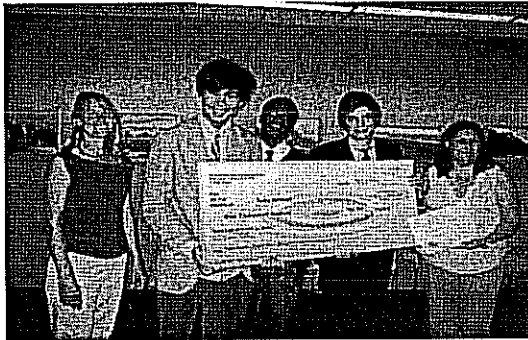
*All Type II Irrigation accounts with at least one dwelling unit will be assessed a \$18.45 Residential Equivalency Fee per dwelling unit.

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High School Video Contest Winners

Congratulations to Cate School's Colin Macfadyen, Folu Obatusin, David Kwan, Jordan Bailey and Marty Moroski on their FIRST PLACE finish at the 7th Annual Santa Barbara County Water Awareness High School Video Contest held on May 24th in the Townley Room at the Santa Barbara Downtown Library. In addition to winning \$1,000 for their school, the students will see their video used as a public service announcement on local television stations, including Santa Barbara Government Access Television Channel 20. A special "Thank You" is extended to teachers Cheryl Powers and Julie Garrison for promoting the video contest within the Cate School community. The winning video, "Landscaping with Native Species" focused on gardening with indigenous plants, drought tolerant and low-water species as an aesthetically pleasing alternative for landscaping in Santa Barbara County and the Carpinteria Valley.

Pictured below, left to right, are Elise Stephens with the City of Santa Barbara, Cate School students - David Kwan, Folu Obatusin, and Colin Macfadyen, and Rhonda Gutierrez, Engineering Technician for Carpinteria Valley Water District.



Ask Us!

Q. When working in the yard, I'm tempted to take a drink from my garden hose. Is this safe?

A. No, if you use a standard vinyl garden hose which has unhealthy substances in it to keep the hose flexible. Yes, if you have a garden hose made with a "food-grade" plastic that is approved by the US Food and Drug Administration and will not contaminate the water. However, the outside thread opening at the end of either type of hose could be covered with chemicals or germs from a previous use and potentially harmful if ingested.

Please submit questions you would like answered via our newsletter by mail at P.O. Box 578, Carpinteria, CA 93014, fax (805) 684-3170 or email info@cvwd.net.



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August 2006

Carpinteria Valley Water District

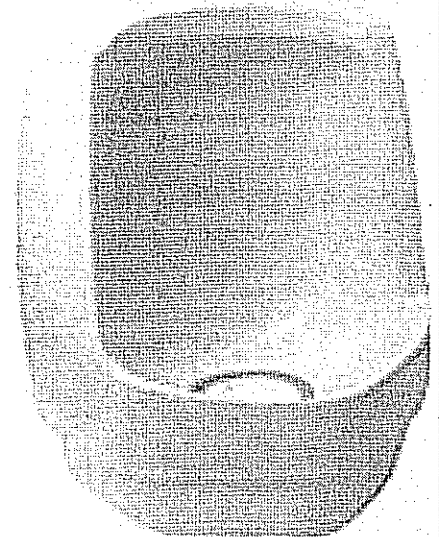
H₂KNOW

CVWD Board of Directors Election

The filing period for candidacy on the Carpinteria Valley Water District Board of Directors began on July 17th and runs through August 11th. Anyone interested in running for office must be a Carpinteria resident and submit to the county clerk an endorsed nomination paper signed by no less than 20 people who live within the District's limits. An optional candidate statement may also be prepared; it requires a \$600 deposit. The filing period will close on August 11th, unless an incumbent decides not to run; then the filing period is extended until August 16th. For more information and necessary paperwork, consult the County Elections Office 568-2200, 105 E. Anapamu Street, Santa Barbara.

Waterless Urinal

CVWD has installed a waterless urinal at its District facilities. The urinal was donated courtesy of Falcon Waterfree Technologies. The District is committed to encouraging and utilizing water saving technologies in an effort to promote efficient water use; water that is not wasted increases our water supply. The urinal installed at the District, will save approximately 40,000 gallons of water each year! If you would like to know more about water efficient toilets or waterless urinals, please contact Rhonda at (805) 684-2816.



El Distrito es bilingue. Favor de llamar (805) 684-2816 con cualquier pregunta sobre su cuenta o el uso de agua, estamos aqui para asistirlos.

Water Efficiency in the Kitchen

The kitchen is an excellent place for conservation. Be especially conscious of running water and develop the habit of shutting off the tap whenever possible.

Reduce Evaporation When Cooking

- Boiling requires very little water if you use a tight fitting lid to conserve moisture.
- By steaming you can save all the vitamins and minerals, too. But if you do boil vegetables, save the water for soups and sauces... they will be tastier and more nutritious.

Save Tap Water by Planning Ahead

- Remove ice cubes from the freezer a few minutes before you need the ice. The cubes will loosen at room temperature and will save several quarts of water if they are not run under the tap.
- Don't quick-thaw meats under the faucet either. Take frozen foods out of the freezer in time to thaw naturally.
- Keep a bottle of drinking water in the refrigerator. This ends the wasteful practice of running tap water to cool it off for drinking.

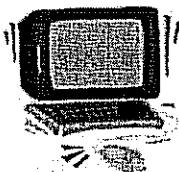
Department of Water Resources Website

Interested in water issues facing our state? Visit the Department of Water Resources website at www.dwr.water.ca.gov to access reports concerning the State Water Project's (SWP) delivery reliability and a DWR report which looks at how climate change impacts our water resources.

Ask Us!

Q. I wasn't able to participate in the previous **Water Issues Study Group**. Will the study group be available again so that I may participate?

A. The **Water Issues Study Group** will meet from September to April, if enough people are interested. Please phone Rhonda at (805) 684-2816 for more information or to sign up.



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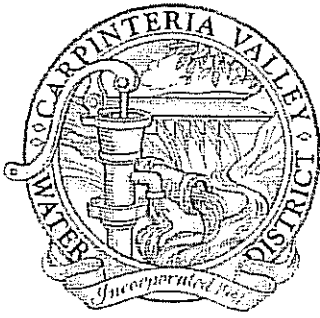
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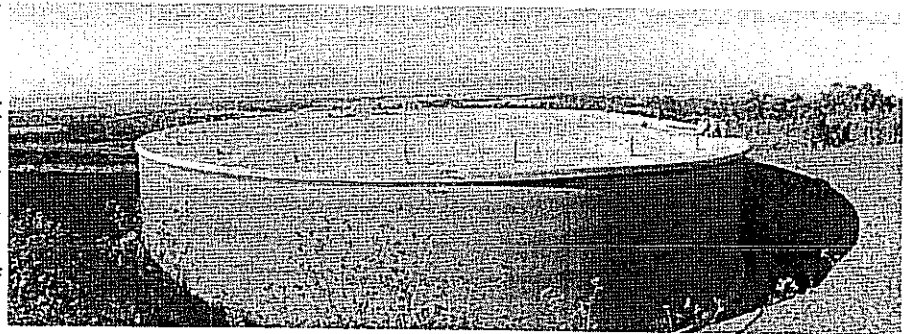
December 2006

Carpinteria Valley Water District

H₂KNOW

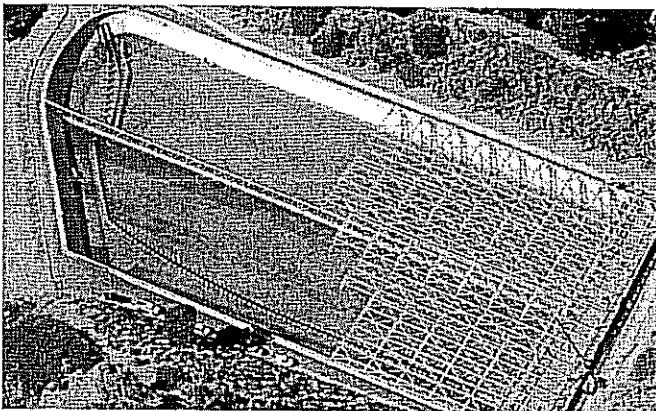
3 Million Gallon Storage Tank Update

The construction of the District's three million gallon tank has been completed and the backfill operation will begin in the next several weeks. The tank will be completely buried and landscaped to minimize any visual impact on the Carpinteria Valley. The Project is one of several CVWD projects that will help the District to meet new water quality regulations as well as bolster the water delivery reliability. The tank and associated infrastructure are expected to be put into service by April of 2007.



Ortega Reservoir Update

Recent water quality testing in the Ortega Reservoir indicated an elevated presence of bacteria including some coliform bacteria. The Montecito Water District staff took remedial action to fix the problem by maintaining chlorine residual in the reservoir. Additional follow up analysis showed no presence of coliform bacteria in the reservoir. In addition, samples were taken in the distribution systems of both Montecito and Carpinteria water districts to ensure the purity of the water supply. All samples showed no presence of coliform bacteria. The Reservoir has since been taken out of service and drained for cleaning and construction work. Pictured below is the Ortega Reservoir cover being constructed. After the cover is complete the potential for bacterial contamination will be greatly reduced.



Holiday Schedule

The District Office will be closed on Monday, December 25th and Monday, January 1st in observance of the Christmas and New Year's Day Holidays.

In case of emergency, call (805) 684-2816 for assistance.

*Happy Holidays from the
Board of Directors and Staff!*

El Distrito es bilingue. Favor de llamar (805) 684-2816 con cualquier pregunta sobre su cuenta o el uso de agua, estamos aquí para asistirlos.

ET Irrigation Controllers

CVWD has several ET Irrigation Controllers available for residential customers who wish to participate in a countywide high-tech landscape water efficiency program.

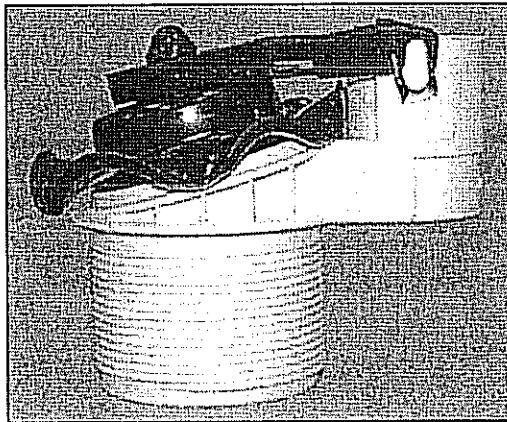
The controllers automatically use data collected from weather stations to adjust irrigation timing to match the actual needs of plants, especially grass, each day.

Please phone Rhonda at (805) 684-2816 for more information or to schedule a site evaluation.

Toilet Flapper Replacement

Leaking toilets cause more water waste than any other fixture in the home. Even a silent toilet leak (that's one you normally can't hear) will waste from 30 to 500 gallons of water per day! The leaks you can hear will waste much, much more. Such wastage can normally be attributed to a faulty water level adjustment or to a leaky flapper.

In order to find out if the flapper needs replacement, put some food dye in the tank and then leave for 15 minutes. When you return, look into the toilet bowl to see if the water has changed from clear to the color of the dye. Dye colored water, a hissing sound or visible water running in your bowl are indications that it is time for a new flapper valve!



Ask Us!

Q. Is there a website you can direct me to that has information regarding the maintenance of waterless urinals?

A. Yes, you can find general cleaning guidelines at www.buildings.com/Articles/detailBuildings.asp?ArticleID=3188 or if you wish specific guidelines from Falcon Waterfree Technologies (the company that donated the waterfree urinal to the District), you can download instructions in English and Spanish from their website, www.falconwaterfree.com/pdf/028-EN-ES.pdf

Please submit questions you would like answered via our newsletter by mail at P.O. Box 578, Carpinteria, CA 93014, fax (805) 684-3170 or email info@cvwd.net.



