*Final Report*

# 2005 Urban Water Management Plan—Culver City

Golden State Water Company
A Subsidiary of American States Water Company

**Region II Headquarters**

1920 West Corporate Way
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December 2005

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*Final Report*

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Water Company
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# Contents


Chapter Page

**NOTICE OF ADOPTION ..... IX**

**ABBREVIATIONS ..... XVI**

**DEFINITIONS ..... XV**

**CHAPTER 1. INTRODUCTION AND OVERVIEW ..... 1-1**

BACKGROUND ..... 1-1
SYSTEM OVERVIEW ..... 1-2
CALIFORNIA URBAN WATER CONSERVATION COUNCIL ..... 1-4
PUBLIC UTILITY COMMISSION POLICY CHANGES ..... 1-4
AGENCY COORDINATION ..... 1-5
PUBLIC PARTICIPATION AND PLAN ADOPTION ..... 1-7
UWMP PREPARATION ..... 1-7
UWMP IMPLEMENTATION ..... 1-8
CONTENT OF THE UWMP ..... 1-8
RESOURCE OPTIMIZATION ..... 1-9

**CHAPTER 2. SERVICE AREA ..... 2-1**

AREA ..... 2-1
DEMOGRAPHICS ..... 2-1
POPULATION, HOUSING AND EMPLOYMENT ..... 2-3
*SCAG Population Projection Development Methodology ..... 2-3*
*Culver City CSA Population Projections ..... 2-4*
CLIMATE ..... 2-6

**CHAPTER 3. WATER SUPPLY ..... 3-1**

WATER SOURCES ..... 3-2
IMPORTED WATER ..... 3-3
GROUNDWATER ..... 3-3
RELIABILITY OF SUPPLY ..... 3-4
*Reliability of Imported Water ..... 3-4*
Metropolitan Integrated Resource Plan (IRP) ..... 3-4
Metropolitan Water Surplus and Drought Management Plan (WSDM Plan) ..... 3-5
Metropolitan Local Resource Investments ..... 3-5
*WBMWD's Water Supply Programs ..... 3-6*
*Culver City System's Water Supply Reliability ..... 3-7*
*Factors Resulting in Inconsistency of Supply ..... 3-8*
TRANSFERS AND EXCHANGES ..... 3-8
PLANNED WATER SUPPLY PROJECTS AND PROGRAMS ..... 3-8
WHOLESALE AGENCY SUPPLY DATA ..... 3-9

**CHAPTER 4. WATER USE ..... 4-1**

HISTORICAL AND PROJECTED WATER USE ..... 4-2
SALES TO OTHER AGENCIES ..... 4-8
OTHER WATER USES AND UNACCOUNTED-FOR WATER ..... 4-8
TOTAL WATER DEMAND ..... 4-9
DATA PROVIDED TO WHOLESALE AGENCY ..... 4-9

**CHAPTER 5. DEMAND MANAGEMENT MEASURES ..... 5-1**

BMP IMPLEMENTATION STATUS ..... 5-3
COST BENEFIT ANALYSIS ..... 5-6
RECOMMENDED CONSERVATION PROGRAM ..... 5-7
Economic Considerations ..... 5-8
Legal Considerations ..... 5-8
Cost Share Partners ..... 5-9

**CHAPTER 6. DESALINATION ..... 6-1**

**CHAPTER 7. WATER SHORTAGE CONTINGENCY PLAN ..... 7-1**

ACTION STAGES ..... 7-2
MINIMUM SUPPLY ..... 7-3
CATASTROPHIC SUPPLY INTERRUPTION PLAN ..... 7-4
PROHIBITIONS, PENALTIES, AND CONSUMPTION REDUCTION METHODS ..... 7-6
REVENUE IMPACTS OF REDUCED SALES ..... 7-7
WATER-USE MONITORING PROCEDURES ..... 7-9

**CHAPTER 8. RECYCLED WATER PLAN ..... 8-1**

COORDINATION ..... 8-1
WASTEWATER QUANTITY, QUALITY, AND CURRENT USES ..... 8-2
POTENTIAL AND PROJECTED USE ..... 8-4
OPTIMIZATION AND INCENTIVES FOR RECYCLED WATER USE ..... 8-5

**CHAPTER 9. WATER QUALITY ..... 9-1**

GSWC MEASURES FOR WATER QUALITY REGULATION COMPLIANCE ..... 9-1
CURRENT AND PROPOSED WATER QUALITY REGULATIONS ..... 9-1
*Safe Drinking Water Act (SDWA) ..... 9-2*
*Primacy ..... 9-3*
*Total Coliform Rule (TCR) ..... 9-8*
TCR Potential Revisions and Distribution System Requirements ..... 9-8
*Surface Water Treatment Rules ..... 9-9*
The Surface Water Treatment Rule (SWTR) ..... 9-9
Cryptosporidium Action Plan ..... 9-10
Interim Enhanced Surface Water Treatment Rule ..... 9-12
Long Term 1 Enhanced Surface Water Treatment Rule ..... 9-13
Long Term 2 Enhanced Surface Water Treatment Rule ..... 9-13
*Disinfectant/Disinfection By-Product Rules ..... 9-14*
Total Trihalomethanes (TTHM) Rule ..... 9-14
Disinfectant/Disinfection By-Product (D/DBP) Rule Stage 1 ..... 9-15
D/DBP Rule Stage 2 ..... 9-17
*Volatile Organic, Synthetic Organic and Inorganic Chemical Rules ..... 9-18*
Volatile Organic Chemicals Rule ..... 9-18
Phase II Synthetic Organic Chemicals and Inorganic Chemicals Rule ..... 9-19
Phase V Synthetic Organic Chemicals and Inorganic Chemicals Rule ..... 9-19
*Groundwater Rule ..... 9-19*
*Filter Backwash Rule ..... 9-20*
*Lead and Copper Rule ..... 9-20*
*Arsenic Rule ..... 9-21*
*Radionuclide Rule ..... 9-22*
*Radon Rule ..... 9-23*
*Drinking Water Contaminant Candidate List ..... 9-24*
WATER QUALITY ISSUES ..... 9-26
*Surface Water Quality ..... 9-26*
*Groundwater Quality ..... 9-26*
PROJECTED IMPACT OF WATER QUALITY ..... 9-27
DISTRIBUTION SYSTEM WATER QUALITY ..... 9-27

EMERGING WATER QUALITY ISSUES ..... 9-28

**CHAPTER 10. WATER SERVICE RELIABILITY ..... 10-1**

NORMAL WATER YEAR ANALYSIS ..... 10-2
SINGLE DRY-YEAR ANALYSIS ..... 10-3
MULTIPLE DRY-YEAR ANALYSIS ..... 10-4

**CHAPTER 11. REFERENCES ..... 11-1**

## Tables

**Table 1-1** Coordination with Agencies ..... 1-6
**Table 1-2** Summary of UWMP Chapters and Corresponding Provisions of the California Water Code ..... 1-8
**Table 2-1**. Culver City CSA Historical and Projected Population ..... 2-5
**Table 2-2** Monthly Climate Data Summary for Culver City CSA ..... 2-6
**Table 3-1** Current and Planned Water Supplies for the Culver City System in ac-ft/yr ..... 3-2
**Table 3-2** Supply Reliability for the Culver City System for year 2030 ..... 3-7
**Table 3-3** Basis of Water Year Data for Imported Water ..... 3-8
**Table 3-4** Factors Resulting in Inconsistency of Supply ..... 3-8
**Table 3-5** Transfer and Exchange Opportunities ..... 3-8
**Table 3-6** Future Water Supply Projects in ac-ft ..... 3-9
**Table 3-7** Existing and Planned Water Sources Available to the Culver City System as Identified by WBMWD ..... 3-9
**Table 3-8** Reliability of Wholesale Supply for Year 2030 ..... 3-10
**Table 3-9** Factors Affecting Wholesale Supply ..... 3-10
**Table 4-1** Population-Based and Historical-Trend Projections of the Number of Metered Service Connections for the Culver City System ..... 4-6
**Table 4-2** Population-Based and Historical-Trend Projections of Water Deliveries for Service Connections for the Culver City System in ac-ft/yr ..... 4-7
**Table 4-3** Sales to Other Agencies in ac-ft/yr ..... 4-8
**Table 4-4** Additional Water Uses and Losses in ac-ft/yr ..... 4-8
**Table 4-5** Projected Water Sales, Unaccounted-for System Losses, and Total Water Demand (ac-ft/yr) ..... 4-9
**Table 4-6** Summary of Culver City System Data Provided to WBMWD in ac-ft/yr ..... 4-9
**Table 5-1** Water Conservation Best Management Practices ..... 5-3
**Table 5-2** Summary of Water Conservation Activities (1) ..... 5-4
**Table 5-3** Summary of Best Management Practice Implementation ..... 5-5
**Table 5-4** Results of Economic Analysis for BMPs Currently Not Meeting Coverage Requirements ..... 5-7
**Table 5-5** Results of Economic Analysis for BMPs Currently Not Meeting Coverage Requirements ..... 5-10
**Table 6-1** Summary of Opportunities for Water Desalination ..... 6-2
**Table 7-1** Water Supply Shortage Stages and Conditions ..... 7-2
**Table 7-2** Three-Year Estimated Minimum Water Supply in ac-ft/yr ..... 7-4
**Table 7-3** Summary of Actions for Catastrophic Events ..... 7-5
**Table 7-4** Summary of Mandatory Prohibitions ..... 7-6

**Table 7-5** Summary of Penalties and Charges for Excessive Use ..... 7-7
**Table 7-6** Summary of Consumption Reduction Methods ..... 7-8
**Table 7-7** Summary of Actions and Conditions that Impact Revenue ..... 7-8
**Table 7-8** Summary of Actions and Conditions that Impact Expenditures ..... 7-9
**Table 7-9** Proposed Measures to Overcome Revenue Impacts ..... 7-9
**Table 7-10** Proposed Measures to Overcome Expenditure Impacts ..... 7-9
**Table 7-11** Water-Use Monitoring Mechanisms ..... 7-10
**Table 8-1** Role of Participating Agencies in the Development of the Recycled Water Plan ..... 8-2
**Table 8-2** Estimates of Existing and Projected Wastewater Collection and Treatment in ac-ft/yr (mgd) for the Culver City System ..... 8-3
**Table 8-3** Estimates of Existing and Projected Disposal of Wastewater In ac-ft/yr (mgd) for the Culver City System ..... 8-4
**Table 8-4** Existing Recycled Water Use ..... 8-4
**Table 8-5** Potential Future Recycled Water Uses in ac-ft/yr ..... 8-4
**Table 8-6** Projected Future Recycled Water Use in Service Area in ac-ft/yr ..... 8-5
**Table 8-7** Comparison of Recycled Water Uses—Year 2000 Projections versus 2005 Actual ..... 8-5
**Table 8-8** Methods to Encourage Recycled Water Use and the Resulting Projected Use in ac-ft/yr ..... 8-5
**Table 9-1** Status of Drinking Water Regulations ..... 9-3
**Table 9-2** Current Federal Drinking Water Standards ..... 9-5
**Table 9-3** Current State Secondary Drinking Water Regulations ..... 9-7
**Table 9-4** Bin Requirements Table (from Microbial/Disinfection Byproducts [M/DBP] Federal Advisory Committee Stage 2 M-DBP Agreement in Principle) ..... 9-13
**Table 9-5** Microbial Toolbox Components (from Microbial/Disinfection Byproducts [M/DBP] Federal Advisory Committee Stage 2 M-DBP Agreement in Principle) ..... 9-14
**Table 9-6** Disinfection By-Product MCLs from Stage 1 of the D/DBP Rule ..... 9-16
**Table 9-7** Disinfectant MRDLs from Stage 1 of the D/DBP Rule ..... 9-16
**Table 9-8** Required Removal of TOC by Enhanced Coagulation, Step 1 ..... 9-17
**Table 9-9** Target pH Values for Enhanced Coagulation, Step 2 Bench Testing ..... 9-17
**Table 9-10** Existing and Revised MCLs for Radionuclides ..... 9-23
**Table 9-11** Contaminant Candidate List (CCL) ..... 9-25
**Table 9-12** Summary of Assessment ..... 9-27
**Table 9-13** Summary of Projected Water Supply Changes Due to Water Quality Issues ..... 9-27
**Table 10-1** Projected Normal Water Year Supply ..... 10-2
**Table 10-2** Summary of Projected Normal Water Year Demands ..... 10-2
**Table 10-3** Comparison of Projected Normal Year Supply and Demand ..... 10-3
**Table 10-4** Projected Single-Dry Year Water Supply ..... 10-3
**Table 10-5** Summary of Projected Single-Dry Year Demands ..... 10-4
**Table 10-6** Comparison of Projected Supply and Demand for Single Dry Year ..... 10-4
**Table 10-7** Projected Multiple-Dry Year Water Supply and Demand Assessment ..... 10-6

## Figures

**Figure 1-1.** Culver City System Location Map. ....1-3
**Figure 2-1.** Culver City Customer Service Area Map ....2-2
**Figure 2-2**. Historical and Projected Population, Household and Employment Growth within the Culver City CSA. ....2-5
**Figure 2-3**. Monthly Average Precipitation in the Culver City CSA based on 30 Years Historical Data ....2-7
**Figure 4-1.** Historical and Projected Number of Metered Service Connections....4-3
**Figure 4-2.** Historical Water Use and Future Water Use Projections....4-3
**Figure 4-3.** Water Use by Customer Type....4-5

## Appendixes

Appendix A Urban Water Management Planning Act
Appendix B Public Hearing Notice and Meeting Minutes
Appendix C Public Comments on the Draft UWMP
Appendix D Economic Analysis of Selected Demand Management Measures
Appendix E Council Annual Reports for Demand Management Measures
Appendix F Rule No. 14.1: Mandatory Water Conservation, Restrictions, and Rationing Program
Appendix G Rate Schedule
Appendix H Responses to Public Comments
Appendix I Groundwater Basin Water Rights Stipulation/Judgment
Appendix J Summary of Population Based on Census Data

# Notice of Adoption

A meeting to solicit public comments on the 2005 Urban Water Management Plan for the Golden State Water Company Culver City System was held on November 16, 2005 at 7:00 pm in the Iksan Room of the Veterans Memorial Complex in Culver City, California. Notice of this meeting was published in accordance with Section 6066 of Government Code in The Daily Breeze on October 27, 2005 and on November 3, 2005.