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April 2007

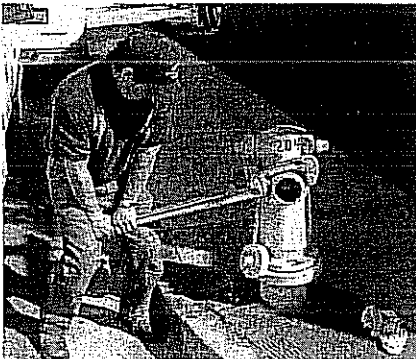
Carpinteria Valley Water District

H₂KNOW

Happy Retirement, Gabe Jaimes

Congratulations to Gabe "Pockets" Jaimes, who after twenty one and a half years of service as a Water Utility Worker and Customer Service Representative, is retiring from the Carpinteria Valley Water District. Gabe's friendly and can-do attitude as well as his strong work ethic has made him an outstanding and valuable member of the Carpinteria Valley Water District team. Gabe is a dedicated employee who is always willing to go above and beyond the call of duty when helping customers and fellow employees. Customers have described Gabe as "wonderfully knowledgeable, helpful, pleasant, and efficient." One customer stated, "The quality of attention given by Mr. Jaimes was exemplary." Another said, Gabe "made having pressure regulator problems an educational experience, rather than a disaster!" Fellow employees echo the sentiments of CVWD's customers; expressing what a pleasure and honor it has been working with Gabe.

Fortunately, Gabe is a resident of Carpinteria and we will have opportunities to see him around town. We wish him a happy and relaxing retirement; he will be greatly missed by all of his co-workers.



2007/08 Fiscal Year Budget

The District's budget process is well underway. The Proposed Fiscal Year 2007/08 Budget includes:

- Revenue of \$10.6 million, an increase of \$768,000 over the current year.
- Operating Expenses of \$5.35 million, an increase of \$652,000 over current year.
- Debt Service of \$5.2 million, an increase of \$447,229 over current year.

Please refer to your Notice of Public Hearing included with your monthly bill for further details. A public hearing is scheduled for May 23, 2007 at 7:00pm at the District office. You may also contact Charles Hamilton, General Manager/Secretary, at 684-2816 if you have any questions about the budget process or the proposed Water Rates and Charges increases.

April Board of Director Meetings

The Board Meetings for the month of April will be: **Wednesday April 11th**
Wednesday April 18th

The meetings will be held at 4 p.m. in the District's Board Room located at 1301 Santa Ynez Avenue.

Earth Day



2007 South Coast Earth Day Festival
Sunday, April 22nd
10 am to 5:30 pm
Santa Barbara County Courthouse
Sunken Gardens.

The Earth Day festival features a children's activity area, live music from the solar-powered stage, free bicycle check-ups, an "energy village", presentations of new and upcoming technologies by environmental entrepreneurs and innovators, a Green Car Show and over 130 commercial and non-profit booths.

Rebates Increased for Commercial, Institutional, and Industrial Customers

Rebate amounts have been increased for the Santa Barbara County Rebate Program, Save Water, Save a Buck Program! The program will be available for a limited time, so business owners now is your opportunity to get rid of high water using toilets, urinals, and clothes washers by replacing them with water efficient ones. Businesses can expect to see about \$60-100 a year in water and sewer bill savings for each fixture installed, along with reduced energy costs for clothes washers. The rebate amounts are:

Toilets - 1.6 gallons or less	\$150.00 to \$300.00
Waterless or Low-Flush Urinals	\$300.00
High Efficiency Clothes Washers	\$350.00

Rebates are provided for commercial, industrial, and institutional water customers only; no rebates are given to single-family residential water customers. Fixtures must be purchased by December 31, 2007 and installed in the service area of one of the sponsoring water districts.

Rebates are offered in the service areas of the following program sponsors: Carpinteria Valley Water District, City of Santa Barbara, City of Lompoc, City of Santa Maria, Goleta Water District, and Montecito Water District. Businesses interested in their bottom line and saving water for our future, should visit www.sbwater.org or call the "Save Water, Save a Buck" hotline at 1-800-215-7559. This program funded by the California DWR Prop 13 Water Use Efficiency Grant Program.

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Appendix K

Selected District Resolutions

Appendix II

RESOLUTION NO. 547

RESOLUTION OF THE BOARD OF DIRECTORS
 CARPINTERIA COUNTY WATER DISTRICT
 DECLARATION OF WATER SHORTAGE EMERGENCY

WHEREAS, the CARPINTERIA COUNTY WATER DISTRICT is a County Water District organized and existing under the laws of the State of California, situated and serving an area entirely within the County of Santa Barbara, State of California; and

WHEREAS, this District provides water service for agricultural, commercial, industrial, recreational and domestic use within the District; and

WHEREAS, the water supplies currently available to this District for distribution to its customers on an annual basis (including calendar year 1990) is as follows:

- | | |
|--|--------------------------|
| (1) The basic contractual entitlement from the Cachuma Project for the current contract year is: | 3,300 acre feet |
| Less a 45% reduction because of the drought. | - <u>1,485</u> acre feet |
| | net 1,815 |
| (2) Well production from the underground (approximate) for three existing District wells. | <u>3,500</u> acre feet |
| Total (approximate) | 5,315 acre feet |

and;

WHEREAS, the total consumer demand that was delivered during calendar year 1989 was 6,280 acre feet; and

WHEREAS, said demand is estimated and projected to reach approximately 6,500 acre feet at the end of the 1989-90 Cachuma Water Year (May 15, 1989 - May 14, 1990) because of continuing drought conditions; and

WHEREAS, this District will probably be required to transfer approximately 260 acre feet to other Districts during the coming water year; and

WHEREAS, based on available supplies and estimated demand, this District is faced with an estimated and projected water shortage deficit for calendar year 1990 of approximately 1225 acre feet; and

WHEREAS, studies show that the safe yield of the underground basin is approximately 5,000 acre feet and private pumping will be at an estimated rate of approximately 1,200 acre feet per year. And, whereas the District plans to place into production the newly completed High School Franklin Well and plans to drill an additional well, the total yield of these wells is subject to contingencies not under the exclusive control of the District, and for this reason this program might not be able to produce the additional water required by this District to meet future demand; and

WHEREAS, in the best interests of the health and safety of the residents and water consumers of this District, it is necessary to establish water use regulations until such time as the District's available water supplies are augmented to an extent sufficient to meet projected demands; and

WHEREAS, unless the District is able to develop and/or contract for supplemental sources of water, immediate mandatory conservation, and possible future rationing, must be instituted for the District as a continuing procedure; and

WHEREAS, notice of time and place of a public hearing by this Board of Directors was duly given and published, and at said hearing on January 31, 1990, consumers of the District's water supply were given an opportunity to be heard to protest against a declaration that a water shortage emergency condition prevails within the District and given the opportunity to present their respective needs to the Board of Directors of this District, and said protests and presentations have been duly received and considered by the Board of Directors;

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE CARPINTERIA COUNTY WATER DISTRICT HEREBY FINDS, DETERMINES, DECLARES AND RESOLVES AS FOLLOWS:

1. For all of the reasons set forth in the recitals above, a water shortage emergency condition prevails within the area served by this District, which emergency is caused by an existing and a threatened continuing water shortage as defined in Sections 350 and 31026 of the Water Code;

2. The ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of this District to the extent that there would be insufficient water for human consumption, sanitation and fire protection;

3. Because of said emergency it has become necessary to do some or all of the following at the appropriate times: (a) restrict the use of District water, (b) prohibit the wastage of District water, and (c) to prohibit use of District water during the period of the emergency for specific uses which the District may from time to time find to be non-essential;

4. To implement some or all of the actions set forth above it will be necessary for the Board of Directors of the District to adopt regulations, restrictions and ordinances on the delivery and consumption of water as will, in the sound discretion of the Board of Directors, conserve the water supply for the greatest public benefit with particular regard to household and domestic use, sanitation and fire protection. Said regulations and restrictions may contain provisions for mandatory conservation an allocation program and, if deemed appropriate, the prohibition on new water service connections and for the termination of discontinuing service to consumers wilfully violating the regulations and restrictions. Said regulations may, after allocating and setting aside the amount of water which in the opinion of the Board of Directors will be necessary to supply water needed for household domestic uses, sanitation and fire protection, establish priorities in the use of water for other purposes and provide for the allocation, distribution and delivery of water for such other purposes, without discrimination between consumers using water for the same purpose or purposes;

5. It is the Board's present intent, but it shall not be limited hereby, to take the following steps pursuant to the

authority conferred by law and this resolution: (a) to adopt programs to encourage water consumers to conserve water, (b) to prepare and at the proper time institute rationing rules and regulations, and (c) to attempt to resolve the threatened water shortage at the earliest possible date and to take all such other actions as may be allowed under the law;

6. All of the recitals herein above set forth are hereby adopted as findings of the Board of Directors of this District upon all of the matters set forth in Sections 350 through 358 and Sections 31026 through 31029 of the Water Code.

Vote on the Resolution by roll call resulted as follows:

AYES: HICKEY, BAILEY, BRADLEY, FOX, SULLWOLD

NAYES: NONE


ABSENT: NONE

DATED: January 31, 1990

APPROVED:


Harold H. Sullwold, President

ATTEST:


Robert R. Lieberknecht, Secretary

(SEAL)

rmj/6456-45/resol.547

Appendix III

ORDINANCE NO. 90-1

AN ORDINANCE OF THE CARPINTERIA COUNTY
WATER DISTRICT PERTAINING TO DROUGHT
REGULATIONS AND WATER CONSERVATION STANDARDS

BE IT ORDAINED by the Board of Directors of the
Carpinteria County Water District as follows:

Section 1. Declaration of Water Shortage Emergency.

The Board has conducted a duly noticed public hearing on January 31, 1990, to determine whether a drought-induced water shortage emergency exists and, if so, what regulations should be adopted in response to the shortage. By Resolution No. 547, dated January 31, 1990, the Board of Directors of the Carpinteria County Water District declared a water shortage emergency to prevail within the boundaries of the Carpinteria County Water District.

Section 2. 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 the use of all water obtained by or through the distribution facilities of the District shall be governed and controlled by the provisions of this Ordinance.

Section 3. Definitions. The following terms are defined for the purposes of this Ordinance.

(a) "Customer" means the person or entity responsible for payment for water service at a particular property, as shown in the District's water billing records.

(b) "District" means the Carpinteria County Water District.

(c) "Board" means the Board of Directors of the District.

(d) "Manager" means the General Manager of the District.

(e) "Consumer" means every person, firm, trust, partnership, association, corporation, city, county, state or local agency, political subdivision, district or entity of any kind who uses water.

(f) "Waste" means any excessive, unnecessary or unwarranted use of water, including but not limited to any use which causes unnecessary runoff beyond the boundaries of any property as served by its meter and any failure to repair as soon as reasonably possible any leak or rupture in any water pipes, faucet, valves, plumbing fixtures or other water service appliances.

(g) "Billing period" means the period regularly used by the District for billing customer accounts, which is monthly for irrigated agriculture and bi-monthly for all other accounts.

Section 4. Prohibition on Waste of Water.

It shall be a violation of this Ordinance for any consumer or customer to waste any water obtained from or through the distribution facilities of the District.

Section 5. Prohibition of Certain Uses.

During the term of the drought shortage emergency declared by Resolution No. 547 and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by resolution of the Board, shall apply to any and all use of water obtained from or through the distribution facilities of the District.

(a) The use of running water from a hose, pipe, or any other device for the purpose of cleaning buildings and

paved, tile, wood, plastic or other surfaces shall be prohibited, except in the event the Manager determines in writing that such use is the only feasible means of correcting or preventing a potential threat to health or safety.

(b) All restaurants that provide table and/or counter service shall post, in a conspicuous place, a Notice of Drought Condition as approved by the Manager and shall refrain from serving water except upon specific request by a customer.

(c) Any use of water that causes runoff to occur beyond the immediate vicinity of use is prohibited.

(d) Boats and vehicles shall be washed only at commercial car washing facilities or by use of a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water.

(e) (1) Irrigation at any time from 10:00 a.m. to 4:00 p.m. of any yard, park, recreation area, or other area containing vegetation shall be prohibited. Automatically controlled irrigation systems shall not be set to irrigate between the hours of 10:00 a.m. to 4:00 p.m., or to permit runoff beyond the immediate vicinity of use.

(2) Pursuant to Section 7(a) below, the Manager may grant an exception in writing to the provisions of Section 5(e)(1) and allow the use of water received from or through District facilities to be used for irrigation by commercial nurseries or for other commercial agricultural purposes between the hours of 10:00 a.m. and 4:00 p.m.

(3) The setting forth herein of specific examples of prohibited waste shall not constitute a limitation on the definition of waste of water or on prohibition of any such other uses as may constitute waste within said definition.

Section 6. Place of Use of Water.

Except as otherwise provided in this Ordinance or as specifically authorized by the Manager, water received from or

through a District meter may be used only on and for the property at the address to which that meter was assigned by the District.

Section 7. Future Restrictions.

All consumers are hereby notified that further restrictions or prohibitions on water use and service including but not limited to the prohibition of new connections and the rationing of water, may hereafter become necessary, and nothing herein, and no application, permit or approval of any water service or water service facilities granted pursuant to these rules shall vest in the applicant any right to a particular use or quantity of water, but such applicant shall be subject to all further prohibitions, restrictions, rules and regulations in the same manner and extent as any other consumer or class of consumer similarly situated existing at the time such prohibitions or restrictions are imposed.

Section 8. Exemptions and Appeals.

(a) Exemptions to the water use regulations set forth in this Ordinance may be granted by the Manager for specific uses of water, on the basis of hardship, or for reasons of health or safety. Any consumer may appeal any decision concerning application of the provisions of this Ordinance by the Manager to the Board of Directors by filing a written appeal on forms provided by the District with the Manager within ten (10) days from the date of the decision. The Board of Directors shall set the matter for hearing at a regular or special meeting within thirty (30) days from the date the appeal is filed. The District shall provide written notice of said hearing at least five (5) days prior to said hearing.

(b) Action by Board. At said hearing, the Board may, in its discretion, affirm, reverse or modify the

Manager's decision and impose any conditions it deems just and proper if it finds and determines that (1) the restrictions herein would cause an undue hardship or threat to health or safety, or (2) that due to particular facts and circumstances, the provisions of this Ordinance are not applicable to this situation under consideration.

(c) The Board may from time to time fix and charge an appropriate filing fee in an amount found by the Board to be the administrative expenses of handling appeals. The fee schedule shall be posted in the District office and may be changed by the Board without the necessity of amending this Ordinance.

Section 9. Violations.

(a) Any failure to comply with a provision of this Ordinance shall constitute a violation, regardless of whether the failure to comply is caused by a customer, consumer or any other person or entity.

(b) Where the failure to comply is found by the Board to be a continuing and intentional, each successive failure to comply shall be a separate and distinct violation.

Section 10. Penalties and Charges.

(a) It shall be a misdemeanor for any person, firm, association, partnership, corporation or other entity to use or apply water received from this District contrary to or in violation of any restriction or prohibition contained in this Ordinance. [Water Code Section 31029]

(b) Service may be terminated to any consumer or customer who knowingly and willfully violates or allows the knowing and willful violation of any provision of this Ordinance, after having been given reasonable notice and an opportunity to be heard to protest against the finding of such willful violation and the discontinuance of service.

(c) The following additional penalties shall apply to any violation of any provision of this Ordinance:

(1) For the first and second violation within any consecutive twelve (12) calendar months, the District will issue a written notice of the fact of such violation.

(2) For a third violation within any consecutive twelve (12) calendar months, the District shall impose a surcharge against the customer for the property where the violations occurred or is occurring, in an amount equal to 100 percent of the water bill for the billing period in which the violation occurred.

(3) For a fourth violation and any subsequent violation within any consecutive twelve (12) calendar months, the District:

a. Shall impose a surcharge against the customer for the property where the violation occurred, or is occurring, in an amount equal to 100 percent of the water bill for the billing period in which the violation occurred.

b. May install a flow restricter on or shut off water service to the property where the violation occurred or is occurring, for a period to be determined by the Manager.

c. If a flow restricter is installed or water service shut off pursuant to this section, prior to restoration of normal water service the customer whose service is affected shall be required to reimburse the District for whatever cost it has occurred and will incur in installing and removing a flow restricter and in shutting off and turning on water service.

(4) Any surcharge imposed pursuant to this section shall be added to the account of the customer for the property where the violation occurred or is occurring and shall

be due and payable on the same terms and subject to the same conditions as any other charge for regular water service.

(5) Nothing in this Ordinance shall limit or be construed to limit the right of a customer to seek reimbursement of a surcharge from a tenant or other consumer responsible for violation.

Section 11. Notice of Violation/Hearing.

(a) For each violation of this Ordinance the Manager shall give notice as follows:

(1) By sending written notice through the U.S. mail to the customer for the property where the violation occurred or is occurring, at the current billing address shown in the District's water billing records;

(2) In addition, the Manager may provide notice as follows:

a. By sending written notice through the U.S. Mail to the consumer at the property address where the violation occurred or is occurring;

b. By causing the giving of written notice personally to the person who committed the violation or by leaving written notice with some person deemed by the District to be of suitable age and discretion at the property where the violation occurred or is occurring;

c. If neither the person who committed the violation nor a person deemed by the District to be of suitable age and discretion can be found, then by affixing written notice in a conspicuous place on the property where the violation occurred or is occurring.

(b) Any written notice given under this section shall contain a statement of:

(1) The time, place and nature of the violation;

(2) The person(s) committing the violation, if known;

(3) The provision(s) of this Ordinance violated;

(4) The possible penalties for each violation;

(5) The customer or consumer's right to request a hearing on the violation, the time within which and to whom such request must be made; and

(6) The customer or consumer's loss of the right to a hearing in the event the customer or consumer fails to request a hearing within the time required.

(c) Any customer or consumer provided a notice of violation in accordance with the provisions of this Ordinance shall have the right to request a hearing before the Board. The request must be made in writing and must be actually received at the office of the District within ten (10) calendar days of the date of the notice of violation. If a hearing is requested, the Board shall give the customer or consumer requesting such hearing a notice in writing of the date, time and place of the hearing in the manner set forth above at least ten (10) days prior to the date of the hearing. The Board shall conduct the hearing at which both written and oral evidence may be presented, and shall decide whether a violation has occurred and the appropriate penalty. In determining the appropriate penalty, the Board may consider whether the customer or consumer knew of the violation at the time it occurred and whether he or she took reasonable action to correct the violation upon notification of it. The decision of the Board shall be final.

(d) If a customer or consumer fails to request a hearing before the Board in the manner and within the period provided in this section, the action of the District shall be deemed final.

(e) If a hearing is held the District shall prepare a brief and concise summary of the proceedings as a part of the District's records.

Section 12. Suspension and Repeal of Conflicting Ordinances and Rules and Regulations.

To the extent that the terms and provisions of this Ordinance are inconsistent or in conflict with the terms and provisions of any prior District ordinance, resolution, rule or regulation, the terms of this Ordinance shall prevail, and inconsistent and conflicting provisions of prior ordinances, resolutions, rules and regulations shall be suspended during the effective period of this Ordinance.

Section 13. Severability.

If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be unconstitutional or invalid.

Section 14. Effective Date, Publication, Posting and Recording.

(a) This Ordinance shall be in full force and effect upon adoption.

(b) This Ordinance shall be published once in full in a newspaper of general circulation, printed and published and circulated in the District within ten days after adoption.

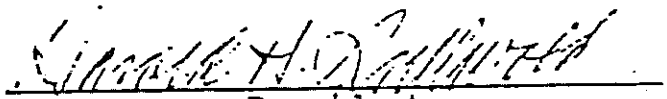
(c) This Ordinance may be recorded in the official records of the County of Santa Barbara and if this Ordinance is so recorded, any change, amendment, modification or repeal shall be recorded in said official records.

PASSED, APPROVED AND ADOPTED by the Board of Directors of the Carpinteria County Water District on this 31st day of January, 1990, by the following vote:

AYES: HICKEY, BAILEY, BRADLEY, FOX, SULLWOLD

NAYES: NONE

ABSENT: NONE



 President
 CARPINTERIA COUNTY WATER DISTRICT
 HAROLD H. SULLWOLD

ATTEST




 Secretary, ROBERT R. LIEBERKNECHT

cew/6456-45/ord.90-1

STATE OF CALIFORNIA)
)
COUNTY OF SANTA BARBARA) ss.

I, ROBERT R. LIEBERKNECHT, Secretary of the
Carpinteria County Water District, DO HEREBY CERTIFY that the
above and foregoing is a full, true and correct copy of
Ordinance No. 90-1 of said District, adopted at a special or
regular meeting of the Governing Board on the 31 day of
JANUARY, 1990, and that the same has not been amended
or repealed.

DATED: This 31 day of JANUARY, 1990.



Secretary
CARPINTERIA COUNTY WATER DISTRICT
ROBERT R. LIEBERKNECHT

4/24/90 (Final)

Appendix IV

ORDINANCE NO. 90-2

AN ORDINANCE OF THE CARPINTERIA COUNTY WATER DISTRICT RESTRICTING AND LIMITING THE AMOUNT OF USE OF WATER SUPPLIED FROM OR THROUGH THE DISTRICT DISTRIBUTION SYSTEM, PROHIBITING CERTAIN USES OF WATER, PROVIDING FOR RELIEF THEREFROM IN EMERGENCY AND CONDITIONS OF UNDUE HARDSHIP AND PROVIDING FOR PENALTIES FOR VIOLATION THEREOF AND IMPLEMENTING AND SUPPLEMENTING ORDINANCE NO. 90-1 DATED JANUARY 1, 1990

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF CARPINTERIA COUNTY WATER DISTRICT AS FOLLOWS:

SECTION 1. USE OF WATER. The use of all water obtained by or through the distribution facilities of this District shall be governed and controlled as in this Ordinance set forth.

SECTION 2. PROHIBITION AGAINST WASTE OF WATER. It shall be unlawful for any water user obtaining any water from and through the distribution facilities of this District to waste any of said water. (See Ordinance No. 90-1)

SECTION 3. DEFINITIONS. As used in this Ordinance, the following words or terms shall have the meanings as in this section set forth.

(a) Meter Account: A District record which identifies each meter through which water is served to a particular premises, the name of the person requesting the service, the location of the premises and the person responsible for the account. Each such meter account (sometimes referred to as "Account") is identified by an account number.

(b) Agriculture or Agricultural Use: Any application of water for the production of crops for commercial or profit purposes.

(c) Commercial Use. The use of water to serve the purposes

of business, commerce, trade or industry other than agriculture and recreation.

(d) Domestic Use: Uses which are common to residences (homes) including reasonable landscaping, the watering of a reasonable number of non-commercial domestic or barnyard stock or animals and all other uses of water in the District not otherwise specifically classified herein.

(e) Industrial Use: The same as commercial use.

(f) Irrigation use: The same as agricultural use.

(g) Recreational Use: The use of water for public camps or picnic grounds, public parks, public athletic playing fields, tennis facilities available to the public, the community swimming pool and public or private golf courses and the surrounding grounds and structure used in connection with the above or incidental thereto.

(h) Schools: All schools, both public and private, and including all surrounding grounds and structures thereon used for usual school purposes.