Copies of the Urban Water Management Plan were made available to the public at the Golden State Water Company Culver City Customer Service Office in Culver City, California two weeks prior to the public hearing.

Comments, oral and written, if received and responses to comments are documented in Appendix H of this document.

Golden State Water Company hereby adopts the 2005 Urban Water Management Plan for the Culver City System.

Patrick Scanlon
Vice President, Customer Service
Region II
Golden State Water Company
December 31, 2005

# Abbreviations

| | |
|---|---|
| ABAG | Association of Bay Area Governments |
| ac-ft | acre-feet |
| ac-ft/yr | acre-feet per year |
| Act | Urban Water Management Planning Act |
| AMCL | alternative MCL |
| AWWA | American Water Works Association |
| BMPs | best management practices |
| CBO | community-based organization |
| CCL | contaminant candidate list |
| CCRs | consumer confidence reports |
| CDHS | California Department of Health Services |
| cfs | cubic feet per second |
| CIMIS | California Irrigation Management Information System |
| Council | California Urban Water Conservation Council |
| CPE | comprehensive performance evaluation |
| CPUC | California Public Utilities Commission |
| CSA | customer service area |
| CT | concentration time |
| CUWA | California Urban Water Agencies |
| CWSs | community water systems |
| D/DBP | disinfectant/disinfection by-product |
| DMM | demand management measure |
| DOC | dissolved organic carbon |
| DOF | Department of Finance |
| DWR Guidebook | Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan |
| DWR | Department of Water Resources (California) |

| | |
|---|---|
| EC | enhanced coagulation |
| EPA | Environmental Protection Agency |
| ERP | emergency response plan |
| ETo | evapotranspiration |
| gpm | U.S. gallons per minute |
| GSWC | Golden State Water Company |
| GWR | Groundwater Rule |
| HAA5 | haloacetic acids |
| IESWTR | Interim Enhanced Surface Water Treatment Rule |
| IOCs | inorganic contaminants |
| IRP | Integrated Resource Plan |
| LACSD | Sanitation Districts of Los Angeles County |
| LT1ESWTR | Long Term 1 Enhanced Surface Water Treatment Rule |
| LT2ESWTR | Long Term 2 Enhanced Surface Water Treatment Rule |
| MCLGs | maximum contaminant level goals |
| MCLs | maximum contaminant levels |
| Metropolitan | Metropolitan Water District of Southern California |
| MG | million gallons |
| MMM | multimedia mitigation |
| MOU | memorandum of understanding (regarding urban water conservation in California) |
| MRDLs | maximum residual disinfectant levels |
| mrem | millirems |
| MTBE | methyl tertiary-butyl ether |
| MWD | Municipal Water District with reference to any of the member agencies of the Metropolitan Water District of Southern California |
| N/A | not available |
| NAICS | North American Industry Classification System |
| NDMA | N-nitrosodimethylamine |
| NPV | net present value |
| NTNCWS | non-transient non-community water systems |

| | |
|---|---|
| NTU | nephelometric turbidity units |
| O&M | operation and maintenance |
| OEHHA | Office of Environmental Health Hazard Assessment |
| pCi | picoCuries |
| RO | reverse osmosis |
| SCAG | Southern California Association of Governments |
| SDWA | Safe Drinking Water Act |
| SMCL | secondary maximum contaminant level |
| SOCs | synthetic organic contaminants |
| SUVA | source-water-specific ultraviolet absorbance |
| SWP | State Water Project |
| SWTR | Surface Water Treatment Rule |
| TCR | Total Coliform Rule |
| TDS | total dissolved solids |
| TOC | total organic carbon |
| TTHMs | Total Trihalomethanes Rule |
| UCM | unregulated contaminants monitoring |
| ULF | ultra low flush |
| ULFT | ultra-low-flush-toilet |
| UWMP | Urban Water Management Plan |
| VOCs | volatile organic compounds |
| WEWAC | Water Education Water Awareness Committee |
| WRCC | Western Regional Climate Center |
| WRP | water reclamation plant |
| WSDM Plan | Water Surplus and Drought Management Plan |
| WY | water year |

# Definitions

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

*CHAPTER 2. DEFINITIONS*

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

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

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

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

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

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

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

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

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

# Chapter 1. Introduction and Overview

## Background

The Urban Water Management Plan (UWMP) for the Golden State Water Company (GSWC) Culver City System is prepared in compliance with Division 6, Part 2.6, of the California Water Code, Sections 10610 through 10657 as last amended by Senate Bill (SB) 318, the Urban Water Management Planning Act (Act). The original bill, requiring a UWMP, was initially enacted in 1983. SB 318, which became law in 2004, is the eighteenth amendment to the bill. Increased emphasis on drought contingency planning, water demand management, reclamation, and groundwater resources has been provided through the updates to the original bill.

Under the current law, urban water suppliers with more than 3,000 service connections or water use of more than 3,000 acre-feet per year (ac-ft/yr) are required to submit a UWMP every five years to the California Department of Water Resources (DWR). The reports must be submitted by December 31 of years ending in zero and five. Under the name Southern California Water Company, GSWC prepared an UWMP for the Culver City System in 1985, 1990, 1995, and 2000. The 2005 UWMP is an update to the 2000 plan.

The law, as it is now, states and declares the following:

*Section 10610.2*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

# System Overview

GSWC owns and operates the Culver City System. GSWC is an investor-owned public utility company regulated by the California Public Utilities Commission (CPUC).

The Culver City System, located in Los Angeles County, serves most of Culver City, and part of the neighboring City of Los Angeles. The Culver City service area is primarily characterized by residential land use, with some commercial and industrial land use. Figure 1-1 illustrates the location of the Culver City System.

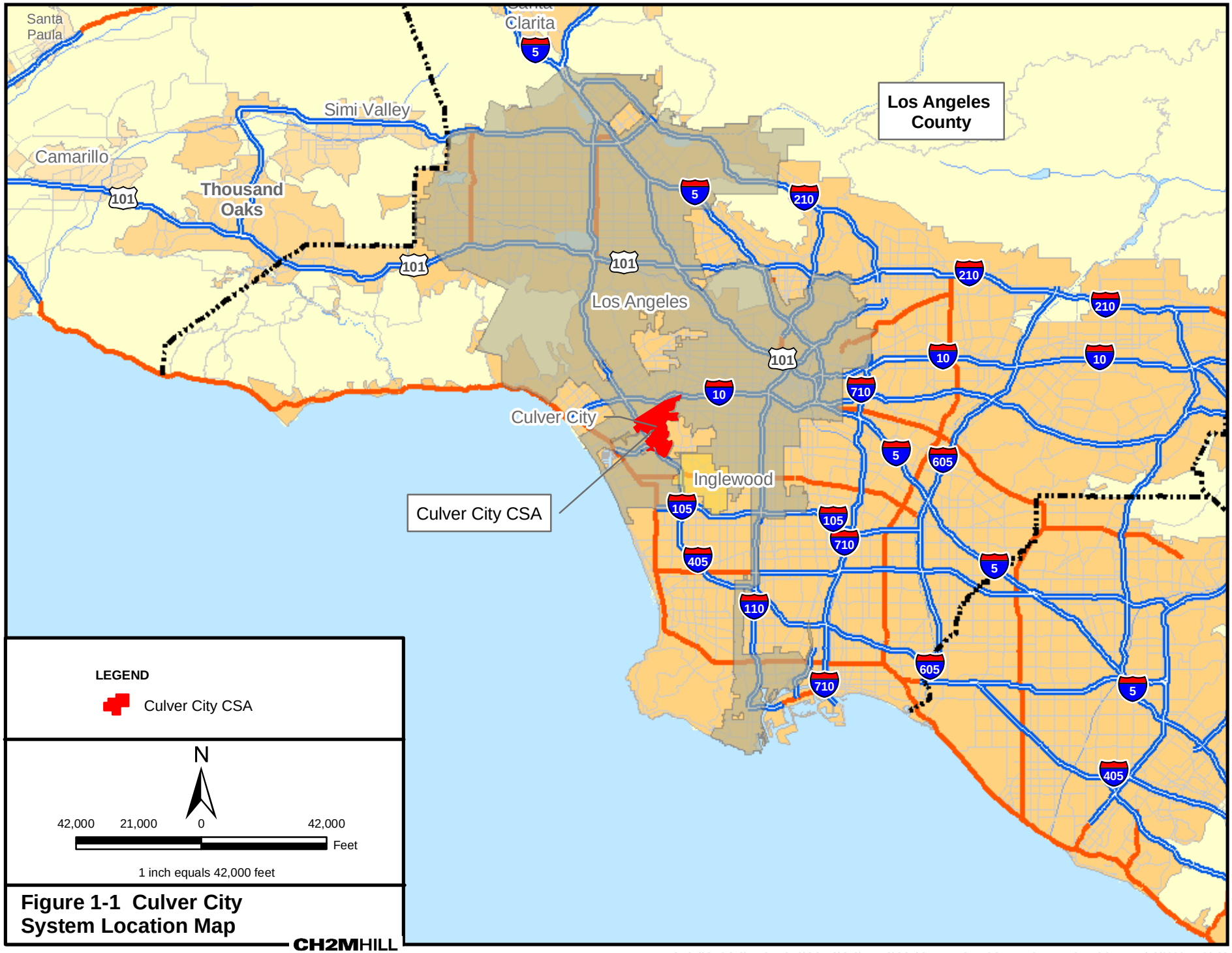


**Figure 1-1 Culver City System Location Map**

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## California Urban Water Conservation Council

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

The objective of the Council is to implement the MOU. The MOU was signed into existence in 1991 by nearly 100 urban water agencies and environmental groups. Current membership of the Council is over 300 members from various groups such as water suppliers, public advocacy organizations, and other interested groups (Council, 2004).

The MOU is a document by which the signatories obligate themselves to implement the urban water conservation practices identified in the MOU. The goal of the practices in the MOU is to reduce long-term urban water demands and to provide practices that may be implemented during occasional water supply shortages (Council, 2004). The urban water conservation practices identified in the MOU are called the Best Management Practices (BMPs) and range from water audits to toilet replacements. There are 14 practices that also coincide with the 14 demand management measures (DMMs) identified in the Act.

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

## Public Utility Commission Policy Changes

Concurrent with the finalization of this document, the CPUC is considering the adoption of policy changes and objectives that would be applicable to GSWC and all other regulated water utilities. The CPUC's draft "Water Action Plan" ("WAP") has established the following objectives:

1. Maintain highest standards of water quality;
2. Strengthen water conservation programs to a level comparable to those of energy utilities;
3. Promote water infrastructure investment;
4. Assist low income ratepayers;
5. Streamline CPUC regulatory decision-making; and
6. Set rates that balance investment, conservation, and affordability.

The WAP is a general policy document. Specific implementation policies and programs, along with necessary modifications to CPUC ratemaking policies, will be developed based

on the final WAP and other programs including conservation, long term planning, water quality and drought management programs developed in conjunction with the CPUC.

GSWC has been actively involved with the CPUC in suggesting optimal approaches to the WAP. In particular, the GSWC has suggested specific implementation measures and modifications to certain CPUC ratesetting practices so that regulated utilities are able as a practical matter to achieve the policy objectives of the WAP. The exact implementation details have not yet been determined, but if successful, are expected to have a significant impact on GSWC approaches to the planning and management of resources. These efforts may include further investment in local resource optimization, reduced reliance on imported supplies, enhanced conservation and intensification of company-wide efforts to optimize water resource mix, including planned water supply projects and programs to meet the long term water supply needs of GSWC's customers.

In another example, the Urban Water Management Planning Act requires public water suppliers to have in place predetermined actions to be undertaken during water shortage conditions. GSWC has developed actions to be undertaken in response to water supply shortages, including up to a 50 percent reduction in water supply. However, implementation of the actions is dependent upon CPUC approval, particularly where mandatory water use restrictions may be required. As an element of the WAP and related policy improvements, GSWC has requested the CPUC adopt water shortage allocation policies that will facilitate appropriate drought response activities and associated cost recovery mechanisms.

Finally, as part of the Water Action Plan process and otherwise, GSWC is seeking parity with public water agencies in key areas that will impact its long term supply planning and reliability, namely, 1) access to state bond money on behalf of its customers, and 2) full participation in integrated regional water planning mechanisms to ensure that utility customers have a voice in planning outcomes, and, equal access to available funding to implement agreed planning objectives on behalf of their customers.

This UWMP presents an assessment of GSWC's demand projections and water supply availability and reliability under currently established CPUC regulations and conditions. While GSWC has detailed approaches to providing its customers with a reliable supply of water in accordance with UWMP criteria, adoption and implementation of the WAP and other policy objectives mentioned above will likely result in changes in the resource mix described in this UWMP which will likely further improve water supply reliability.

# Agency Coordination

Water Code Section 10620 details the coordination requirements of the Act and provides guidance on how the UWMP can be prepared. The text of this section states:

*Section 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.*

GSWC initiated agency coordination with a mailing of letters to cities and counties within its service area, as well as to wholesale agencies, wastewater agencies, and agencies with which GSWC has emergency connections. The initial letters notified the agencies of GSWC intent and requested data for the preparation of the UWMPs. All identified agencies received a follow-up telephone call. Notices of public meeting and intent to adopt were submitted with a copy of the draft report to all above-mentioned agencies. Table 1-1 lists the agencies contacted during the preparation of this UWMP.

Table 1-1
Coordination with Agencies

| Agency | Participated in UWMP Development | Commented on the Draft | Attended Public Meetings | Contacted for Assistance | Received Copy of the Draft | Sent Notice of Intent to Adopt | Not Involved/ No Information |
|---|---|---|---|---|---|---|---|
| City of Culver City | | | | ✓ | ✓ | ✓ | |
| City of Los Angeles | | | | ✓ | ✓ | ✓ | |
| County of Los Angeles | | | | ✓ | ✓ | ✓ | |
| City of Los Angeles Bureau of Sanitation | | | | ✓ | | ✓ | |
| Metropolitan Water District of Southern California (Metropolitan) | | | | ✓ | ✓ | ✓ | |
| Southern California Association of Governments (SCAG) | | | | ✓ | | ✓ | |
| West Basin Municipal Water District (WBMWD) | | | | ✓ | ✓ | ✓ | |

Notes

1. This table is based on DWR's *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* (DWR Guidebook) Table 1.

# Public Participation and Plan Adoption

Public participation and plan adoption requirements are detailed in the following section of the Act:

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

For this update of the UWMP for the Culver City System, a public hearing was held on November 16, 2005 in the Iksan Room of the Veterans Memorial Complex in Culver City, California. This public session was held for review and comment on the draft plan before approval by GSWC. Legal public notices for the public hearing were published in the local newspapers in accordance with Government Code Section 6066. Copies of the draft plan were available to the public at GSWC's Culver City Customer Service Office in Culver City, California. Appendix B contains a copy of the hearing notice from a local newspaper and the meeting minutes from the public pertaining to the UWMP. Appendix C contains comments received, if any, and Appendix H contains responses to public comments.

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

# UWMP Preparation

GSWC prepared this UWMP with the assistance of its consultant, CH2M HILL, as permitted by the following section of the Act.

*Section 10620*

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

During the preparation of the UWMP, documents that have been prepared over the years by GSWC and other entities were reviewed and results of those documents incorporated, as applicable, into this UWMP. The list of the documents is provided in Chapter 11.

The adopted plans are available for public review at GSWC's Culver City Customer Service Office. Copies of the plan were submitted to DWR, cities and counties within the service area, the State Library, and other applicable institutions within 30 days of adoption as required by Section 10644 and 10645.

# UWMP Implementation

GSWC is committed to the implementation of this UWMP as required by Section 10643 of the Act. Each region of GSWC has a conservation coordinator that oversees the implementation of DMM via GSWC participation in the Council's MOU.

# Content of the UWMP

This UWMP addresses all subjects required by Section 10631 of the Act as defined by Section 10630, which permits "levels of water management planning commensurate with the numbers of customers served and the volume of water supplied." All applicable sections of the Act are discussed in this UWMP, with chapters of the UWMP cross-referenced against the corresponding provision of the Act in Table 1-2.

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

| Chapter | Corresponding Provisions of the Water Code | |
|---|---|---|
| Chapter 1. **Error! Not a valid result for table.** | 10642 | Public participation |
| | 10643 | Plan implementation |
| | 10644 | Plan filing |
| | 10645 | Public review availability |
| | 10620 (a)–(e) | Coordination with other agencies; document preparation |
| | 10621 (a)–(c) | City and county notification; due date; review |
| | 10620 (f) | Resource optimization |
| | 10630 | Level of planning |
| | 10641 | Coordination |
| Chapter 2. Service Area | 10631 (a) | Demographics and climate |
| Chapter 3. Water Supply | 10631 (b)–(d), (h), (k) | Water sources, reliability of supply, transfers and exchanges, supply projects, data sharing |
| Chapter 4. Water Use | 10631 (e), (k) | Water use, data sharing |
| Chapter 5. Demand Management Measures | 10631 (f)–(g), (j) | DMM |
| | 10631.5 | DMM implementation status |
| Chapter 6. Desalination | 10631 (i) | Desalination |
| Chapter 7. Water Shortage Contingency Plan | 10632 | Water shortage contingency plan |
| Chapter 8. Recycled Water Plan | 10633 | Recycled water |
| Chapter 9. Water Quality | 10634 | Water quality impacts on reliability |
| Chapter 10. Water Service Reliability | 10635 | Water service reliability |

# Resource Optimization

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

GSWC is committed to optimizing its available water resources and implements water conservation programs for each of its districts or customer service areas (CSAs). In an effort to expand the breadth of offered programs, GSWC partners with wholesale suppliers, energy utilities, and other agencies that support water conservation programs. While GSWC is fully committed to optimizing its available water resources and implementation of BMPs and DMMs, GSWC is currently limited in its ability to do so by certain ratesetting practices. As noted in the introduction, GSWC is working with the CPUC in the shaping of the Water Action Plan so that it assists regulated water utilities in implementing measures that optimize water resource programs.

# Chapter 2. Service Area

Service area requirements are detailed in the following section of the Act:

*Section 10631*

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

Chapter Two summarizes the Culver City System's CSA and presents an analysis of available demographics, population growth projections, and climate data to provide the basis for estimating future water requirements.

## Area

The Culver City CSA is located in Los Angeles County, serves most of Culver City, and part of the neighboring City of Los Angeles. It doesn't include a strip of Culver City that extends along Washington Boulevard and Southwest of McLaughlin Avenue. Figure 2-1 illustrates the CSA of Culver City System. The service area is primarily characterized by residential land use, with some commercial and industrial land use.

## Demographics

The City of Culver City was chosen as demographically representative of the Culver City System. According to 2000 U.S. census data, the median age of Culver City's residents is 39.7 years. Culver City has average household size of 2.3 and a median household income of approximately $51,792.

General Plan or land use information is not available for the Culver City System. Based on Culver City's CSA map, the system appears to be near "build-out", i.e. the planning area has reached its maximum population. There are only a few undeveloped individual parcels in the system and any growth occurring will be a combination of urban expansion and in-fill. In a built-out or nearly built-out area, changes are minor and difficult to predict.

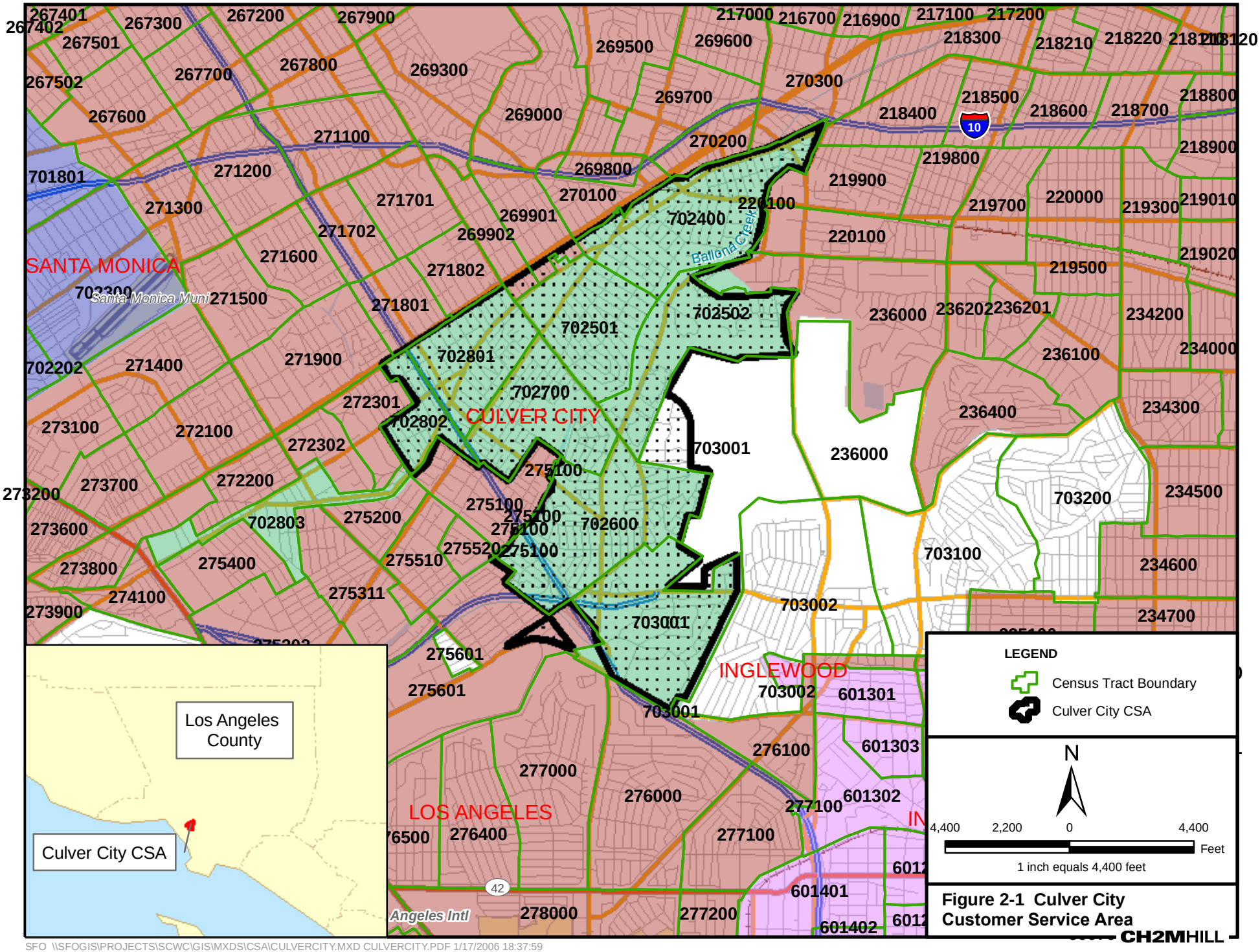



Figure 2-1 Culver City Customer Service Area

SFO \\SFOGIS\PROJECTS\SCWC\GIS\MXDS\CSA\CULVERCITY.MXD CULVERCITY.PDF 1/17/2006 18:37:59

# Population, Housing and Employment

Population, housing, and employment projections were developed for the Culver City CSA using the Southern California Association of Governments (SCAG) population, housing and employment data. SCAG recently updated its projections for population, household, and employment growth through the year 2030 using 2000 U.S. Census data. SCAG's methodology is described below, followed by the derivation of population projections for the Culver City System. The current population projections differ from previous projections developed in 2000 primarily by the use of 2000 U.S. Census data. Previous projections utilized 1990 U.S. Census data.

## SCAG Population Projection Development Methodology

The 2000 population, housing, and employment data is derived from the 2000 U.S. Census, which forms a baseline for local data projections. SCAG applies a statistical cohort-component model and the headship rate to the 2000 U.S. Census data for regional, county, and household demographic projections. The cohort model projects population by adding increases in population (births and relocation into the region) and subtracting decreases in population (deaths and relocation out of the region). The cohort model uses a group quartered population, meaning it is broken down by sex, age, and ethnicity. Headship rate is the proportion of a population cohort that forms the household as specified by age and ethnicity. SCAG uses headship rate to project regional and county households by multiplying the projected civilian resident population by projected headship rates.

The forecasts and projections are grouped into many geographical categories, including regional, county, city, unincorporated areas, census tract, and transportation analysis zones. To evaluate the Culver City System, SCAG data was used in census tract form, the smallest geographic division of data that SCAG provides. SCAG projects subcounty and census tract demographic trends using the housing unit method. This is the most widely used method for estimating and projecting local-area households and population for planning purposes. It projects the number of occupied housing units (households) and persons per household. Households are extrapolated from past trends in occupied housing units. Population per household is estimated by multiplying the number of occupied households by the projected average household size.

SCAG regional employment projections utilize a top-down approach, starting with a U.S. forecast followed by a California then a (SCAG) regional forecast. Employment projections are based on population and household projections, labor force participation rates, long-range unemployment rates, the ratio of total jobs to employed residents, and historical employment growth trends.

SCAG's demographic forecasting section works closely with California Department of Finance (DOF), and the Plans and Programs Technical Advisory Committee, which consists of members from subregions, local jurisdictions, the public and other major stakeholders to produce, review, and refine the socioeconomic projections for population, housing, and employment. The SCAG's socioeconomic projections were compared with regional independent projections and adjustments are made accordingly before public release.

The detailed explanation of the population projection process employed by SCAG is provided in Final 2004 RTP Technical Appendix, Appendix A: Growth Forecast, 2004. (SCAG Projections, 2004).

## Culver City CSA Population Projections

SCAG-derived census-tract projections were used to determine population from 2000 to 2030. The Culver City CSA boundaries often contain multiple census tracts, many of which have boundaries that do not coincide exactly with service area boundaries. The population projection analysis consisted of superimposing service area boundaries over census tract boundaries, identifying the applicable overlapping census tracts, and developing a percentage estimate for each overlapping area. For a census tract 100 percent within the service area boundaries, it was assumed that 100 percent of the associated census tract population data was applicable to the Culver City System. For areas where the overlap was not exact, the area of overlap as a percentage was applied to the data to develop an estimate of applicable population. Appendix J, Table J-1 lists the census tracts with a corresponding estimate of what percent of each tract lies within the Culver City System. It was typically assumed that the various types of housing and employment distributed within a census tract are distributed uniformly within all parts of that census tract, unless maps indicated non-uniform concentrations. In these cases, population estimates were either increased or decreased as applicable to match the existing land use. Appendix J, Table J-2 contains all of the SCAG's historic and projected demographic data for each census tract number from 2000 through 2030. Figure 2-1 details the census tracts within the Culver City System.