(i) Unit of Water: The term used to measure a quantity of water. In this Ordinance one (1) unit of water is One Hundred Cubic Feet (HCF). A cubic foot of water is the equivalent of approximately 7.48 gallons. One unit of water (100 HCF) is the equivalent of approximately 748 gallons of water. Water rates are quoted in "units of water."

(j) Billing Cycle or Period:

1) Agricultural Billing Cycle. The billing cycle for agricultural meters and uses is a period of approximately 30 consecutive days. There are twelve (12) consecutive billing cycles in a water year.

2) All Other Billing Cycles. For all meters and uses other than agricultural, the billing cycle is a period of approximately 60 days. There are six (6) consecutive billing cycles in a water year for all uses other than agricultural.

3) Meter Readings. Agricultural meters are read every month and are read during the last week of each month and each agricultural meter will be read on the same day of each month when it is possible to do so. All other meters will be read

every other month (bi-monthly) in the same manner and at approximately the same time of the month as agricultural meters.

(k) Allocation (Ration) Cycle or Period: The allocation or ration cycle or period for each account is a period of time for which a certain amount of water is allocated for use by the account holders during the designated cycle or period. For the method of determining the basic allocation for each account, see Section 4 of this Ordinance. For the duration of each allocation see Section 7 of this Ordinance.

(l) Water Year: Each water year for each account consists of twelve (12) consecutive calendar months. Each water year begins with the meter reading in the month of May each year and ends with the meter reading in the same month in the following calendar year.

SECTION 4. DETERMINATION OF WATER ALLOCATION (RATION).

(a) Historical Use Period: The amount of water allocated to each meter account shall be determined from time to time by the District using the methods set forth in this Ordinance and the allocation will be based on and derived from District records showing the historical amounts used by each account over a selected Historical Use Period (HUP). The selected historical use period for determining the basic allocation in all categories of use are the calendar years of (1985, 1986, 1987, 1988 and 1989.)

(b) Agricultural Allocations: Each agricultural account shall be given a total allocation for the water year which allocations will be eighty percent (80%) of the average yearly use by each respective account during the five (5) year historical use period. This total allocation will be shown for each of the 12 billing cycles in the water year and each billing cycle allocation will be 80% of the historical average of the respective billing cycle.

(c) Domestic Use (Single Family): The allocation for all residential domestic uses, other than condominiums, apartments, multi-units and mobile home or recreational vehicle parks, shall be determined by the method shown in this Section 4(c).

The District has identified from its records, the records of the City of Carpinteria and the County of Santa Barbara, certain

residential areas where each of the residential parcels (lots) and the residential structures within each respective area are substantially similar in size.

For each area which the District has determined to contain substantially similar lots and structures, the District has determined from its meter account records the total amount of water used in that area for the five year historical use period and the average amount of use for each year and each month during the historical use period. The historical average has been reduced by twenty percent (20%) to arrive at a total allocation for each respective area. The reduced amount has been divided by the total number of accounts in the area to arrive at an equal allocation for each account in each respective area for the water year. The yearly allocation is divided into six (6) bi-monthly billing cycles, each of which will reflect the historical pattern of use during each of those cycles.

(d) Condominiums, Apartments and Other Types of Multiple Living Structures (Excluding Mobile Homes): All of these types of residential units have been grouped together for allocation purposes. The District has determined the total monthly and yearly historical use of the total group by using the same methods described in (c) above. The District has in a like manner reduced this historical average by twenty percent (20%). The reduced amount has then been divided by the total number of single family units in the group. The resulting allocation for each unit has then been assigned to each meter account based on the total number of units being served by the particular meter.

(e) Mobile Home Parks (Excluding the Carpinteria State Beach Park): All mobile home parks have been grouped together for allocation purposes. The District has determined to the total historical use for the entire group, for each month and year in the historical use period and has determined the average use for each month and year during the historical period. This average amount has been reduced by 20% and the resulting figure has been divided by the total number of mobile home spaces in the entire group. The figure thus determined for each space has been assigned to each mobile home park based on the total number of

units in each park.

(f) Residential Units With a Home Owners' Association Meter: Residential units in this category such as Seacoast and The Meadows each separately have, in like manner, had the historical average determined, applied and reduced by twenty percent (20%) and the resulting figure has been assigned to the respective home owners' associations' meter account.

(g) Other Metered Accounts: Other accounts (including but not limited to, State, County, City and Special Districts), except as described in (h) below, have in a like manner had the respective historical average of each account reduced by twenty percent (20%) and the resulting allocation figure has been assigned to the respective metered account.

(h) Accounts Without Historical Five Year Average: Accounts not having a five (5) year historical history shall be handled on a case-by-case method and each such account shall have its allocation determined by the District by using as a guide the allocation determined for similar uses and size after making any adjustment necessary.

(i) Future Allocation Adjustment: Adjustments in allocations may be made in the future years based on the amount of water available to the District. Future water supply factors may cause the District to determine priorities in the categories of use and the amount of use in each category. The District may, in subsequent adjustments, find it necessary to declare some uses as being non-essential after giving consideration to the amount of water needed to be reserved for health, fire and safety .

(j) The allocation for each water year shall be determined prior to the first day of each water year and if there are changes, account holders will be given written notice of the change.

SECTION 5. USE OF RATIONED WATER. Subject to the prohibition against the waste of the use of water and subject to the penalties provided for the violation of this Ordinance, it shall be the sole responsibility of each water account holder to manage

the holder's water needs in such a manner as not to exceed the amount of water allotted to that account.

SECTION 6. PLACE OF AND CLASS OF USE OF RATIONED WATER. Except as hereinafter provided, water allotted to a water account may be used only on and for the premises described in the District records as being served by account and on no other premises and only for that class of use or uses served by that account and for no other use.

SECTION 7. ALLOCATION CYCLES, NO CARRY-FORWARD CREDIT.

(a) Agricultural Accounts: The water year for agricultural accounts shall be divided into four (4) allocation periods of approximately equal length, and each period shall consist of three (3) billing and allocation cycles of approximately thirty days in each cycle. The allocation for each allocation period shall be the sum of the allocations for the cycles comprising each allocation period determined as set forth in Section 4. Agricultural accounts shall be billed in each billing cycle, but the allotted water may be used at any time during the respective period for which the water was allocated. Allocated water which is not used in any given allocation period may not be carried forward for use in any subsequent allocation period.

(b) All Other Allocations: All accounts, other than agricultural, shall be on bi-monthly billing-ration cycles. Water which is allocated, but unused in a cycle may not be carried forward for use in any subsequent billing-ration cycle.

SECTION 8. PROCEDURE FOR AN EXCEEDED WATER RATION. If a water user uses more water during any ration cycle or period than has been allocated to that account for that cycle or period, the fact of such excess use shall constitute a violation of this Ordinance and the penalty provision of Section 12 of this Ordinance may be invoked by the District in addition to any other enforcement or penalty procedure allowed by law including any surcharges and flow restrictors for excess use as provided by this Ordinance.

SECTION 9. SURCHARGE FOR EXCESS WATER USE.

(a) The surcharge hereby established for water used in excess of the amount allotted to each account shall be in addition to the basic water rates of the District under any applicable rule, regulation, resolution or ordinance in effect at the time of the excess use and shall be in addition to, and not in lieu of, any other penalties imposed by this Ordinance or Ordinance No. 90-1.

(b) If water is used during any ration cycle or period in excess of the amount allotted for that period, a surcharge shall be imposed on said excess use at double the basic water rate in the applicable rate bracket for units (100 cubic feet) of water, for the first five (5) units or fraction thereof in excess of the allotted amount. For each unit, or fraction thereof, in excess of the first five (5) units of overuse, the surcharge will be four times the applicable base rate. Surcharges shall appear on the first billing statement for that account immediately following the period in which the excess use occurred. The surcharge shall be paid to the District at the same time as the payment on the basic rate and the penalty for failure to pay the entire amount due (basic plus surcharge) shall be the same as the penalty imposed by the District for failure to pay the basic rate.

(c) If a surcharge is imposed in three (3) or more allocation cycles during the term of this Ordinance, in addition to the surcharge, or any other charge or penalty, the Board may, in its discretion, either install a device on the meter to restrict the flow of water or discontinue service to the property. The person(s) or entity in whose name the water account stands shall be requested to appear before the Governing Board at a hearing to show cause why the Governing Board should not take action to either install a restrictive flow device or devices on the meter serving said property or, in the alternative, discontinue water service to said property for such a period of time as the Governing Board may find to be appropriate under the circumstances.

(d) Notice of said hearing shall be in writing and mailed

or delivered to the person or persons at the address as shown on the District records for said water account.

There shall be set forth in said notice the amount of water allocated for each period in question, the amount actually used for each period, the amount of excess for each period, and the date, time and place of the hearing on said notice which date shall not be less than ten (1) days after the date (postmark) of the mailing or delivery of said notice.

(e) Excess use shall be determined by the records of the District as taken from meter readings and shall be presumed to be correct and the burden of showing that the meter from which said readings are taken is inaccurate shall be on the person or persons to whom said notice is directed.

(f) All costs of installing or removing any restrictive flow devices, and/or disconnecting or connecting said service shall be the sole cost of the person or persons in whom the account stands and shall be paid promptly upon being billed therefor.

SECTION 10. REQUEST FOR RATION REVIEW.

(a) All Accounts: An account holder may, at anytime and from time to time, file a written application with the District on a form provided by the District, requesting a review of the amount of water to the holder's account. A fee to cover the District's administrative costs of review will be fixed by the District, which fee must be paid at the time of the application.

(b) Application of Review to Violations and Surcharge: If, as a result of said review, the allotment is raised, any penalty for excess use which could have been or actually was imposed shall be either reduced, excused or rescinded depending upon the amount of the raise in relation to the excess use.

In a like manner, any surcharge which could have been (or was actually) imposed because of previous excess use will be reduced or not be imposed, or shall be refunded, up to the extent of the new allotment, but, shall not be excused or refunded for the amount used in excess of the new allotment.

Except as otherwise provided in this Ordinance, any

violations and surcharges excused under this section shall be only for the ration cycle or period immediately preceding the date of the application or request for review of the allotment in question and for no other period.

SECTION 11. APPEALS AND EXCEPTIONS.

(a) Appeals: Any water user may appeal any decision or application of the provisions of this Ordinance by District staff, to the Board of Directors by filing a written appeal with District, and the Board of Directors shall consider the appeal at a regular or special meeting within thirty (30) days from the date the appeal is filed. The District shall give the appellant written notice of the meeting at which the appeal will be considered at least five (5) days prior to said meeting. The District may fix fees for filing appeals in an amount deemed from time to time sufficient to cover District costs for appeals.

(b) Action by Board: At said meeting, the Board of Directors of the District may, in its discretion, affirm, reverse or modify the District staff's decision and make any adjustments and impose any conditions it deemed just and proper, if it finds and determines that (1) the terms of this Ordinance be applied to the appellant, would cause an undue hardship not suffered by others in the same category of use or (2) that due to peculiar facts and circumstances, none of the provisions of this Ordinance are applicable to the particular situation under consideration.

SECTION 12. PENALTIES.

(a) It is a misdemeanor for any person, firm, association, partnership, corporation or any water user to use or apply water received from this District contrary to or in violation of any restriction or prohibition contained in this Ordinance until this Ordinance has been repealed or the emergency which was declared by the District has closed and upon conviction thereof such person, firm, association, partnership or corporation shall be punished by imprisonment in the County Jail for not more than thirty (30) days or by fine of not more than Six Hundred Dollars (\$600.00) or by both the fine and imprisonment, for each

violation and for each day of an additional violation.

(b) In addition to any other penalty or surcharge, any person, firm, association, partnership, corporation or water user violating any restriction or prohibition of this Ordinance shall be subject to having water service discontinued to the affected property, after having been given reasonable notice and an opportunity to be heard to protest against the findings of such willful violation and the discontinuance of service.

SECTION 13. SUSPENSION OF CONFLICTING ORDINANCES AND RULES AND REGULATIONS. To the extent that the terms and provisions of this Ordinance are inconsistent, or in conflict with the terms and provisions of any prior District Ordinances, Resolutions and Rules and Regulations, the terms of this Ordinance shall prevail and inconsistent and conflicting provision of prior ordinances, resolutions and rules and regulations shall be suspended during the effective period of this Ordinance. Notwithstanding the foregoing, nothing herein contained shall have any effect on the provisions of Ordinance No. 90-1, provided however, that if there is a conflict, or there is an ambiguity as between Ordinance No. 90-1 and this Ordinance the Governing Board shall have the authority to resolve the conflict or ambiguity. Any such resolution shall be applied to all future like situations until such time as either or both Ordinances are amended to address the situation in question.

SECTION 14. TEMPORARY SUPPLIES. From time to time the District may be able to obtain temporary supplies of water in excess of the normal amounts available to the District, in such event the District may allocate such water for use in the District as the District deems best and such temporary allocation shall not require an amendment or change in this Ordinance but may be done by resolution or minute order of the Governing Board.

SECTION 15. SEVERABILITY. If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional, or invalid, such decision shall not affect the

validity of the remaining portions of this Ordinance. The Board of Directors hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be unconstitutional or invalid.

SECTION 16. EFFECTIVE DATE, PUBLICATION, POSTING AND RECORDING.


(a) This Ordinance is an emergency ordinance and shall be in full force and effect on the date of adoption and shall be operable as to each account as of the meter reading in May, 1990.

(b) This Ordinance shall be published once, in full, in a newspaper of general circulation, printed, published and circulated in this District, within ten (10) days after adoption.

(c) This Ordinance may be recorded in the Official Records of this County of Santa Barbara and if this Ordinance is so recorded any change, amendment, modification or repeal shall be recorded in said Official Records.

PASSED AND ADOPTED by the Governing Board of the Carpinteria County Water District this 24th day of April, 1990 by the following vote, to wit:

- AYES: Bradley, Hickey, Bailey, Fox and Sullwold
- NAYES: None
- ABSENT: None
- ABSTAIN: None



 President of the Governing Board
 CARPINTERIA COUNTY WATER DISTRICT

ATTEST:



 Secretary

State of California)
County of Santa Barbara) SS.

I, ROBERT R. LIEBERKNECHT, Secretary of the
CARPINTERIA COUNTY WATER DISTRICT, do hereby certify that the
foregoing is a full, true and correct copy of Ordinance No. 90-2,
adopted on APRIL 24 , 1990, and that the same has not been
amended or repealed.

DATED: This 26 day of APRIL, 1990.

Robert R. Lieberknecht
Secretary
ROBERT R. LIEBERKNECHT

(Seal)

Appendix V

ORDINANCE NO. 90-3

AN ORDINANCE OF THE CARPINTERIA COUNTY
WATER DISTRICT ESTABLISHING RULES AND
REGULATIONS FOR THE RESTRICTION UPON AND
THE PROHIBITION OF THE DISTRIBUTION AND
DELIVERY OF WATER WITHIN THE DISTRICT

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF
THE CARPINTERIA COUNTY WATER DISTRICT AS FOLLOWS:

Section 1. Declaration of Water Shortage
Emergency.

The Board has conducted a duly noticed public hearing on January 31, 1990, to determine whether a drought-induced water shortage emergency exists and, if so, what regulations should be adopted in response to the shortage. By Resolution No. 547, dated January 31, 1990, the Board of Directors of the Carpinteria County Water District declared a water shortage emergency to prevail within the boundaries of the Carpinteria County Water District.

Section 2. Purpose and Scope.

This Ordinance adopts regulations establishing a moratorium on issuance of "Can and Will Serve" letters for new service connections as a necessary measure to deal with the water shortage emergency which the Board has found to exist. These regulations are effective immediately and the use of all water obtained by or through the distribution facilities of the District shall be governed and controlled by the provisions of this Ordinance.

Section 3. Definitions.

The following terms are defined for the purpose of this Ordinance.

- (a) "District" means the Carpinteria County Water District.
- (b) "Board" means the Board of Directors of the District.
- (c) "Manager" means the General Manager of the District.
- (d) "Applicant" means every person, firm, trust, partnership, association, corporation, city, county, state or local agency, political subdivision, district or entity of any kind.
- (e) "Service connection" means the tapping of or the connection to any District water service facility for the purpose of distributing, delivering and serving water.
- (f) "Water Service Facility" refers to and includes service connections, meters, main extensions and all other appurtenances used or useful for the delivery of water. Unless specifically indicated to the contrary, references herein to water service facilities shall mean facilities which are owned (or are to be owned) by Carpinteria County Water District and shall not mean private water service facilities.
- (g) "Can and Will Serve Letter" means the District's standard form letter customarily sent to the Community Development Department of the City of Carpinteria or the Resource Management Department of the County of Santa Barbara, indicating that certain projects are within the District and are entitled to water service subject to the rules and regulations of the District.

Section 4. Prohibition of Additional Water Service Facilities.

(a) Except as expressly provided herein, no new, additional, further expanded or increased in size water service connections, meters, main extensions or other water service facilities of any kind, shall be made, allowed, approved or accepted on or after the effective date of this Ordinance. The term "new water service facilities" shall be deemed to refer to and include each and all of the above. The uses restricted and prohibited herein are found by the Board of Directors to be nonessential.

(b) Any applicant who possesses a valid Can and Will Serve letter issued for water service by the District shall be exempt from the provisions of this Ordinance for the specific water service facility covered by said Can and Will Serve letter. Except as herein provided, no application for Can and Will Serve letter shall be accepted by the District, and no Can and Will Serve letter shall be issued by the District on or after the effective date of this Ordinance.

Section 5. Relocation, Replacement and Repair of Existing Facilities.

Notwithstanding any other provisions of this Ordinance, this Ordinance does not apply to repair, relocation or replacement of existing District, or private water service facilities of the same type, size and capacity in order to continue existing water service, nor does this Ordinance apply to the construction and installation of new additional District facilities, whether constructed and installed by the District or by a private individual, for dedication to the District on completion.

Section 6. Requirements for Information.

Applicants for water service facilities shall be responsible for providing all information and proof requested by the Board of Directors or the District staff for use in processing, verifying or enforcing any matter provided for herein, and the applicants shall do so at their sole cost and expense. Any failure to provide the requested information or proof shall be grounds for denial of any application or relief.

Section 7. Future Restrictions.

All applicants for water service facilities, including all applicants who have received Can and Will Serve letters as of the effective date of this Ordinance, are hereby notified that further restrictions or prohibitions on water use and service may hereafter become necessary, and nothing herein, and no application, permit or approval of any water service or water service facilities granted pursuant to these rules shall vest in the applicant any right to a particular use or quantity of water, but such applicant shall be subject to all further prohibitions, restrictions, rules and regulations in the same manner and extent as any other consumer or class of consumer similarly situated existing at the time such prohibitions or restrictions are imposed.

Section 8. Appeals and Exceptions.

(a) Exemptions to the water service restrictions set forth in this Ordinance may be granted by the Manager for specific uses of water, and specific installation of water service facilities, on the basis of hardship, or for reasons of health and safety. Any applicant may appeal any decision concerning provisions of this Ordinance by the

Manager to the Board of Directors by filing a written appeal on forms provided by the District with the Manager within ten (10) days from the date of the decision. The Board of Directors shall set the matter for hearing at a regular or special meeting within thirty (30) days from the date the appeal is filed. The District shall provide written notice of said hearing at least five (5) days prior to said hearing.

(b) At said hearing, the Board may, in its discretion, affirm, reverse or modify the Manager's decision and impose any conditions it deems just and proper if it finds and determines that (1) the restrictions herein would cause an undue hardship or threat to health or safety or (2) that due to the particular facts and circumstances, the provisions of this Ordinance are not applicable to this situation under consideration.

(c) The Board may from time-to-time fix and charge an appropriate filing fee in an amount found by the Board to be the administrative expenses of handling appeals. The fee schedule shall be posted in the District office and may be changed by the Board without the necessity of amending this Ordinance.

Section 9. Penalties.

(a) It is a misdemeanor for any person, firm, trust, partnership, association, corporation or entity of any kind, to use, obtain or apply water received from this District contrary to or in violation of any restriction or prohibition contained in this Ordinance. Upon conviction thereof such person, firm, trust, association, partnership, corporation or other entity shall be punished by imprisonment in the County Jail for not more than thirty (30) days or by fine of not more than Six Hundred Dollars (\$600.00) or by both

the fine and imprisonment, for each violation and for each day of an additional violation.

(b) Any person, firm, trust, partnership, association, corporation or entity of any kind willfully violating any restriction or prohibition of this Ordinance shall be subject to having water service discontinued to the affected property, after having been given reasonable notice and an opportunity to be heard to protest against the finding of such willful violation and the discontinuance of service.

Section 10. Conflicting Ordinances and Rules and Regulations.

To the extent that the terms and provisions of this Ordinance are inconsistent or in conflict with the terms and provisions of any prior District Ordinances, Resolutions and Rules and Regulations, the terms of this Ordinance shall prevail and inconsistent and conflicting provision of prior ordinances, resolutions and rules and regulations shall be suspended during the effective period of this Ordinance. Notwithstanding the foregoing, nothing herein contained shall have any effect on the provisions of Ordinance No. 90-1 or 90-2, provided, however, that if there is a conflict, or there is an ambiguity as between Ordinance 90-1 or 90-2 and this Ordinance, the Board shall have the authority to resolve the conflict or ambiguity. Any such resolution shall be applied to all future like situations until such time as any or all such ordinances are amended to address the situation in question.

Section 11. Severability.

If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be unconstitutional or invalid.

Section 12. Effective Date, Publication, Posting and Recording.

(a) This Ordinance is an emergency ordinance and shall be in full force and effect upon adoption.


(b) This Ordinance shall be published once in full in a newspaper of general circulation, printed and published and circulated in the District within ten (10) days after adoption.

(c) This Ordinance may be recorded in the official records in the County of Santa Barbara and if this Ordinance is so recorded, any change, amendment, modification or repeal shall be recorded in said official records.

4/24/90 (Final)

PASSED, APPROVED AND ADOPTED by the Governing Board of the Carpinteria County Water District on this 24th day of April, 1990, by the following vote, to wit:

AYES: Bradley, Hickey, Sullwold, Fox, Bailey
NAYES: None
ABSENT: None
ABSTAIN: None



President of the Governing Board
CARPINTERIA COUNTY WATER DISTRICT

ATTEST



Secretary

4/24/90 (Final)

STATE OF CALIFORNIA)
) ss.
COUNTY OF SANTA BARBARA)

I, _____, Secretary of
the CARPINTERIA COUNTY WATER DISTRICT, do hereby certify that
the foregoing is a full, true and correct copy of Ordinance
No. 90-3, adopted on April 24, 1990, and that the
same has not been amended or repealed.

DATED: This 24th day of April, 1990.

Robert R. Lieberknecht
Secretary

(Seal)

Appendix L

Program Implementation Report
Regional Water Efficiency Program
County of Santa Barbara

REGIONAL WATER EFFICIENCY PROGRAM PROGRAM IMPLEMENTATION REPORT

July 1, 2004 - June 30, 2005

Prepared by:
Santa Barbara County Water Agency

Program Background

The Regional Water Efficiency Program was established in December 1990 to promote the efficient use of urban and agricultural water supplies in Santa Barbara County, and to provide information and assistance to the eighteen local water purveyors within the county. The Program provides coordination for cooperative efforts among purveyors, acts as a clearinghouse for information on water efficiency technology, and monitors local, state and national legislation concerning efficient water use.