As concluded from analysis of SCAG demographic data, the Culver City System has an estimated population of 37,577 people in 2005. This population is expected to reach 38,714 by 2030. A summary of historic and projected population, households, and employment within the Culver City System (based on SCAG data) is presented in Table 2-1 and illustrated in Figure 2-2**.**

In summary, from 2000 to 2005 the Culver City population increased 3 percent, which is a growth rate[1] of approximately 0.7 percent per year. By 2030, population is expected to increase by a total of 3 percent, from 37,577 in 2005 to 38,714 in 2030, which is a 0.1 percent growth rate per year. The number of households is expected to grow 11 percent during the same period, which equates to an annual household growth rate of 0.4 percent. Employment is expected to grow 31 percent during the same period, which equates to an annual employment growth rate of 1.1 percent. Areas with the highest projected growth increases are also the areas that will see the largest increase in water use. Based on Culver City's CSA map there is not much open space land area available for future growth.

[1] Growth rate: The number of persons added to (or subtracted from) a population in a year due to natural increase or net migration; expressed as percentage of population at the beginning of the time period. (Source: http://www.prb.org)

Table 2-1.
Culver City CSA Historical and Projected Population

| Year | Service Area Population | Service Area Household | Service Area Employment |
|---|---|---|---|
| 2000[2] | 36,333 | 15,715 | 45,565 |
| 2005 | 37,577 | 15,817 | 46,222 |
| 2010 | 37,888 | 16,046 | 52,920 |
| 2015 | 38,102 | 16,405 | 55,005 |
| 2020 | 38,311 | 16,773 | 57,004 |
| 2025 | 38,517 | 17,150 | 58,857 |
| 2030 | 38,714 | 17,527 | 60,585 |

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

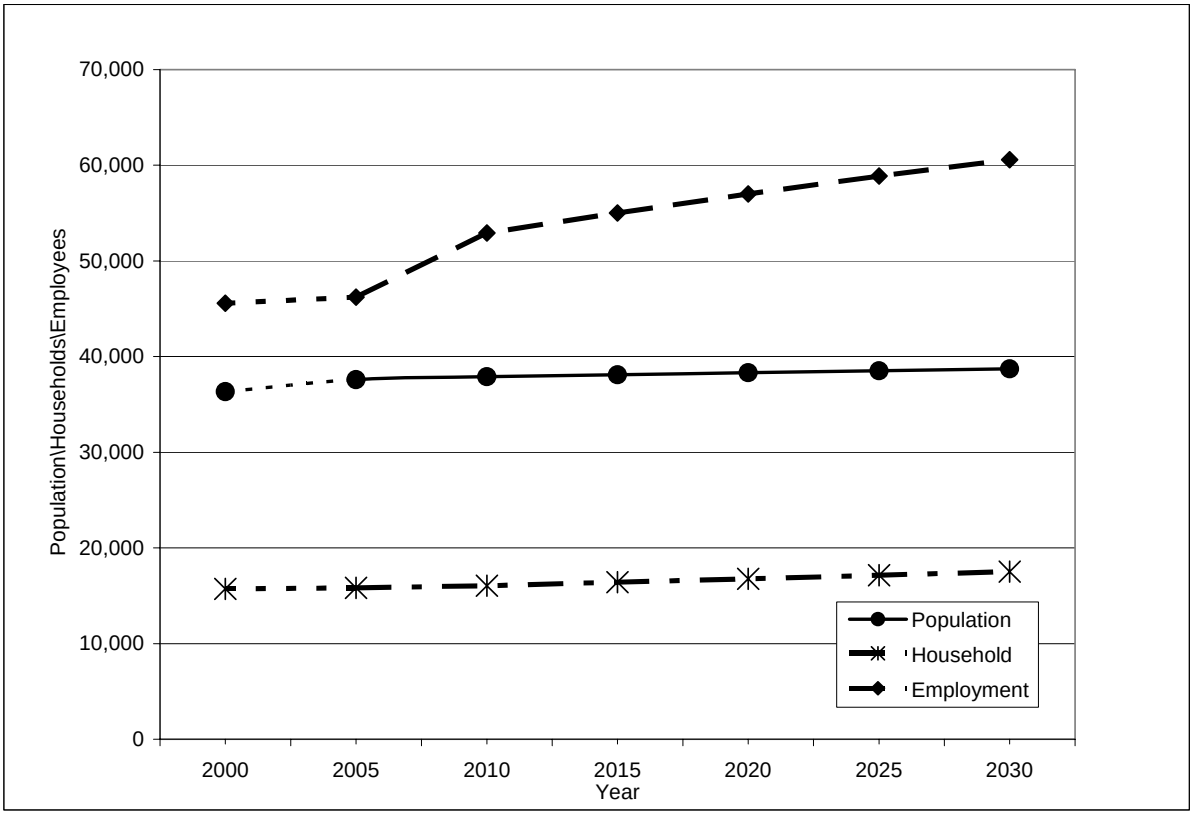



Figure 2-2. Historical and Projected Population, Household and Employment Growth within the Culver City CSA.

# Climate

The Culver City CSA has cool, humid winters and warm, dry summers. The Western Regional Climate Center web site (www.wrcc.dri.edu) has maintained 30 years of historic climate records for the Culver City. Table 2-2 presents the monthly average climate summary based on 30 year historical data for the Culver City System. In winter, the lowest average monthly temperature is approximately 45 degrees Fahrenheit while the highest average monthly temperature reaches approximately 79 degrees Fahrenheit in the summer. Figure 2-3 presents the monthly average precipitation based on 30 year historical data. The rainy season is from November to March. Monthly precipitation during the winter months ranges from 1 to 3 inches. Low humidity occurs in the summer months from May to October. The moderately hot and dry weather during the summer months typically results in moderately high water demand.

Similar to the Western Regional Climate Center in the Culver City area, the California Irrigation Management Information System (CIMIS) web site (http://www.cimis.water.ca.gov) tracks and maintains records of evapotranspiration (ETo) for few cities only. ETo statistics used for this system come from Los Angeles station, which is the closest station (10 miles) to the Culver City System. ETo is a standard measurement of environmental parameters that affect the water use of plants. ETo is given in inches per day, month, or year and is an estimate of the evapotranspiration of a large field of well-watered, cool-season grass that is four- to seven-inches tall. The average ETo is presented in inches in Table 2-2. As the table indicates, a greater quantity of water is evaporated during July and August in correlation to high temperatures and low humidity, which may result in high water demand.

Table 2-2
Monthly Climate Data Summary for Culver City CSA

| Month | Standard Monthly Average ETo[2] (inches) | Average Total Rainfall (inches) | Average Temperature (degrees Fahrenheit) Max | Min |
|---|---|---|---|---|
| January | 2.2 | 2.9 | 66.5 | 45.2 |
| February | 2.6 | 3.05 | 67.2 | 46.5 |
| March | 3.7 | 2.23 | 67.9 | 48.2 |
| April | 4.7 | 0.83 | 70.2 | 51.2 |
| May | 5.5 | 0.16 | 71.5 | 54.4 |
| June | 5.8 | 0.03 | 74.2 | 58.0 |
| July | 6.2 | 0.01 | 78.0 | 61.2 |
| August | 5.9 | 0.05 | 79.1 | 61.8 |
| September | 5.0 | 0.13 | 78.7 | 60.5 |
| October | 3.9 | 0.39 | 76.0 | 56.1 |
| November | 2.6 | 1.39 | 71.7 | 50.0 |
| December | 1.9 | 2.22 | 67.9 | 46.0 |

Notes
1. This table is based on the DWR Guidebook Table 3.
2. Evapotranspiration Overview (ETo) from http://www.cimis.water.ca.gov/cimis/welcom.jsp

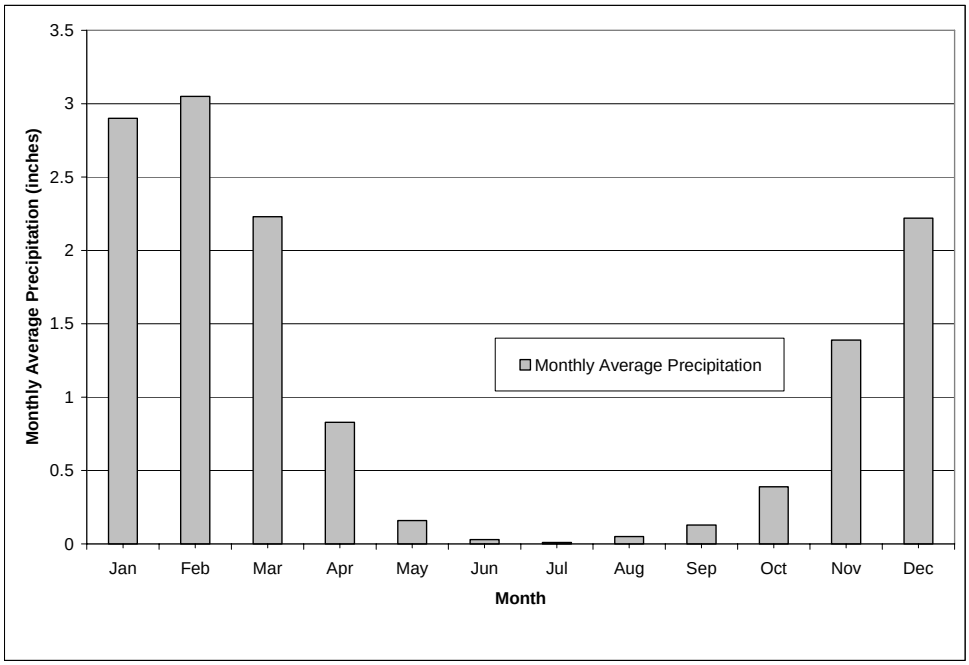



Figure 2-3. Monthly Average Precipitation in the Culver City CSA based on 30 Years Historical Data

# Chapter 3. Water Supply

A detailed evaluation of water supplies is required by the Act. Sections 10631 (a) through (d) require that:

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

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

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

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

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

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

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

*(1) An average water year.*

*(2) A single dry water year.*

*(3) Multiple dry water years.*

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

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

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

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

This chapter addresses the water supply sources of the Culver City System. The following sections provide details in response to those requirements of this portion of the Act.

# Water Sources

The Golden State Water Company (GSWC) currently obtains its water supply for the Culver City System by purchasing imported water from the West Basin Municipal Water District (WBMWD). WBMWD obtains its imported water supply from the Metropolitan Water District of Southern California (Metropolitan).

Table 3-1 summarizes the current and planned water supplies available to GSWC for the Culver City System that will meet their projected water demands, based upon GSWC's long-term water supply planning projections and those of its wholesale suppliers. GSWC's water supply is projected to increase by about 20 percent from 2005 to 2030 to meet the associated projected water demands, with all of this demand being met by imported water from WBMWD and groundwater. Water demand projections are documented in Chapter 4.

Although not included in Table 3-1, GSWC is assessing the feasibility of several potential groundwater development projects. If developed, each of these projects would provide some increment of local groundwater which would improve the reliability of or displace the use of purchased water within the Culver City System.

Table 3-1
Current and Planned Water Supplies for the Culver City System in ac-ft/yr

| | Year | | | | | |
|---|---|---|---|---|---|---|
| **Source** | **2005** | **2010** | **2015** | **2020** | **2025** | **2030** |
| Water supplies from WBMWD | 6,760 | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Groundwater | 0 | 0 | 0 | 0 | 0 | 0 |
| Recycled water | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 6,760 | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |

Notes
1. Table format based on DWR Guidance Document Table 4

## Imported Water

Water purchased from the WBMWD is delivered to the Culver City System through three connections. The design capacities of these connections are:

- Metropolitan WB-23 connection with a capacity of 9,000 gpm
- Metropolitan WB-24 connection with a capacity of 9,000 gpm
- Metropolitan WB-34 connection with a capacity of 4,500 gpm.

These connections have a combined active design capacity of 22,500 gpm (or about 50 cfs) which could supply 36,293 ac-ft/yr if used continuously at their maximum capacity. Water purchased from WBMWD for the Culver City System is treated by Metropolitan prior to delivery. Three reservoirs, with a total volume of 2.2 million gallons, are available to serve the Culver City System.

A five-year purchase agreement between WBMWD and GSWC became effective January 1, 2003. This agreement provides GSWC with a base allocation of 12,691 ac-ft/yr from WBMWD. GSWC annually may request a change in the base allocation.

Under Section 135 of the Metropolitan Act, preferential rights to imported water are determined by each agency's total historic payments to Metropolitan from property taxes, stand-by charges, readiness-to-serve charges, and other revenue. Revenue resulting from the purchase of Metropolitan water is excluded, even though a portion of such revenues is used to pay for capital projects. At any time under preferential right rules, Metropolitan may allocate water without regard to historic water use or dependence on Metropolitan.

Metropolitan's preferential rights rules were the subject of litigation seeking clarification regarding the application and legality of Section 135; in July 2004 the State Supreme Court denied an appeal of an appellate court decision that Metropolitan might continue to exclude water purchases from the preferential rights calculation. The decision makes clear how much water any Metropolitan member agency can count on should a member agency invoke its preferential right to water.

Subsequent to the court decision, Metropolitan has stated, consistent with Section 4202 of its Administrative Code, that it is prepared to provide its member agencies with adequate supplies of water to meet expanding and increasing needs in the years ahead. When and as additional water resources are required to meet increasing needs, Metropolitan stated that it will be prepared to deliver such supplies. In its draft 2005 Regional Urban Water Management Plan, Section II.4, Metropolitan also states that they have identified a resource management plan, as a result of investments made in supply and storage that should result in 100 percent reliability for non-discounted non-interruptible demands through 2025.

## Groundwater

The Culver City System is located within the Los Angeles Groundwater Basin. The Culver City System has not used groundwater as a supply source since 1998. In 2004, GSWC sold their groundwater pumping rights in the Charnock Basin to the City of Santa Monica. GSWC still owns water rights in the Santa Monica Subbasin, and is assessing the feasibility of potential groundwater development projects within several local basins. If developed,

each of these projects would provide some increment of local groundwater which would improve the reliability of or displace the use of purchased water within the Culver City System.

# Reliability of Supply

The Culver City System receives its water supply from imported water from Metropolitan via WBMWD. The conditions in local and distant areas can impact the reliability of supplies. The following discussion summarizes the reliability of GSWC's water supply sources. In general, GSWC's supply is expected to be 100 percent reliability through 2030. This reliability is a result of the projected reliability of WBMWD as a member of Metropolitan, which projects its ability to provide 100 percent reliable supplies to its wholesale member agencies such as WBMWD. Following is a summary of the basis of this reliability.

## Reliability of Imported Water

WBMWD, the local imported water wholesaler, is largely a pass through entity which obtains nearly all its imported water from Metropolitan, directly or indirectly. Metropolitan's resource management plans are intended to optimize the use of its available resources during surpluses and shortages to minimize the probability of severe shortages and eliminate the possibility of extreme shortages and shortage allocations.

With the experience of the droughts of 1977-78 and 1989-92, Metropolitan undertook a number of planning initiatives to ensure supply reliability. Those initiatives included the Integrated Resources Plan (IRP), the Water Surplus and Drought Management Plan (WSDM Plan) and local resource investments. Together, these initiatives provided the policy framework for Metropolitan and its member agencies to manage their water resources to meet the needs of a growing population even under recurrences of the worst historical hydrologic conditions, locally and in the key distant watersheds that supply southern California. Metropolitan has stated that it expects to be 100 percent reliable in meeting all non-discounted, non-interruptible demands, as summarized below (see Metropolitan's UWMP for details). WBMWD has also proposed certain water supply development projects, as discussed below.

### Metropolitan Integrated Resource Plan (IRP)

The objective of the 2003 IRP Update was to project the most likely combination of water resources to provide 100 percent reliability for full service demands over the next 20 years (from 2005 to 2025), at the lowest cost. Based upon the plans of its member agencies and the retail water suppliers, Metropolitan's preferred supply mix includes conservation, local supplies (recycled and brackish water desalination), State Water Project (SWP) supplies, Colorado Aqueduct supplies, groundwater banking, and water transfers to meet projected water demands under severe shortage conditions. Additional objectives included: (1) review of the goals and achievements of the 1996 IRP, (2) identification of changed conditions for water resource development, and (3) update of the resource targets through 2025. The 2003 IRP Update revealed a decrease in the region's reliance on imported supplies from the Colorado River and SWP compared to the 1996 IRP, while continuing to provide 100 percent reliability, through the year 2025.

To reduce the likelihood of shortfalls due to implementation risk and water quality issues, the 2003 IRP Update also includes a planning buffer of up to ten percent of regional demands. This planning buffer calls for identification of an additional 500,000 ac-ft of contingency supplies above that needed to meet demands in 2030. The buffer supplies would include an equal proportion of local and imported supplies.

### Metropolitan Water Surplus and Drought Management Plan (WSDM Plan)

In 1999 Metropolitan adopted the WSDM plan to integrate planned operational actions with respect to both surplus and shortage situations (for further details on the WSDM Plan actions, refer to MWD's 2005 UWMP). While a specific allocation plan was not developed as part of the WSDM Plan, the guiding principle of the WSDM Plan is to manage Metropolitan's water resources and management programs to maximize management of wet year supplies and minimize adverse impacts of water shortages to retail customers. The WSDM Plan states that, except in extreme shortages or emergencies, Metropolitan resource management will allow shortages to be mitigated without impacting retail municipal and industrial customers. The key guiding principles of the WSDM Plan include:

- Encouraging efficient water use and economical local resource programs
- Coordinating operations with member agencies to make as much surplus water as possible available for use in dry years
- Pursuing innovative transfer and banking programs to secure more imported water for use in dry years
- Increasing public awareness about water supply issues

The WSDM Plan contains the following considerations that would go into an equitable allocation of imported water:

- Population growth
- Changes and/or losses in local supplies
- Impact on retail consumers and regional economy
- Investments in local resources, including recycling and conservation
- Investment in Metropolitan's facilities

### Metropolitan Local Resource Investments

Metropolitan has made significant investments in local resource projects to optimize local supplies. These investments have been made in conservation, water recycling, storage, and supply. Metropolitan's objective is that its resource management plan results in 100 percent reliability for non-discounted, non-interruptible demands through 2025. Metropolitan's resource management strategy deals with several supply resources:

**Local Resource Investment.** Metropolitan has co-funded more than 74 local supply projects that provided an annual contract yield of 118,000 ac-ft in 2004. Projects developed by the member agencies without Metropolitan funding provided an additional 155,000 ac-ft. In addition, between 1990 and 2003 Metropolitan and its member agencies invested a total of $290 million in conservation programs. Metropolitan estimates that conservation reduced the region's 2003 demand by 654,000 ac-ft, compared to the 1996 IRP goal of 571,000 ac-ft. As a large purchaser of Metropolitan water, GSWC has helped fund many of these programs.

**Colorado River Region.** Under the existing agreement, over 800,000 ac-ft of water is currently available to Metropolitan's service area in dry-years from the Colorado River region. This amount includes 30,000 ac-ft of the eventual 200,000 ac-ft transfer agreement between the San Diego County Water Authority and the Imperial Irrigation District. Additional programs are currently being studied.

**State Water Project Region.** Metropolitan has continued to explore out-of-region water storage and transfer programs. Current water storage agreements provide for dry-year supplies of almost 400,000 ac-ft. Transfer programs provide additional water, but this amount varies from year-to-year. Additional programs that could supply 125,000 ac-ft are under development. In addition, Metropolitan's SWP contract allows it to store up to 220,000 ac-ft of carryover water in SWP storage reservoirs.

**Regional Storage.** Metropolitan has undertaken a number of projects to increase the level of in-region water storage to compensate for the reduced availability of its imported water supply. The key projects are summarized below:

- Diamond Valley Lake was filled for the first time by early 2002. Completion of this project added 800,000 ac-ft of storage to Metropolitan's mix of resources, of which 400,000 ac-ft are available for use as regulatory/carryover storage.
- In 1995, Metropolitan entered into an agreement with Calleguas Municipal Water District (MWD) to jointly develop the North Las Posas Conjunctive Use Program. Phases 1 and 2 of this program are expected to be operational and come on-line by 2005, with facilities to manage the full 210,000 ac-ft of storage due to be operational by 2010.
- Metropolitan has expanded groundwater storage in the region. Five contractual storage programs signed to date will provide 181,000 ac-ft of storage. Three additional contracts (City of Compton, Three Valleys Municipal Water District, and the City of Long Beach) currently being finalized may provide an additional 8,900 ac-ft for a total of` approximately 190,000 ac-ft of dry-year storage capacity. The legal standing of the Long Beach storage agreement has not yet been acknowledged by DWR as Watermaster in the Central Basin but is expected to be resolved in accordance with amendments to the court Judgments that are anticipated to be filed after agreements are reached as part of ongoing discussions with DWR. GSWC also expects to enter into agreements for contractual storage programs in the Central and West Coast Basins.
- Metropolitan is also continuing to work with its member agencies in the Pasadena area to develop an additional 66,000 ac-ft of storage in the underlying Raymond Basin.

Together these programs will provide capability to store 866,000 ac-ft of supplies for dry years.

## WBMWD's Water Supply Programs

WBMWD has proposed development of certain water supply projects to increase reliability within its service area (see WBMWD's 2005 UWMPs for details). Details on proposed recycled water and desalination projects are documented in Chapters 8 and 6, respectively.

## Culver City System's Water Supply Reliability

Supply reliability for the Culver City System depends upon the reliability of imported water from WBMWD, as discussed above.

Table 3-2 presents water supply projections for imported water sources during a normal year, single-dry year, and multiple-dry years for the Culver City System. The normal-year supply represents the expected supply under average hydrologic conditions, the dry-year supply represents the expected supply under the single driest hydrologic year, and the multiple-dry year supply represents the expected supply during a period of three consecutive dry years.

As described above, imported water supplies from WBMWD are expected to be 100 percent reliable to meet demands through 2030. Therefore, the imported water supply projections for a normal water year, single-dry year, and multiple-dry years are taken as the 2030 projection, which is equivalent to the imported water demand projected for 2030. It is assumed that the single-dry year and multiple-dry year supplies are the same as those for the normal years because Metropolitan, through the WBMWD, intends to meet projected demands under all anticipated hydrologic conditions.

Table 3-2
Supply Reliability for the Culver City System for year 2030

| Source | Normal Water Year | Single-Dry Water Year | Multiple-Dry Water Years | | |
|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 |
| Purchased water from WBMWD | 8,082 | 8,082 | 8,082 | 8,082 | 8,082 |
| Groundwater and Recycled water | 0 | 0 | 0 | 0 | 0 |
| Total | 8,082 | 8,082 | 8,082 | 8,082 | 8,082 |
| Percent of Normal | | 100 | 100 | 100 | 100 |

Notes
1. Unit of measure: ac-ft/yr
2. Table format based on DWR Guidance Document Table 8

Table 3-3 lists single-dry year and multiple-dry year periods for imported water supplies. The single-dry year and multiple-dry year periods are based on WBMWD's analysis on the lowest average precipitation for a single year and the lowest average precipitation for a consecutive multiple-year period, respectively. WBMWD's estimates suggest that FY 2000-01 represents a normal water year based on average rainfall over the last 100 years, FY 2001-02 represents the single-dry year, and the years of FY 2001-02, 2002-03, and 2003-04 represent the driest three consecutive years. WBMWD has determined that they can meet their projected water demands for these years, so the supply is equal to the projected demands.

Table 3-3
Basis of Water Year Data for Imported Water

| Water Year Type | Base Year(s) | Historical Sequence |
|---|---|---|
| Normal Water Year | 2000-01 | 100 years |
| Single-Dry Water Year | 2001-02 | |
| Multiple-Dry Water Years | 2001-02, 2002-03 and 2003-04 | |

Notes
1. Table format based on DWR Guidance Document Table 9

## Factors Resulting in Inconsistency of Supply

Table 3-4 presents factors that could potentially result in inconsistency of supply for the Culver City System.

Table 3-4
Factors Resulting in Inconsistency of Supply

| Name of Supply | Legal | Environmental | Water Quality | Climatic |
|---|---|---|---|---|
| WBMWD | N/A | N/A | N/A | N/A |

Notes
1. No further constraints affecting the Culver City System supply. Metropolitan's and WBMWD's supplies already accounted for these factors (see WBMWD's UWMP and Metropolitan's UWMP)
2. N/A – Not applicable
3. Table format based on DWR Guidance Document Table 10

# Transfers and Exchanges

There are no planned transfer and/or exchange opportunities in the Culver City System at this time; therefore, Table 3-5 has been left blank.

Table 3-5
Transfer and Exchange Opportunities

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

Notes
1. N/A – Not applicable
2. Table format based on DWR Guidance Document Table 11

# Planned Water Supply Projects and Programs

There are no planned water supply projects and programs in the Culver City System at this time; therefore, Table 3-6 has been left blank. WBMWD has various projects planned, the

details of which can be found in WBMWD's 2005 Urban Water Management Plan. WBMWD's dependence on traditional sources of water (imported) will continue to decrease with the expansion of these alternative resources. As noted above, GSWC still owns water rights in the Santa Monica Subbasin of the Los Angeles Groundwater Basin and is assessing the feasibility of potential groundwater development projects within several local basins. If developed, each of these projects would provide some increment of local groundwater which would improve the reliability of or displace the use of purchased water within the Culver City System.

Table 3-6
Future Water Supply Projects in ac-ft

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

Notes
1. N/A – Not applicable
2. This table is based on the DWR Guidebook Table 17.

# Wholesale Agency Supply Data

Table 3-7 provides existing and planned water sources available to the Culver City System.

Table 3-7
Existing and Planned Water Sources Available to the Culver City System as Identified by WBMWD

| Wholesaler Sources | 2010 | | 2015 | | 2020 | | 2025 | | 2030 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Existing | Planned | Existing | Planned | Existing | Planned | Existing | Planned | Existing | Planned |
| WBMWD (Imported Water) | 7,238 | N/A | 7,457 | N/A | 7,673 | N/A | 7,881 | N/A | 8,082 | N/A |

Notes
1. N/A – Not applicable
2. Unit of measure: ac-ft/yr
3. Table format based on DWR Guidance Document Table 20

Table 3-8 demonstrates the reliability of wholesale water supply to meet annual water demand of the Culver City System. The table includes a single-dry year and multiple-dry year supplies for 2030. It should also be noted that the available active connection capacity for imported water is much more than the supply quantities required to meet the projected water demands during various hydrologic conditions.

Table 3-8
Reliability of Wholesale Supply for Year 2030

| | | Multiple-Dry Water Years | | |
|---|---|---|---|---|
| **Wholesaler** | **Single Dry** | **Year 1** | **Year 2** | **Year 3** |
| WBMWD | 8,082 | 8,082 | 8,082 | 8,082 |
| Percent Normal | 100 | 100 | 100 | 100 |

Notes
1. Unit of measure: ac-ft/yr
2. Table format based on DWR Guidance Document Table 21

Table 3-9 lists factors affecting wholesale supply for the Culver City System. Metropolitan intends to provide 100 percent supply reliability to WBMWD, which in turn provides 100 percent reliability of supply to the Culver City System.