Currently, the Program serves over 400,000 county residents. During the reporting period, three Program Specialists dedicated approximately 65 hours of staff time per week in support of this program. The following report documents the activities implemented by staff of the Regional Program between July 1, 2004 and June 30, 2005.

A number of the Regional Water Conservation Program's activities fulfill - on a regional level - the obligations for best management practices (BMPs) in the statewide California Urban Water Conservation Council Memorandum of Understanding (MOU) and/or the Bureau of Reclamation's water conservation criteria. The County Water Agency is a signatory to the MOU and has prepared a plan to meet the Bureau's water conservation criteria. Many of the regional activities also assist individual water purveyors to satisfy their own conservation goals under the MOU and Bureau Criteria. The programs described below contain a reference to the applicable or related MOU or Bureau best management practices. **Regional** implementation of some of the BMPs is encouraged by the Urban Water Conservation Council (which administers the MOU) and by the Bureau.

PROGRAMS

1. IN-SCHOOL EDUCATION RESOURCES AND PROGRAMS

- Teacher's Guide to Free Resources:

This guide provides teachers with information about classroom presentations, field trips, videos and water education materials offered by the Water Agency and each of the purveyors within the county. The materials are available locally or from the Department of Water Resources, American Water Works Association and other sources. This guide is available free to teachers from the County Water Agency or local purveyors. Copies were distributed during classroom presentations throughout the county.

Relates to Implementation of: MOU BMP # 8 & Bureau BMP #s A4 & A7.

- Water Awareness High School Video Contest

Winners of the 6th Annual Santa Barbara County Water Awareness High School Video Contest were announced on May 18, 2005. The ceremony took place at the Faulkner Gallery at the Santa Barbara Downtown Library, where videos were publicly viewed for the first time. Dos Pueblos High School received first prize in the contest for their video "Hank, the Model Citizen" winning \$1,000 for their school. Cabrillo High School received second place for their video "Water Conservation for the Future," netting \$750, while Santa Ynez Valley Union High School received third place for their video "Water Cooler" winning \$500. San Marcos High School and Cate School each took home \$200 for their participation in the contest.

The water purveyors in Santa Barbara County sponsor this annual event, which encourages local high school students to produce videos that address local water issues. This year's contest was sponsored by Goleta Water District, City of Santa Barbara, Santa Ynez Water Conservation District, ID#1, Montecito Water District, Santa Barbara County Water Agency, Carpinteria Valley Water District, La Cumbre Mutual Water Company, City of Santa Maria, City of Guadalupe, City of Buellton, Mission Hills and Vandenberg Village Community Services District. The Water Awareness High School Video Contest is an exciting way for students to increase their awareness of the importance of water while earning cash prizes for their school.

Winning videos will be aired on City TV Channel 18 and GATV Channel 20 throughout May 2006, which is Water Awareness Month in California.

Relates to Implementation of: MOU BMP #8 & Bureau BMP #s A4 & A7.

• Classroom Presentations:

Staff conduct classroom presentations using various pieces from the Water Puzzle which follow the path of that water takes from the sky to the wastewater treatment plant. In addition, staff oversees the book-bag lending program which consists of five bags full of books, which focus on a number of water issues: water treatment, wastewater treatment, water conservation, water quality, aquatic habitats and more. Books are grade specific (for grades K-2 and 3-5), housed in canvas bags and lent out for a 2-week period.

Staff provided approximately 200 classroom presentations, reaching many schools for the first time (See the Table below for specific details). Other aspects of the education program were completed in Fiscal Year 2004/2005 including the following:

New presentations aimed at Junior High science classrooms were drafted. These presentation ideas correlate to specific junior high science standards. Feedback on presentations was solicited from local junior high teachers, and will be incorporated into the new offerings.

In addition, County staff presented a groundwater presentation at the Vieja Valley School Science Night in the Spring of 2005. The following table lists the number of presentation and students reached in each water district over the reporting period.

Water District	Number of Presentations	Number of Students Reached
Buellton	0	0
Carpinteria	8	116
Casmalia	2	29
Cuyama	0	0
Goleta	0	0
Guadalupe	8	270
La Cumbre	0	0
Cal Cities Water Co.	23	507
Lompoc	0	0
Los Alamos	0	0
Mission Hills	0	0
Montecito	3	60
Santa Barbara	1	39
Santa Maria	34	857
Santa Ynez, ID #1	9	173
Solvang	6	138
Vandenberg Village	0	0
Total	94	2189

Relates to Implementation of: MOU BMP # 8 & Bureau BMP #s A4 & A7.

- New Materials Review:

Staff obtained and reviewed new water education materials and informed local water purveyors/schools about these materials.

Relates to Implementation of: MOU BMP # 8 & Bureau BMP #s A4 & A7.

- Water Education Web Site (www.sbwater.org)

In 2004 and 2005, staff worked to update the landscape watering calculator on the sbwater.org website. The update will allow local customers to develop a personalized watering schedule for different plants and areas in their landscape and it has been corrected to allow for coastal versus inland environments within Santa Barbara County. In addition, a drought planning page was added to the website in August 2004. In April 2005, information was added to the website to advertise the Landscape TV programming – Garden Wise Guys.

Relates to Implementation of: MOU BMP #8 & Bureau BMP #s A4 & A7.

2. PUBLIC INFORMATION PROGRAMS AND MATERIALS

- Be Water Wise Advertising Campaign

The Be Water Wise advertising campaign, which is sponsored by a number of local water purveyors, ran for the second year in a row, from August to October 2004. The whimsical ads that promote water use efficiency feature plants complaining about their bloated roots caused by their owner's over watering and the lackadaisical "Dave" who waters a number of inanimate objects including his driveway and mailbox throughout his neighborhood due to a mismanaged irrigation system. The campaign was designed to raise awareness of how many of us over water our landscapes and to highlight tools that are available to irrigate more efficiently.

This year's campaign included radio spots and newspaper advertisements highlighting the importance of watering wisely. The ads direct local residents to visit www.bewaterwise.com (which then directed them to sbwater.org) for tools on efficient irrigation. A feature of the website is a landscape watering calculator that allows residents to enter specific information on their landscaping and will generate a recommended irrigation schedule based on historical local weather data.

Local sponsors of this campaign included the Santa Barbara County Water Agency, the City of Santa Barbara, California Cities Water Company, Goleta Water District, Montecito Water District, Carpinteria Valley Water District, and La Cumbre Mutual Water Company.

During the advertising campaign, the watering calculator received an average of 186 hits per month, well above the average of 128 hits per month for the preceding months.

The makeover included landscaping design from Common Ground, plant and irrigation installation and maintenance from EnviroScaping, irrigation equipment from All Around Irrigation, Native and water wise plants from Green Earth Nursery, flagstone from Stoneyard, and a Weather TRAK ET Controller from Hydropoint Data Systems. Ms. Grace Lopez was selected as the lucky winner from Santa Barbara.

- Santa Maria River Levee Bike Path Interpretive Signs

Water Resources staff continued to maintain the Levee Bike Path Interpretive Signs. Two signs were replaced due to weather damage in 2005. The signs, which were installed in June 2003, cover a number of topics including water supply, flood control

and water quality and have been placed at intervals along the bike path, so that riders can learn about local water issues as they cruise the levee.

Relates to Implementation of: MOU BMP # 7 & Bureau BMP #s A4 & A7.

- Water Awareness Month:

Staff participated with local water purveyors in this annual event, which is sponsored by the California Water Awareness Committee. The County Board of Supervisors adopted a resolution declaring May as Water Awareness Month in Santa Barbara County. Advertisements reminding local residents to conserve water and encouraging them to participate in local events were placed in number of local newspapers. Events included tours of the City's desalination facility and the Alice Keck Park Memorial Garden. In addition, Water Awareness Month displays were showcased in both north and south county facilities with information on water conservation tips for indoor conservation. Advertising for each of these events was placed in the *Santa Barbara Independent*, the *Santa Barbara News Press*, the *South Coast Beacon* and the *Carpinteria Coastal View*. This year's sponsors included the City of Santa Barbara, Carpinteria Valley Water District, the Santa Barbara County Water Agency, Montecito Water District, Goleta Water District and La Cumbre Mutual Water Company.

Relates to Implementation of: MOU BMP # 7 & Bureau BMP #s A4 & A7.

- Earth Day Fair:

Staff coordinated local purveyor participation in this annual event in Santa Barbara, which took place on April 23, 2005. Staff displayed information on the Green Gardener Program and the Water Burger, which demonstrates how much water is required to grow each piece in a burger including the bun, meat patty, lettuce, and cheese. Staff also put together a children's activity booth, which included "fishing for water facts", and the water trivia wheel. Sponsors for this event included the City of Santa Barbara, Goleta Water District, Montecito Water District, La Cumbre Mutual Water Company, and the Carpinteria Valley Water District.

Relates to Implementation of: MOU BMP #s 7 & 8, & Bureau BMP #s A4 & A7.

- Girl Scouts Water Drop Patch Event

Over 40 Girl Scouts from troops located in Santa Barbara, Ventura, Oxnard, Lompoc and Camarillo traveled to Santa Barbara on May 21st for the 6th annual Water Drop Patch day extravaganza. This event is open to Brownies in the Tres Condados Girl Scout region and explores the wonderful world of water. Topics covered included: the water cycle, local water supply, creek & ocean water pollution, watershed wildlife, water use & conservation, a tour of the wastewater treatment plant, and more. Pizza gift certificates were given to the troops with the most girl attendees, and all girls in attendance earned their Water Drop Patch.

The Water Drop Patch program was jointly developed by the United States EPA and the Girl Scout Council of the Nation's Capital. The purpose of the project is to encourage girls to:

- Make a difference in their communities by becoming watershed and wetlands stewards.
- Use their skills and their knowledge to educate others in their communities about the need to protect the nation's valuable water resources.
- Explore the natural world to gain an interest in science and math.

This event is sponsored by the Carpinteria Valley Water District, Goleta Water District, City of Lompoc, Montecito Water District, City of Santa Barbara, and Santa Barbara County Water Agency. The next Water Drop Patch day will be held on Saturday, May 13th, 2006.

Relates to Implementation of: MOU BMP # 7 & Bureau BMP #s A4 & A7.

- Water of Santa Barbara County:

Staff distributed these brochures to local water purveyors, teachers, students and other interested individuals and organizations and at all public events attended by Water Agency staff.

Relates to Implementation of: MOU BMP # 7 & Bureau BMP #s A4 & A7.

- Free Water Check Up Postcards:

This colorful postcard was distributed at public events to promote water checkups to district customers. The postcard discusses the steps in a checkup and lists important phone numbers for scheduling an appointment.

Relates to Implementation of: MOU BMP # 7 & Bureau BMP #s A4 & A7.

- Water Resources Brochure:

This 3-color poster summarizes the water supplies and uses throughout the County. The brochure is available to the public at water district offices, public events such as Earth Day and at public presentations.

Relates to Implementation of: MOU BMP # 7 & Bureau BMP #s A4 & A7.

- County Water Connection Newsletter:

One newsletter was published in 2004/2005. The newsletter covers water efficiency, water supply, and pollution prevention in Santa Barbara County. The newsletter is distributed at no cost to over 200 water purveyors, public interest groups and other interested parties. Individuals or groups are added to the mailing list by request.

Relates to Implementation of: MOU BMP # 7 & Bureau BMP #s A4 & A7.

- Conservation Requests:

The County assisted local purveyors and the public by providing information about efficient water use on request, and also provided technical assistance with water conservation program elements and implementation.

Relates to Implementation of: MOU BMP #7 & #12 & Bureau BMP #s A4 & A7.

3. LANDSCAPE WATER EFFICIENCY: EDUCATION AND MATERIALS

- Santa Barbara County ET Controller Distribution and Installation Program

ET Controller Program Partners, Santa Barbara County Water Agency, City of Santa Barbara, Goleta Water District, City of Santa Maria, City of Lompoc and Hydropoint Data Systems, continued to complete tasks associated with this program throughout 2004-2005. As of June 30, 2005, approximately 622 brochures and letters have been sent to high water using customers throughout Santa Barbara County and 225 WeatherTRAK ET Controllers have been installed. The remaining 75 controllers will be installed during fiscal year 2005/2006. Initial water use data indicated that customers were reducing their monthly water use by approximately 26%, although current data reflects only an average of 16% reduction in use over the period of the program. This can be explained by the extremely dry conditions that were experienced in Santa Barbara County in 2004. Staff worked with the Water Conservation Alliance of Southern Arizona to conduct additional analysis of the program. The partner purveyors will continue to monitor all program participants for a period of three years after the installation of their controller to ensure that the data is complete.

Relates to Implementation of: MOU BMP #s 1, 5 & 7, & Bureau BMP #s A4 & A7.

- Green Gardener Certification Program

The Green Gardener Certification Program was developed in conjunction with the City of Santa Barbara, with funding from the U.S. Bureau of Reclamation. Additional sponsors include the Santa Barbara Community College District Continuing Education Division, County of Santa Barbara Solid Waste and Utilities Division, Community Environmental Council, Horticulture Consortium of Santa Barbara County, Santa Barbara Botanic Garden, Carpinteria Valley Water District, La Cumbre Mutual Water Company, Goleta Water District, City of Santa Maria, California Cities Water Company, the City of Lompoc, Allan Hancock College and Santa Barbara Air Pollution Control District.

The goal of the program is to educate professional landscape maintenance gardeners in resource efficient landscaping practices. Participants take a ten-week class through the Adult Education Program to become certified Green Gardeners. Upon certification, gardeners receive many benefits including free advertising and promotion and discounts from vendors and sponsors. The program is taught in both English and Spanish. Water Agency staff keeps a list of certified Green Gardeners to distribute to homeowners looking for "Green" landscape services. More information on the program and upcoming classes can be found at www.greengardener.org.

Classes were offered in fall of 2004 and spring of 2005 in both Santa Barbara and Santa Maria. During this year we also received a grant from the State Water Resources Control Board to implement the classes, develop a standardized curriculum and support materials, and develop a program assessment tool. The standardized curriculum will be completed in September 2005, and the assessment tool will be completed in September 2006.

Relates to Implementation of: MOU BMP #s 1, 5 & 7, & Bureau BMP #s A4 & A7.

- Garden Wise Guys – Landscape TV Programming

Garden Wise Guys is a new, thirty-minute television show about designing & maintaining a sustainable garden. The quarterly show is produced by City TV and funded by the Santa Barbara County Water Agency and the City of Santa Barbara Public Works Department. It is hosted by two local landscape architects: Owen Dell, of County Landscape & Design, and Billy Goodnick, City of Santa Barbara Parks & Recreation Department. With a unique sense of humor, the Garden Wise Guys give viewers the basic information they need to start making changes in their own yard.

The premiere episode of Garden Wise Guys was titled "Right Plant, Right Place" and aired on Saturday, April 23 at 8 p.m. on CITY-TV, Channel 18. It was replayed Sunday, April 24 and Sunday, April 30 at 9:00 p.m. A new episode will air every 3 months with the changing of the seasons. The second episode will air in July 2005.

Relates to Implementation of: MOU BMP #s 1, 5 & 7, & Bureau BMP #s A4 & A7.

- Dedicated Landscape Meter Water Budget Program

In 2005, the Water Agency applied for and received funding for the Dedicated Landscape Meter Water Budget Program through the US Bureau of Reclamation's Water Conservation Field Services Grant Program. The project will allow local water agencies to meet the landscape irrigation management requirements of the California Urban Water Conservation Council's Best Management Practice #5 by providing customers with a monthly water budget to assist with improving their landscape water use efficiency. Program Partners will identify accounts with dedicated irrigation meters and assign ETo-based water use budgets equal to no more than 100% of reference evapotranspiration per square foot of landscape area. Program Partners will provide monthly notices to customers with water use budgets showing the relationship between the budget and actual consumption and a website for easy access to program information.

Relates to Implementation of: MOU BMP #s 1, 5 & 7, & Bureau BMP #s A4 & A7.

- Sustainable Landscape Fairs:

The 22nd Annual South Coast Sustainable Landscape Fair was held on Saturday, October 6, 2004 in Alameda Park in Santa Barbara. Participants learned about resource efficient landscapes through exhibits, tours, and demonstrations. Experts were on hand to answer landscaping questions to help local residents reduce water, fertilizer, and pesticide use while increasing the health and beauty of their landscapes.

A number of tours and demonstrations were held during the event including: tours of Alice Keck Park Memorial Gardens with Billy Goodnick; a planting demonstration with Owen Dell; a composting demonstration with Oscar Carmona; and a pruning demonstration with Karen Christman.

This year's event was sponsored by the Santa Barbara County Water Agency, the City of Santa Barbara, Goleta Water District, Carpinteria Valley Water District, Montecito Water District, and La Cumbre Mutual Water Company.

The drop-in format encouraged participation from passersby, as well as people who learned about it through advertising. The colorful exhibits included a fountain that poured through a slab of permeable paving material, a display on the Green Gardener Certification Program, and information on integrated pest management, proper pruning and tree care, and water-efficient irrigation.

The focus of the fair is to share ideas about protecting the environment while creating a beautiful landscape. The landscape fair provides a wide array of options for efficient irrigation, plant selection, and landscape maintenance. Participants are excited to learn how they can reduce water and chemical use, eliminate polluted runoff to our creeks and ocean, and create healthy compost for their yards while preventing greenwaste from going to the landfill.

Participants also took advantage of tours of the water-saving gardens in Alice Keck Park Memorial Garden, and workshops on planting, composting, and pruning. Leadership for these workshops was provided by local landscape experts Owen Dell, Billy Goodnick, Oscar Carmona, and Karen Christman.

Relates to Implementation of: MOU BMP #s 7 and 12, and Bureau BMP #s A4 and A7.

- Santa Maria Valley Sustainable Garden:

The garden is located at the County Technical Services Center in Santa Maria, which includes the offices of state, federal and county agencies that serve the public. This location guarantees significant exposure to the urban and development community that must come to the facility to obtain county building permits or other services provided at the Center. The county is contracting with a professional landscape contractor to renovate the garden, replacing plants that have been unsuccessful. Plant lists and other materials have been revised to reflect these changes and better serve the community.

In 2005, the Water Agency applied for and received funding to provide new plants and additional maintenance for the garden through the US Bureau of Reclamation's Water Conservation Field Services Grant Program.

Relates to Implementation of: MOU BMP #s 1, 5, & 7 & Bureau BMP #s A4 & A7.

- 13th Annual Santa Barbara County Home and Garden Show

Staff prepared a booth for the Annual Home and Garden Show held at Earl Warren Showgrounds in August 2004. Staff distributed educational materials for sustainable landscaping and promoted the Green Gardener Certification Program. It is estimated that approximately 5,000 people attended the event this year.

Relates to Implementation of: MOU BMP #s 5 & 7 & Bureau BMP #s A4 & A7.

- Sustainable Landscape Brochure:

Staff continued to distribute this attractive and informative brochure as a cooperative effort among water districts in the Tri-Counties area, featuring local resource-efficient landscapes and sustainable landscape concepts. The brochure contains attractive photographs, information on sustainable landscapes and resources/references for assistance. Brochures were distributed at the annual landscape fair, Earth Day and Goleta Water Awareness Day, and by individual purveyors. Currently, this brochure is being updated and revised with funding from the U.S. Bureau of Reclamation. The brochure, originally developed in 1994, was updated and revised with USBR funding in 2003.

Relates to Implementation of: MOU BMP #s 7 & 12, & Bureau BMP #s A4 & A7.

- How to Water Your Garden Brochure:

Staff continued to distribute this Sunset Magazine booklet at public events, in Green Gardener Classes and in the ET Controller Program throughout the year. This colorful brochure includes guidelines, checklists, diagrams, and helpful hints to allow the homeowner to use water efficiently.

Relates to Implementation of: MOU BMP #s 7 & 12, & Bureau BMP #s A4 & A7.

- Landscape Irrigation Guide for Landscape Professionals (English and Spanish)

This brochure provides information for landscape professionals on watering times, plant water requirements, and how to utilize CIMIS (California Irrigation Management Information System) information for the landscapes they maintain. The brochure has been distributed at all public events attended by Water Agency staff and is available for distribution by purveyors. Purveyors are encouraged to distribute the brochure during water audits.

Relates to Implementation of: MOU BMP #s 1, 5 & 7 & Bureau BMP #s A4 & A7.

- Large Landscape Water Audits:

Staff worked with the Cachuma Resource Conservation District's Irrigation Water Management Program to facilitate audits of public agencies (school districts, parks, universities) and private turf areas (golf courses, etc.) in Santa Barbara County. Financial contributions from the County make it possible to reduce the cost of an audit to certain types of customers such as universities, sod farms, and others. County staff assisted the RCD in promoting these audits by distributing a brochure describing the audit services. These brochures are available to local purveyors to distribute to their customers. In 2004/2005 approximately 45 audits were completed within the County representing a potential water savings of 586 acre-feet per year.

In 2005, the Water Agency applied for and received funding to update the Large Landscape and Agricultural Water Audit brochures through the US Bureau of Reclamation's Water Conservation Field Services Grant Program.

Relates to Implementation of: MOU BMP #5 & Bureau BMP # A7.

4. AGRICULTURAL WATER EFFICIENCY

- California Irrigation Management Information Service (CIMIS)

A series of weather stations throughout the state provide real time evapotranspiration (ET) data for irrigators to use in scheduling irrigation of agricultural acreage or landscapes such as large turf areas. There are five (Santa Barbara, Goleta, Santa Ynez, Sisquoc, and Cuyama) of these CIMIS stations located in Santa Barbara County. Staff distributed information brochures regarding the CIMIS hotline and how to use ET data to schedule irrigation.

Relates to Bureau BMP #s A4 & A5

- Irrigation Water Management Program Support:

The Water Agency provided funding (\$50,000 each year) and staff support to the Cachuma Resource Conservation District for their Irrigation Water Management Program, which offers free irrigation system audits to local farmers. Staff participated in meetings to plan and evaluate irrigation management programs. Brochures describing the agricultural and turf audit programs were distributed by staff and by the CRCD during field visits. Staff helped promote the availability of these valuable services by informing water districts and other agencies.

Relates to Implementation of: Bureau BMP #s A4 & A5.

5. INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL EFFICIENCY PROGRAMS AND MATERIALS

- Green Awards Consortium

The Water Agency continued to participate in the Green Awards Consortium which has developed an awards program that honors businesses in Santa Barbara County that demonstrate environmental stewardship above and beyond their primary mission. The activities considered in the nomination process include those that result in cleaner air or water, less waste, less traffic, conservation of water and energy, and reduced use of hazardous materials. Winners for the Fall 2004 Green Award included Housing & Residential Services, University of California – Santa Barbara; Great White Dental Lab (Santa Maria); Monte Vista School – Hope School District (Santa Barbara); and Kanaloa Seafood (Santa Barbara).

Relates to Implementation of: MOU BMP #s 7 & 9

- Lodging Industry In-room Brochures for Water and Energy Efficiency

Staff distributed three in-room brochures for the local lodging industry to promote guest awareness of water and energy efficiency practices: an in-room towel rack hanger that asks guests to consider reusing their towels during their stay, a sheet changing table tent that asks guests to consider leaving the sheets on their bed for their entire stay, and a general water and energy conservation tip brochure. A corresponding training video (available in both English and Spanish) was also provided to interested hotels to educate hotel personnel about the program. Participants continue to distribute videos and brochures to participating hotels on an on-going basis.