Table 3-9
Factors Affecting Wholesale Supply

| Name of Supply | Legal | Environmental | Water Quality | Climatic |
|---|---|---|---|---|
| WBMWD (1) | N/A | N/A | N/A | N/A |

Notes
1. No further constraints affecting wholesale supply. Metropolitan's supplies already accounted for these factors (see Metropolitan's UWMP)
2. Table format based on DWR Guidance Document Table 22

# Chapter 4. Water Use

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

*Section 10631*

*(e)*

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

*(A) Single-family residential*

*(B) Multifamily*

*(C) Commercial*

*(D) Industrial*

*(E) Institutional and governmental*

*(F) Landscape*

*(G) Sales to other agencies*

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

*(I) Agricultural.*

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

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

*Section 10631*

*(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), including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.*

As part of the Urban Water Management Plans, California regulation requires water suppliers to quantify past and current water use and to project the total water demand for the water system. Projections of future water demand allow a water supplier to analyze if future water supplies are adequate, as well as help the agency when sizing and staging future water facilities. Water use and production records, combined with population and employment projections, provide the basis for estimating future water requirements. This chapter presents an analysis of water use data and the resulting projections for future water needs in the Culver City System.

## Historical and Projected Water Use

Historical water use data from 1980 to 2004 was analyzed in order to estimate the future water demands for the Culver City System. Projections for the number of service connections and future water use were calculated for the year 2005 through 2030 in five-year increments. Future water demands were estimated using two different methods, a population-based approach and a historical-trend approach, in order to present a projection range. Detailed descriptions of how the population-based and historical-trend projections were calculated are provided below.

The population-based projections resulted in estimated future water demands in excess of those calculated using historical-trend projections. This is due to the fact that SCAG's projected growth rates exceed the actual growth rates experienced within the Culver City System's service area over the past twenty years. GSWC has opted to use the population-based projections for future water demand estimates even though it is considered unlikely that actual demand increases will reach the levels predicted. Using these more conservative numbers will ensure that a reliable water supply is available should future water demands within the Culver City System exceed the levels anticipated based on historic water use.

The range established between these two approaches is intended as supplemental information; all recommendations are based on the population-based projections. The historical-trend projections are provided as ancillary information only.

Figure 4-1 shows the historical and projected number of metered service connections for the Culver City System from 1980 through 2030. Figure 4-2 shows the historical and projected water use for the Culver City System from 1980 until 2030.

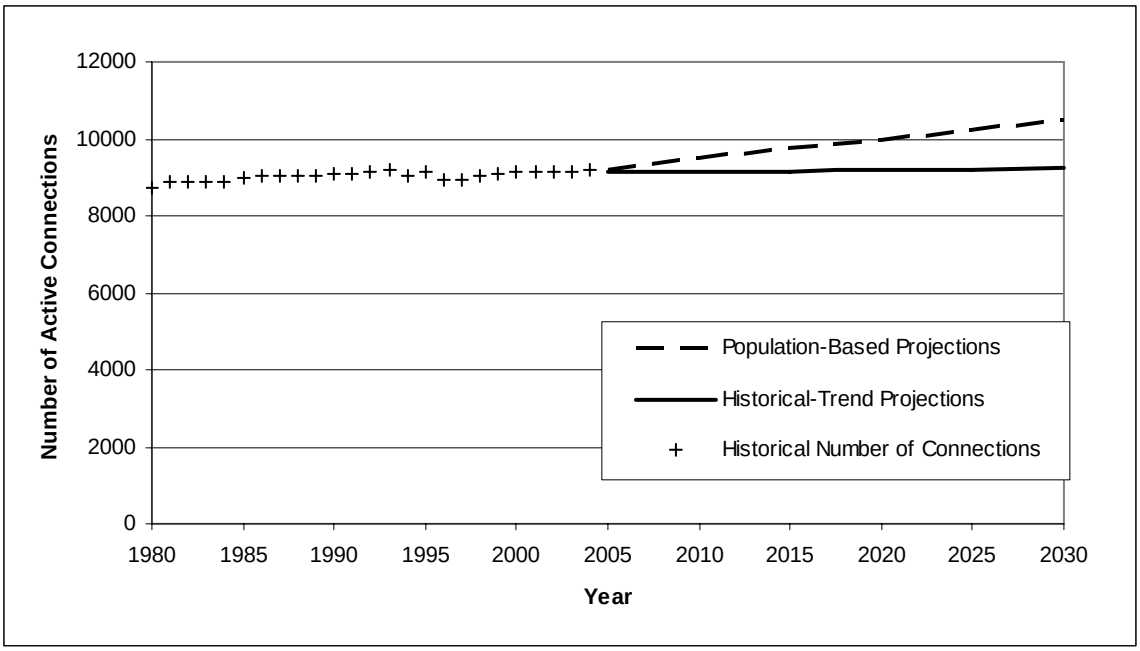



Figure 4-1. Historical and Projected Number of Metered Service Connections

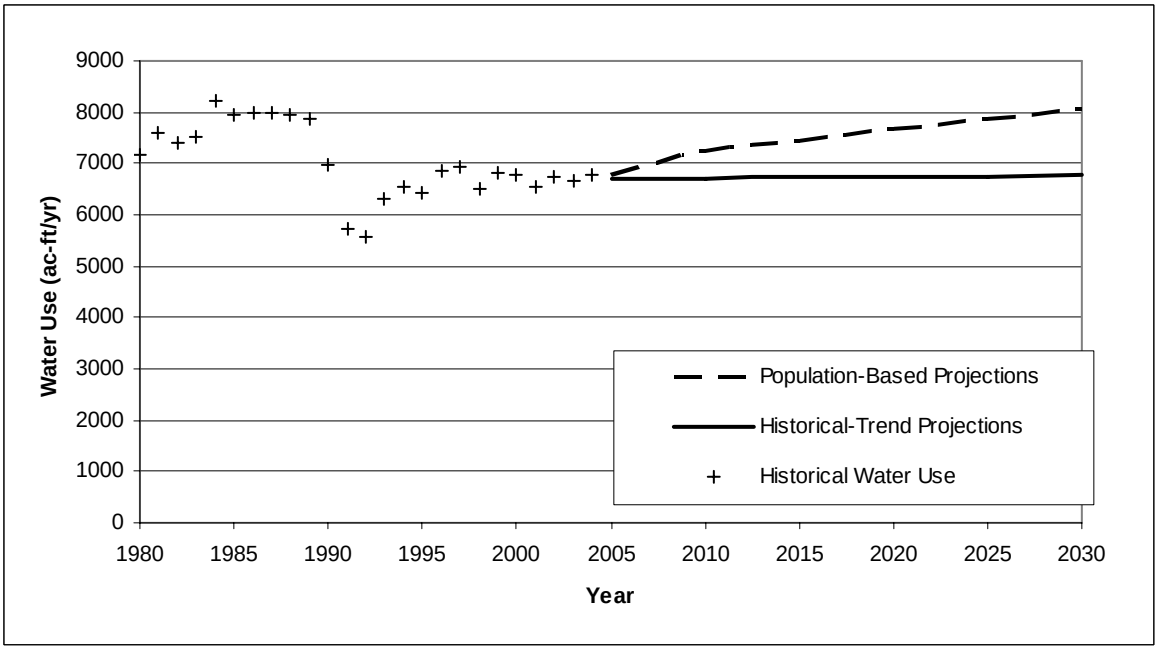



Figure 4-2. Historical Water Use and Future Water Use Projections

In order to generate estimates of future water demands, historical water use records from 1980 through 2004 were analyzed. The customer billing data for the system consists of annual water sales data. The water sales data was sorted by customer type using the assigned North American Industry Classification System (NAICS) codes. Then the sorted water sales data was further grouped into the following 8 categories: single family, multi-

family, industrial, commercial, institutional/government, landscape, agriculture, and others.

For each category, a water use factor was calculated in order to quantify the average water used per metered connection. For a given customer type, the unit water use factor is calculated as the total water sales for the category divided by the number of active service connections for that category. The unit water use factors for each customer type were averaged over the data range from 1999 through 2004 in order to obtain a representative water use factor that can be used for water demand projections by customer type.

The population-based water use projections are based on the population, housing, and employment projections developed for the Culver City System using the Southern California Association of Governments (SCAG) data. SCAG recently updated its projections for population, household, and employment growth through the year 2030 using 2000 U.S. Census data. SCAG's methodology and the derivation of population projections for the Culver City System are discussed in more detail in Chapter 2.

SCAG household projections were used to determine the growth in single-family and multi-family service connections for the years 2005, 2010, 2015, 2020, 2025, and 2030. For example, the ratio between the household projections for the year 2015 and the year 2000 was multiplied by the number of service connections in 2000 to obtain a projection of the number of connections in the year 2015. Similarly, employment growth projections were used to determine the growth for commercial, industrial, institutional/government, landscape, and agriculture service connections. The population-based projected water use was then calculated by multiplying the number of projected active service connections for each customer category with the corresponding customer average water use factor calculated above.

The historical-trend water use projections are not based on SCAG projections but are instead based on a linear projection of the historical number of metered service connections. To establish the historical trend, the data from 1989 through 2004 was used because these years represent the more recent growth rates in the system (refer to Figure 4-1). The average growth rate established by this historical trend was applied to the number of connections in each customer category to project the future number of service connections. The historical-trend projected water use was then calculated by multiplying the number of projected active service connections for each customer category with the corresponding customer average water use factor calculated above.

Figure 4-3 shows the average of the population-based and historical-trend water use projections by customer type, as well as the total water demand. The f bars provide the range of the total water demand projections for that year. The population-based and historical-trend projections of the number of service connections, and the resulting water demand, are provided in Table 4-1 and Table 4-2, respectively.

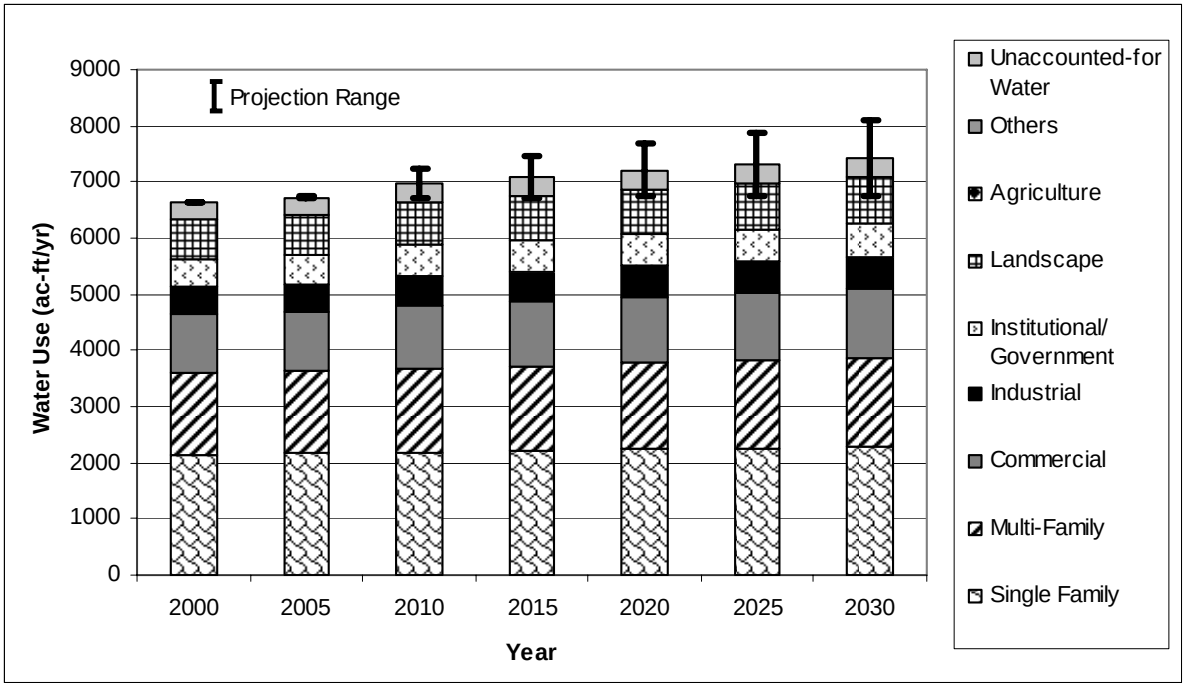



Figure 4-3. Water Use by Customer Type

Table 4-1
Population-Based and Historical-Trend Projections of the Number of Metered Service Connections for the Culver City System

| | | Accounts by Type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **Projection Type** | **Single Family** | **Multifamily** | **Commercial** | **Industrial** | **Institutional/ Government** | **Landscape** | **Agriculture** | **Other[3]** | **Total** |
| 2000[2] | *N/A* | 6,450 | 1,255 | 772 | 320 | 197 | 120 | 1 | 4 | 9,119 |
| 2005 | *Population-Based* | 6,492 | 1,263 | 783 | 325 | 200 | 122 | 1 | 4 | 9,189 |
| | *Historical-Trend* | 6,452 | 1,255 | 772 | 320 | 197 | 120 | 1 | 4 | 9,122 |
| 2010 | *Population-Based* | 6,586 | 1,281 | 897 | 372 | 229 | 139 | 1 | 5 | 9,510 |
| | *Historical-Trend* | 6,466 | 1,258 | 774 | 321 | 197 | 120 | 1 | 4 | 9,142 |
| 2015 | *Population-Based* | 6,733 | 1,310 | 932 | 386 | 238 | 145 | 1 | 5 | 9,750 |
| | *Historical-Trend* | 6,480 | 1,261 | 776 | 321 | 198 | 121 | 1 | 4 | 9,162 |
| 2020 | *Population-Based* | 6,884 | 1,339 | 966 | 400 | 246 | 150 | 1 | 5 | 9,993 |
| | *Historical-Trend* | 6,494 | 1,264 | 777 | 322 | 198 | 121 | 1 | 4 | 9,181 |
| 2025 | *Population-Based* | 7,039 | 1,370 | 997 | 413 | 254 | 155 | 1 | 5 | 10,235 |
| | *Historical-Trend* | 6,508 | 1,266 | 779 | 323 | 199 | 121 | 1 | 4 | 9,201 |
| 2030 | *Population-Based* | 7,194 | 1,400 | 1,026 | 425 | 262 | 160 | 1 | 5 | 10,473 |
| | *Historical-Trend* | 6,522 | 1,269 | 781 | 324 | 199 | 121 | 1 | 4 | 9,221 |

Notes
1. This table is based on the DWR Guidebook Table 12.
2. Based on calendar year.
3. Other accounts for any service connections not included in any other category, including idle or inactive connections.