Relates to Implementation of: MOU BMP #s 7 & 9

- Commercial, Industrial, and Institutional Rebate Program

The CII Rebate Program, which is a rebate program for commercial customers within Santa Barbara County that was funded through a grant from the Department of Water Resources, began in December 2003. The program will issue \$234,100 in rebates to CII customers within a 3-year period for the replacement of 600 Category I toilets, 200 Category 2 & 3 toilets, 511 urinals, 200 multi-family common area laundry facility washers, and 200 commercial laundromat clothes washers with water efficient fixtures in three years to save 156 AFY.

Rebates are provided for commercial, industrial and institutional water customers only; no rebates are given to single-family residential dwellings. Fixtures must be purchased after the start date of the program (January 1, 2004) and installed in the service area of one of the water districts listed below. In addition, participants must be replacing higher water use devices with new, water-efficient ones. Installation of the devices is the participants' responsibility, and verification of installation may be conducted through a visual on-sight inspection.

In 2004/2005, a total of 2 customers have participated in the program, from the City of Lompoc and the City of Santa Maria. 20 clothes washers and 23 ultra low-flow toilets were replaced and qualified for the rebate. Partners in the program are increasing marketing efforts in the next year to further promote the program.

Areas Offering Rebates:

- City of Lompoc
- City of Santa Barbara
- City of Santa Maria
- Goleta Water District
- Carpinteria Valley Water District
- Montecito Water District

Relates to Implementation of: MOU BMP #s 7 & 9

- Rinse and Save Program

As a member of the California Urban Water Conservation Council (CUWCC), the Santa Barbara County Water Agency is eligible to participate in the Rinse and Save Pre-Rinse Spray Nozzle Program coordinated by the CUWCC. The CUWCC received funding for this program through the California Public Utilities Commission's (CPUC) Public Goods Program and provides overall program management, technical support, and measurement and verification. The CUWCC has contracted with Honeywell DMC Services Inc. to perform the marketing, outreach, product procurement and installation of the spray valves. The only commitment required from interested water agencies is a contribution to overall program costs and some staff time to provide a list of local restaurants to the consultant. The total program costs are \$181.19 per valve and local water agencies are required to pay \$50 per valve, while the remainder of these costs (\$131.19) is funded through the grant from the CPUC. The program is open to restaurants, cafeterias, and other food service providers and will save these customers an average of 200 gallons of water and 2 therms of gas **per day** (See table below for more savings information). The Water Agency coordinated with local water purveyors to share the \$50 local costs and has focused the program in the service areas of those purveyors who chose to cosponsor the program including the City of Santa Barbara, Carpinteria Valley Water District, Montecito Water District, Goleta Water District, the City of Santa Maria, the City of Lompoc, and the California Cities Water Company and Vandenberg Village CSD. Installations for the program began in August 2004. The table below shows the number of installations in each district and a total for the county for the reporting period 2004/2005.

Water District	Number of Installations
Montecito	10
Carpinteria	22
Cal Cities Water	6
Solvang/Buellton	25
Lompoc	36
Santa Maria	42
Santa Barbara	16
Goleta	41
Vandenberg Village CSD	2
TOTAL	198

Relates to Implementation of: MOU BMP #s 7 & 9

6. DATA COLLECTION

- Water Rates Survey:

In January 2005, the annual survey of water rates in Santa Barbara County was distributed to local water purveyors. The information was compiled by staff and sent to all participants in March 2005.

Relates to Implementation of: MOU BMP #11 & Bureau BMP #s A2, B3 & A7.

- Water Production Survey:

Staff conducted the annual survey of water production in the County in January 2005. The results were distributed to local water purveyors, the Water Purveyors Agency and the Bureau of Reclamation. The Water Agency also publishes annual reports on surface and groundwater conditions, with input from the staff of the Regional Water Efficiency Program.

7. INFORMATION CLEARINGHOUSE

- Water Resources Report

The Water Resources Report was published in July 2000. The report provides an excellent overview of water resources within the county, treatment facilities, conservation programs, and per capita use information. Copies of the report were distributed to all water purveyors in the county and to teachers at the Summer Teacher's Conference and it is available in hard copy or on the Internet at www.publicworkssb.org/water. It also provides an excellent resource for politicians, consultants, students, and interested members of the public.

- Gray Water Standards:

Staff distributed (on request) brochures on gray water use in the unincorporated areas of Santa Barbara County.

- Updates on Water Efficiency Legislation:

Staff continually monitor water efficiency legislation and the associated requirements, and disseminate information to local purveyors. The information is distributed through the County Water Connection Newsletter, announcements/handouts at the local Water Purveyor's Agency meetings and other means as appropriate.

- Funding for Conservation:

Staff monitors grants and low interest loans available for water conservation programs. Staff notified local districts about the availability of Bureau of Reclamation grant funds. Staff prepared several proposals for funding for local water conservation projects.

8. TECHNICAL COMMITTEES/CONFERENCES/WORKSHOPS

- Santa Barbara/San Luis Obispo Counties Water Conservation Committee:

This committee, comprised of water conservation staff from the two counties, meets annually to share conservation program ideas and organize joint efforts. Because water supply and demand parameters for the two counties are similar, valuable information and ideas can be shared at these joint meetings. Joint projects have included

development of a water rates survey, water education materials, and the sustainable landscape brochure. No meetings of this committee were held in 2004/2005.

- Department of Water Resources Water Education Committee:

Staff coordinate with this committee and attend meetings whenever possible. This committee offers ideas on curriculum and sharing of ideas with other education staff from around the State. New materials are introduced, and staff use new education guidelines to update County program offerings. Due to staff shortages, no committee meetings were attended in 2004-2005.

- American Water Works Association National Water Conservation Committee:

Staff attends meetings of this national committee whenever possible. The major advantage of this committee is sharing information with water conservation staff from water districts throughout the country. The committee develops joint water use efficiency programs among members, and also produces written materials that can be used nationwide. Water efficiency programs being implemented throughout the nation are highlighted at these meetings. New approaches and technologies are discussed and research needs are identified.

- California Urban Water Conservation Council:

The Council, made up of all signatories to the statewide Memorandum of Understanding for urban water conservation (MOU), was formed as a means to monitor implementation of urban best management practices as outlined in the MOU. Six local agencies, including the County, have signed this agreement. The Council meetings are held quarterly. Water Agency staff attends these meetings, and reports information of interest back to local water purveyors through newsletter articles, letters and meetings.

9. OTHER PROGRAMS

- Water Conservation Plans and Related Reports/Updates:

Staff prepares an annual report of the regional water conservation program each year, which is distributed to all local purveyors and appropriate state and federal agencies. There are several water conservation planning requirements that affect the county and/or local purveyors. These include the state's Urban Water Management Planning Act, the CUWCC's annual report, and the Bureau of Reclamation's water conservation criteria and contract conditions for contractors.

- Regional Drought Management Plan

During Fiscal Year 2000/2001 strategic planning sessions with the water purveyors in Santa Barbara County, Water Agency staff received requests to coordinate the development of a regional drought management plan. Such a plan would allow the County to utilize the experience gained during the 1986-1991 drought to prepare for droughts that may occur in the future while addressing changes in water demand due to population increases, newly developed water supplies and on-going conservation efforts.

In addition, the U.S. Bureau of Reclamation contacted the Water Agency for assistance with the development of a model Drought Management Plan as part of a comprehensive irrigation research and education program, which includes the development of a Drought Preparedness Program.

In response to these requests, Water Agency staff secured grant funding (\$24,640) for the project from the U.S. Bureau of Reclamation and prepared a Drought Planning Handbook for Water Purveyors. The completed handbook is now available for use for water districts throughout California, both through USBR's website and from the Santa Barbara County Water Agency.

In addition, the Santa Barbara County Water Agency, the local water purveyors and the U.S. Bureau of Reclamation, coordinated the development of this Santa Barbara County Regional Water Shortage/Drought Plan beginning in Spring 2004. Water Agency staff utilized the experience gained during the 1986-1991 drought to prepare this regional plan for the county. The intent of the plan is to prepare for droughts that may occur in the immediate future by addressing changes in water demand due to population increases, newly developed water supplies, and on-going conservation efforts.

The Regional Plan describes specific actions to be undertaken by staff and identified timing and coordination with local water purveyors to maximize effectiveness. The elements of the County Drought Plan include:

- Development of a coordinated advertising campaign and public information materials;
- Acceleration of low-flow fixture rebate programs;
- Complete an inventory of potential surplus water available for exchange/sale to districts that may wish to augment their existing supplies;
- Work with medium and small local water purveyors to complete water shortage plans using the
- USBR Water Shortage/Drought Planning Handbook developed by the Water Agency in 2003;
- Hold a public workshop to allow local purveyors and the public a forum for discussing issues that water users may face during a drought; and
- Incorporate other actions into the plan as appropriate in response to future conditions.

The TAC determined that 2004 was too early to run a drought specific advertising campaign, so opted instead to run the Be Water Wise campaign from August to October 2004. The campaign was designed to raise awareness of how many of us over water our landscapes and to highlight tools that are available to irrigate more efficiently through radio spots and newspaper advertisements highlighting the importance of watering wisely.

In addition, three public workshops were held in late October and early November. The County Water Agency co-sponsored these workshops with water purveyors on the south coast. The first workshop was hosted by the Carpinteria Valley Water District. This

event was televised live from Carpinteria City Hall. The second workshop was hosted by the Goleta Water District and was held at the Goleta Community Center. The third workshop was co-hosted by the Montecito Water District and the City of Santa Barbara and was televised live from the Gephard Room at the City's Garden Street offices. The topics covered at each workshop included: an update on climate, water supplies and water efficiency programs Countywide by the County Water Agency, and an update on water supplies and efficiency programs by staff members of the hosting water purveyor(s). Written handouts were available. A copy of the Power Point presentation from the Carpinteria workshop is posted on the County's Drought Website at <http://www.sbwater.org/DroughtPlanning.htm>. The sponsors of these workshops plan to provide an update to water supply conditions in Spring 2005.

The County Water Agency also worked with the Carpinteria Valley Water District and the Montecito Water District to prepare drought response plans. Based on this planning process, a draft drought planning handbook was prepared for all local purveyors. A draft of this handbook, which was adapted from the Bureau of Reclamation Water Shortage Contingency Planning Handbook completed in 2002, is available at <http://www.sbwater.org/DroughtPlanning.htm>.

The County Water Agency also provided additional funding for rebate programs, including the Rinse and Save Pre-Rinse Spray Nozzle Program coordinated by the California Urban Water Conservation Council. The program is open to restaurants, cafeterias, and other food service providers and will save these customers an average of 200 gallons of water and 2 therms of gas **per day**. The first installations began in January 2005 and will continue until 600 units are installed within the county.

In December 2004, Lake Cachuma reached 67,854 acre-feet (35%) - its lowest level since February 1991. However, in January 2005, the possibility of an imminent drought was suspended when winter storms caused Lake Cachuma to rise 15 feet in one day and spill on January 10. A full Cachuma provides seven years of water allotments to South Coast purveyors, which is supplemented by groundwater, State Water, recycled water and other surface supplies and also replenishes Santa Ynez and Lompoc Valley groundwater basins over the same time frame to provide enough water for our community. Despite receiving this "windfall" of water, local districts will continue to provide ongoing water efficiency education and fixture replacement rebates for local customers – just as they always do – and ask customers to conserve water – as they always do - but they won't require their customers to make the more stringent, life impacting changes required during a drought.

10. OVERVIEW

Events Attended to Promote Program	9
Grant Funds Secured	\$138,700
Brochures Available	18
Reports Available	4
Customers Reached through Public Events and Presentations (Estimate only includes attendance at public events and does not include those reached	15,205

through media advertising or direct mail)	
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