Table 4-2
Population-Based and Historical-Trend Projections of Water Deliveries for Service Connections for the Culver City System in ac-ft/yr

| | | Accounts by Type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **Projection Type** | **Single Family** | **Multifamily** | **Commercial** | **Industrial** | **Institutional/ Government** | **Landscape** | **Agriculture** | **Other[3]** | **Total** |
| 2000[2] | *N/A* | 2,134 | 1,457 | 1,040 | 490 | 521 | 688 | 0 | 0 | 6,332 |
| 2005 | *Population-Based* | 2,167 | 1,495 | 1,060 | 488 | 520 | 714 | 0 | 1 | 6,446 |
| | *Historical-Trend* | 2,154 | 1,486 | 1,046 | 481 | 513 | 704 | 0 | 1 | 6,385 |
| 2010 | *Population-Based* | 2,198 | 1,516 | 1,214 | 559 | 595 | 818 | 0 | 1 | 6,902 |
| | *Historical-Trend* | 2,158 | 1,489 | 1,048 | 482 | 514 | 706 | 0 | 1 | 6,398 |
| 2015 | *Population-Based* | 2,247 | 1,550 | 1,262 | 581 | 619 | 850 | 0 | 1 | 7,111 |
| | *Historical-Trend* | 2,163 | 1,492 | 1,050 | 484 | 515 | 707 | 0 | 1 | 6,412 |
| 2020 | *Population-Based* | 2,298 | 1,585 | 1,308 | 602 | 641 | 881 | 0 | 2 | 7,316 |
| | *Historical-Trend* | 2,168 | 1,495 | 1,052 | 485 | 516 | 709 | 0 | 1 | 6,426 |
| 2025 | *Population-Based* | 2,349 | 1,621 | 1,350 | 622 | 662 | 909 | 0 | 2 | 7,515 |
| | *Historical-Trend* | 2,172 | 1,499 | 1,055 | 486 | 517 | 710 | 0 | 1 | 6,440 |
| 2030 | *Population-Based* | 2,401 | 1,656 | 1,390 | 640 | 681 | 936 | 0 | 2 | 7,706 |
| | *Historical-Trend* | 2,177 | 1,502 | 1,057 | 487 | 518 | 712 | 0 | 1 | 6,454 |

Notes
1. This table is based on the DWR Guidebook Table 12.
2. Based on calendar year.
3. Other accounts for any service connections not included in any other category, including idle or inactive connections.

# Sales to Other Agencies

There are no sales to other agencies for the Culver City System; therefore, Table 4-3 has intentionally been left blank.

Table 4-3
Sales to Other Agencies in ac-ft/yr

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

Notes
1. This table is based on the DWR Guidebook Table 13.
2. Based on calendar year.

# Other Water Uses and Unaccounted-for Water

In order to accurately predict total water demand, other water uses, as well as any water lost during conveyance, must be added to the customer demand. California regulation requires water suppliers to quantify any additional water uses not included as a part of water use by customer type (Table 4-4). There are no other water uses in addition to those already reported in the Culver City System.

Unaccounted-for water must be incorporated when projecting total water demand. Unaccounted-for water is defined as the difference between annual production and supply and annual sales. Included in the unaccounted-for water are system losses (due to leaks, reservoir overflows, or inaccurate meters), and water used in operations. In the Culver City System, from 1999 through 2004, unaccounted-for water has averaged 4.65% of the total production. Table 4-4 provides a summary of unaccounted-for water in the Culver City System.

Table 4-4
Additional Water Uses and Losses in ac-ft/yr

| Water-Use Type | 2000 (2) | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|---|---|
| Other Water Uses | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Unaccounted-for System Losses(3) | 309 | 314 | 336 | 347 | 357 | 366 | 376 |
| **Total** | 309 | 314 | 336 | 347 | 357 | 366 | 376 |

Notes
1. This table is based on the DWR Guidebook Table 14.
2. Based on calendar year.
3. Unaccounted-for water includes system losses due to leaks, reservoir overflows, and inaccurate meters, as well as water used in operations.

# Total Water Demand

As mentioned above, other water uses, as well as any water lost during conveyance, must be added to the customer demand in order to project water demand for the Culver City System. Although there are no other water uses contributing to the total water demand in the Culver City System, unaccounted-for water must be incorporated into the total water demand (refer to the previous section for a definition of unaccounted-for water). Table 4-5 summarizes the projections of water sales, unaccounted-for water, and total water demand through the year 2030. The projected water sales in the remainder of the analysis, including Table 4-5, are calculated using the population-based projections for water use.

The water demand projections below do not include any reduction due to future implementation of Demand Management Measures (DMM). More information regarding the status of demand reduction measures is available in Chapter 5.

Table 4-5
Projected Water Sales, Unaccounted-for System Losses, and Total Water Demand (ac-ft/yr)

| Year | Projected Water Sales | Unaccounted-for System Losses | Total Water Demand |
|---|---|---|---|
| 2000[(2)] | 6,332 | 309 | 6,640 |
| 2005 | 6,446 | 314 | 6,760 |
| 2010 | 6,902 | 336 | 7,238 |
| 2015 | 7,111 | 347 | 7,457 |
| 2020 | 7,316 | 357 | 7,673 |
| 2025 | 7,515 | 366 | 7,881 |
| 2030 | 7,706 | 376 | 8,082 |

Notes
1. This table is based on the DWR Guidebook Table 15.
2. Based on calendar year.

# Data Provided to Wholesale Agency

GSWC provided the following projected water use data to West Basin Municipal Water District (WBMWD), its wholesale water supplier for the Culver City System, as summarized in Table 4-6.

Table 4-6
Summary of Culver City System Data Provided to WBMWD in ac-ft/yr

| Wholesaler | 2010 | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|
| WBMWD | 7,038 | 7,157 | 7,373 | 7,581 | 7,782 |

Notes
1. This table is based on the DWR Guidebook Table 19.

# Chapter 5. Demand Management Measures

The evaluation of Demand Management Measures (DMMs) occupies a significant portion of the Act. The Act states:

*Section 10631*

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

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

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

*(B) Residential plumbing retrofit.*

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

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

*(E) Large landscape conservation programs and incentives.*

*(F) High-efficiency washing machine rebate programs.*

*(G) Public information programs.*

*(H) School education programs.*

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

*(J) Wholesale agency programs.*

*(K) Conservation pricing.*

*(L) Water conservation coordinator.*

*(M) Water waste prohibition.*

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

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

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

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

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

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

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

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

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

*(j) 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).*

*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.*

This chapter presents a summary of GSWC past, current and future water conservation activities for the Culver City System in compliance with the above listed sections of the Act.

The water conservation practices, as defined by the Act, are comprised of 14 DMMs. The DMMs are functionally equivalent to urban water conservation best management practices (BMPs) administered by the California Urban Water Conservation Council (Council). Table 5-1 lists the BMPs.

The Council was formed as part of an effort by the Department of Water Resources (DWR) working jointly with water utilities, environmental organizations, and other interested groups to develop and administer urban best management practices (BMPs) for conserving water. In 1991 the Council issued a Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) which formalized the agreement to implement BMPs to reduce the consumption of California's water resources. As a signatory of the MOU, GSWC has agreed to implement the BMPs that are determined to be cost beneficial to its ratepayers and to complete such implementation in accordance with the schedule assigned to each BMP. GSWC files bi-annual reports with the Council on BMPs implementation progress.

Table 5-1
Water Conservation Best Management Practices

| | |
|---|---|
| 1 | Water Survey Programs for Single-Family Residential and Multifamily Residential Customers |
| 2 | Residential Plumbing Retrofits |
| 3 | System Water Audits, Leak Detection, and Repair |
| 4 | Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections |
| 5 | Large-Landscape-Conservation Programs and Incentives |
| 6 | High-Efficiency-Washing-Machine Rebate Programs |
| 7 | Public Information Programs (1) |
| 8 | School Education Programs (1) |
| 9 | Conservation Program for Commercial, Industrial, Institutional (CII) Accounts |
| 10 | Wholesale-Agency Assistance Programs (1) |
| 11 | Conservation Pricing (1) |
| 12 | Water Conservation Coordinator (1) |
| 13 | Water Waste Prohibition (1) |
| 14 | Residential Ultra-Low-Flush-Toilet (ULFT) Replacement Programs |

Notes
1. Economic benefits of these BMPs are considered nonquantifiable.

# BMP Implementation Status

GSWC implements water conservation programs for all systems in Region II together rather than for each individual system. Because of this, water conservation was evaluated for the Region II CSAs, which consist of the Artesia, Bell-Bell Gardens, Culver City, Florence Graham, Hollydale, Norwalk, Southwest, and Willowbrook systems.

The BMPs implementation status was assessed based on information provided in BMP activity reports for the years 2001 to 2004 that were filed with the Council. Historically, the BMP forms for the Region II CSAs have been 100 complete, including the reports filed for 2001 to 2004. In addition, the BMP coverage reports were used to assess whether the target implementation schedule, as defined by the Council, for each BMP is met. The 2004 Activity Report and Coverage Report are included in Appendix E. Based on Section 10631 (j) the Council reports meet the requirements of Water Code Section 10631 (f) and (g). A summary of these reports is presented in Table 5-2 and Table 5-3.

Table 5-2 presents a summary of the past water conservation activities in the Region II CSAs. It should be noted GSWC takes credit for water conservation activities completed under programs jointly offered by GSWC and other agencies in its service area.

Table 5-3 presents a description of the offered programs and implementation status in the Region II CSAs for all BMPs. GSWC is currently not meeting coverage requirements as defined by the Council for BMPs 1, 2, 5, 6, and 9. In order to determine if implementation of these BMPs for the Region II CSAs should continue, a benefit-cost analysis was performed on these BMPs.

Table 5-2
Summary of Water Conservation Activities [1]

| Year | BMP 1: Residential Surveys | BMP 2: Residential Retrofits | BMP 3: Pre-Screening System Water Audit | BMP 5: Large Landscape Surveys | BMP 7: Public Information Programs | BMP 8: School Programs Students Reached | BMP 9: CII Surveys | BMP 14: Residential ULFT |
|---|---|---|---|---|---|---|---|---|
| Pre 2000 | 2090 | 6272 | Yes | 6 | Yes | 891 | 11 | 18221 |
| 2000 | 5833 | 10498 | Yes | 49 | Yes | 3320 | | 7849 |
| 2001 | 3037 | 8998 | Yes | 49 | Yes | 2160 | | 2566 |
| 2002 | | 800 | Yes | 49 | Yes | 160 | | |
| 2003 | | 5000 | Yes | | Yes | 4144 | | |
| 2004 | | 7500 | Yes | | Yes | 7000 | | |
| Meeting Coverage Requirements | No | No | Yes | No | Yes | Yes | No | No |

Notes
1. BMPs 4, 6, 11, 12, and 13 are fully implemented. BMP 10 is not applicable as this system does not provide wholesale water to other agencies.

Table 5-3
Summary of Best Management Practice Implementation

| | BMP | Summary of Activities | Coverage Implementation Status[2] |
|---|---|---|---|
| 1 | Residential Water Surveys | GSWC secures Metropolitan funding and then bids and hires a contractor to implement the survey program. The contractor is responsible for tracking the survey results for each customer and entering the information into a database. | Coverage requirements are not met. |
| 2 | Residential Plumbing Retrofits | Since 1996, GSWC has developed direct mail flyers to residents in the Metro District service area advertising low-flow fixture programs. | Coverage requirements are not met. |
| 3 | System Water Audits, Leak Detection, and Repair | GSWC will conduct a water audit on affected systems in the event unaccounted for water exceeds 7%. All hydrants, valves and service connections are serviced on a regular basis. All large production meters are tested for accuracy. | Coverage requirements are being met. |
| 4 | Metering | All accounts in the Region II CSAs are metered and are billed by volume. | Fully implemented. |
| 5 | Large-Landscape-Conservation Program | GSWC\partners with Metropolitan's member agencies to identify and retrofit GSWC's customers for recycle water use. Information regarding the efficient use of landscape water is provided to new customers via a customer guide that is available in all customer service offices. | Coverage requirements are not met. |
| 6 | High-Efficiency-Washing-Machine Rebate Program | Rebates for high-efficiency washers are not offered by energy utility providers. GSWC partners with Metropolitan's member agencies, to offer rebate programs to GSWC customers. | Coverage requirements are being met. |
| 7 | Public Information Program[1] | Region II CSAs has a public information program. GSWC issues press releases, publishes quarterly newsletters and uses door tags and bill inserts to notify the public of various conservation programs. | Coverage requirements are being met. |
| 8 | School Education Program [1] | GSWC participates in Water Wise School Education that is accepted by CUWCC as “at least as effective” measure for this BMP. | Coverage requirements are being met. |
| 9 | Conservation Program CII Accounts | GSWC participates in Metropolitan “Save-a-Buck” rebate program tailored for commercial sector. | Coverage requirements are not met. |
| 10 | Wholesale-Agency Program[1] | Not applicable. | Not applicable |
| 11 | Conservation Pricing[1] | GSWC has adopted conservation pricing, including using water rates that are developed to recover the cost of providing service and billing customers for metered water use. GSWC has uniform water rate structure (i.e. no rate increase/decrease based on the quantity of water used). | Fully implemented. |
| 12 | Water Conservation Coordinator[1] | GSWC has a water conservation coordinator on staff to work with member agencies and contractors to develop and implement conservation programs. | Coverage requirements are being met. |
| 13 | Water Waste Prohibition[1] | There is a water waste prohibition ordinance in effect in the Region II CSAs (CPUC Tariff Rule No. 14.1). | Fully implemented. |
| 14 | Residential-Ultra-Low-Flush-Toilet-Replacement Program | GSWC partners with Metropolitan member agencies to secure funding for programs. GSWC has a ULFT replacement program that includes marketing, cooperation with local high schools and contractors. | Coverage requirements are not met. |

Notes
1. Benefits of these DMMs are considered non-quantifiable.
2. Implementation” means achieving and maintaining the staffing, funding, and priority levels necessary to achieve the level of activity required to satisfy the target commitment as described in the MOU.

# Cost Benefit Analysis

A benefit-cost economic analysis was completed for the quantifiable BMPs that are not meeting coverage requirements (BMP 1, 2, 3, 5, 9 and 14). The benefit-cost analysis was completed with the consideration of economic factors. Noneconomic factors, including environmental, social, health, customer impacts, and new technology, are not believed to be significant and were not considered in the analysis.

The basis and assumptions used in the economic analysis of each BMP, as well as detailed calculations are included in Appendix D. Common assumption for all BMPs is the real discount rate of 6.71% and $546 per ac-ft for the value of conserved water. The value of conserved water provided by GSWC for the Region II CSAs is estimated based on the cost incurred for the next increment of purchased water from MWD. The real discount rate is based on GSWC's calculated nominal interest rate of 8.79% less the assumed inflation rate of 2.06%. The analysis assumes that BMPs 1 and 2 (Residential Water Surveys and Plumbing Retrofits) would be done concurrently. Other assumptions with supporting references are described in Table D-1 (Appendix D).

The economic analysis was performed using a spreadsheet program developed by the Council. A separate, customized worksheet for each BMP is presented in Table D-2 (Appendix D). Each BMP economic analysis spreadsheet projects on an annual basis the number of interventions and the dollar values of the benefits and costs that would result from fully implementing a particular BMP. The definition of terms and formulas that are common to all worksheets are presented in Table D-3 (Appendix D).

Table 5-4 summarizes the results of the economic analysis. The table presents the total discounted costs and benefits, the benefit-cost ratio, the simple pay-back period, the discounted cost per ac-ft of water saved, and the net present value (NPV) per ac-ft of water saved for each BMP.

The economic analysis shows that all BMPs with the exception of BMP 2 yield benefit-cost ratios greater than one, which indicates that the conservation measures are cost effective. Based on this, GSWC should continue efforts to implement BMPs 1, 3 5, 9, and 14 that appear to be cost effective.

BMP 2 Residential Plumbing Retrofits results in slightly higher costs when compared to the value of water that is saved, and a benefit cost ratio of less than one. Signatories of the MOU are not required to implement BMPs that are not cost beneficial. Therefore, GSWC is not required to continue implementation of BMP 2, and should pursue an exemption from implementing this measure with the Council.

Based on the results of the benefit-cost analysis an implementation program was developed for the cost effective BMPs.

Table 5-4
Results of Economic Analysis for BMPs Currently Not Meeting Coverage Requirements

| | BMP Description | Total Discounted Cost (1) | Total Discounted Benefits (2) | Total Water Saved (ac-ft) (3) | Benefit / Cost Ratio (4) | Simple Payback Analysis (years) (5) | Discounted Cost / Water Saved ($/ac-ft) (6) | Net Present Value / Water Saved ($/ac-ft) (7) |
|---|---|---|---|---|---|---|---|---|
| 1 | Water Survey Programs for Residential Customers | $318,540 | $432,862 | 865 | 1.4 | 4 | $368 | $132 |
| 2 | Residential Plumbing Retrofits | $2,297,694 | $1,972,079 | 4,970 | 0.9 | 15 | $462 | -$66 |
| 3 | System Water Audits, Leak Repair | $373,524 | $591,306 | 1,744 | 1.6 | 7 | $214 | $125 |
| 5 | Large Landscape Conservation Programs and Incentives | $404,472 | $1,171,462 | 2,514 | 2.9 | 2 | $174 | $327 |
| 9 | Conservation Program for CII Accounts | $573,203 | $1,649,812 | 3,297 | 2.9 | 2 | $174 | $327 |
| 14 | Residential ULFT Replacement Program | $5,013,776 | $16,112,003 | 40,667 | 3.2 | 9 | $123 | $273 |

Notes
1. Present value of the sum of financial incentives and operating expenses - using discount rate of 6.71%.
2. Present value of the sum of avoided energy and purchased water costs - using discount rate of 6.71%.
3. Achieved water savings for the implemented BMP.
4. Total discounted benefits divided by total discounted costs.
5. Time horizon in years required for benefits to pay back costs of the BMP.
6. Total discounted costs divided by total water saved.
7. Total of discounted benefits less discounted costs divided by total water saved.

# Recommended Conservation Program

GSWC should continue efforts to implement BMPs that are assessed to be cost beneficial (benefit-cost ratio equal or greater than one), and to achieve the target implementation coverage by the end of the implementation period assigned to each BMP.

BMPs 1, 3, 5, 9, and 14 were identified as cost beneficial in the Region II CSAs; therefore, an implementation program was developed for these BMPs. The program is based on achieving the target coverage requirements, as per the MOU.

Table 5-5 presents the proposed implementation program, including the number of annual interventions required for each BMP to comply with defined coverage requirements; the total annual expenditures necessary to support the interventions; and the estimated annual water savings. The expenditures for BMPs take into consideration the existing programs offered by other agencies in the service area, and reflect only the incremental cost to GSWC to implement BMPs to meet the coverage requirements.

BMPs 7, 8, 10, 11, 12, and 13 were not included in the proposed implementation program because they are considered non-quantifiable. These BMPs have no specific level of effort defined in the MOU, therefore water savings and costs associated with these BMPs were not included in the analysis. The cost for BMP 12 is contained in GSWC overhead. BMPs 4 and 6 are already implemented, and, therefore, have no additional cost associated with them. BMP 13 has no associated cost unless initiated by a water shortage condition.

When implementing water conservation programs, GSWC is subject to economic and legal constraints that need to be considered as they may affect the proposed BMPs implementation schedule.

### Economic Considerations

As a private utility, GSWC is subject to the rules and regulations of the California Public Utilities Commission (CPUC). The CPUC approves GSWC's water rate structure and the capital and operating budget, including the budget for implementation of water conservation measures. GSWC is often constrained in the funding available to implement programs. GSWC implements cost effective water conservation programs that have been approved by the CPUC.

While GSWC is fully committed to optimizing its available water resources and implementation of BMPs and DMMs, the Company is currently limited in its ability to do so by certain ratesetting practices of the CPUC. As noted above, the CPUC's draft "Water Action Plan" has as one of its major objectives strengthening water conservation programs to a level comparable to those of energy utilities. While implementation measures have not yet been identified by the CPUC, GSWC has proposed specific changes to current CPUC ratesetting practices which will, as a practical matter, support implementation of the WAP conservation objectives and greatly enhanced DMMs.

The cost of water is an important economic factor that needs to be considered when implementing conservation programs. Higher cost of water increases the economic viability of BMP implementation. Currently there are no water projects planned in the Region II CSAs that would result in higher unit cost of water, thus increasing the economic feasibility of water conservation measures. However, the marginal cost of water is based on purchased water from the West Basin Municipal Water District (MWD), which is likely to increase with time.

### Legal Considerations

GSWC has the legal authority to implement cost beneficial BMPs that were approved by the CPUC in its capital/operating budget. When developing programs that advance water conservation, GSWC can offer financial incentives, information or educational programs in its service area; however, GSWC has no legal authority to enforce urban codes or plumbing codes for new or existing connections that pertain to implementation of efficient devices, or reduction of water use.

Ordinances that prohibit water waste (BMP 13) are jointly developed by CPUC and GSWC. Ordinances are enacted by the CPUC only during water shortage. As a water retailer, GSWC has no legal authority to enact or enforce waste water prohibition ordinances without CPUC approval.

### Cost Share Partners

In an effort to expand the breadth of offered programs GSWC partners with wholesale suppliers, energy utilities, and other agencies that support conservation programs. Joint participation offers opportunity for cost sharing and development of more effective conservation strategies.

GSWC obtains water from the Metropolitan Water District of Southern California (Metropolitan) through the West Basin MWD and actively participates in programs offered by this wholesaler. Metropolitan has a mandate to provide financial incentives or other resources, as appropriate, to the retail water agency customers to further cost effective water conservation efforts. Metropolitan offers the following conservation programs in the Region II CSAs that provide GSWC an opportunity for cost sharing:

- Rebate program for high-efficiency toilets (BMP 2)
- Rebates for high-efficiency clothes washers, in cooperation with energy utilities (BMP 6)
- Adult education programs (BMP 7)
- Financial incentives for CII sector under its “Save-a-Buck” program (BMP 9).

The GSWC participates in these programs by providing additional funding or resources to implement offered programs. The additional funding may include additional rebate offers, program advertising, or sharing of costs related to organizing events in its service area.

GSWC is a member of the Water Education Water Awareness Committee (WEWAC). WEWAC, which comprises local water agencies, forms partnerships with educators and institutions within its service territory and assists in incorporating the water conservation message into the regular curriculum, development of education workshops and other tools.

GSWC is committed to continue efforts to implement cost effective BMPs that are approved by the CPUC, and to achieve target implementation coverage by the end of the implementation period assigned to each BMP.

Table 5-5
Results of Economic Analysis for BMPs Currently Not Meeting Coverage Requirements

| | BMP 1: Residential Water Surveys | | | BMP 3: System Audits and Repair | | | BMP 5: Large Landscape Conservation Programs | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Interven-tions | Water Saved (ac-ft/yr) | Cost ($/Yr) | Interven-tions | Water Saved (ac-ft/yr) | Cost ($/yr) | Interven-tions | Water Saved (ac-ft/yr) | Cost ($/yr) |
| 2006 | 4698 | 108 | $164,440 | 32 | 19 | $32,300 | 468 | 301 | $200,059 |
| 2007 | 4698 | 216 | $154,100 | 32 | 39 | $32,300 | 468 | 602 | $200,059 |
| 2008 | 0 | 216 | $0 | 32 | 58 | $32,300 | 129 | 612 | $19,366 |
| 2009 | 0 | 216 | $0 | 32 | 78 | $32,300 | 129 | 621 | $19,366 |
| 2010 | 0 | 108 | $0 | 32 | 97 | $32,300 | 50 | 324 | $7,449 |
| 2011 | 0 | 0 | $0 | 32 | 97 | $32,300 | 50 | 26 | $7,449 |
| 2012 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 17 | $0 |
| 2013 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 7 | $0 |
| 2014 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 4 | $0 |
| 2015 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2016 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2017 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2018 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2019 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2020 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2021 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2022 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2023 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2024 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2025 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2026 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2027 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2028 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2029 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| 2030 | 0 | 0 | $0 | 32 | 97 | $32,300 | 0 | 0 | $0 |
| Total | 9,397 | 865 | $318,540 | 646 | 1,744 | $807,500 | 1,294 | 2,514 | $453,749 |

Table 5-5 (continued)
Results of Economic Analysis for BMPs Currently Not Meeting Coverage Requirements

| | BMP 9: CII Conservation | | | BMP 14: Residential ULFT Replacement Program | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Interven-tions | Water Saved (ac-ft/yr) | Cost ($/yr) | Interven-tions | Water Saved (ac-ft/yr) | Cost ($/Yr) | Interven-tions | Water Saved (ac-ft/yr) | Cost ($/yr) |
| 2006 | 326 | 412 | $295,905 | 12,443 | 1,213 | $982,958 | 17,697 | 2,054 | $1,675,662 |
| 2007 | 326 | 824 | $295,905 | 12,443 | 1,581 | $982,958 | 17,697 | 3,263 | $1,665,322 |
| 2008 | 0 | 824 | $0 | 0 | 1,949 | $0 | 161 | 3,659 | $51,666 |
| 2009 | 0 | 824 | $0 | 0 | 1,949 | $0 | 161 | 3,688 | $51,666 |
| 2010 | 0 | 412 | $0 | 0 | 1,949 | $0 | 82 | 2,890 | $39,749 |
| 2011 | 0 | 0 | $0 | 0 | 1,949 | $0 | 82 | 2,072 | $39,749 |
| 2012 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,062 | $32,300 |
| 2013 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,053 | $32,300 |
| 2014 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,049 | $32,300 |
| 2015 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2016 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2017 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2018 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2019 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2020 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2021 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2022 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2023 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2024 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2025 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2026 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2027 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2028 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2029 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| 2030 | 0 | 0 | $0 | 0 | 1,949 | $0 | 32 | 2,046 | $32,300 |
| Total | 651 | 3,297 | $591,810 | 24,885 | 37,872 | $1,965,915 | 37,034 | 46,293 | $4,137,514 |

# Chapter 6. Desalination

The Act requires that desalination opportunities be discussed in the UWMP. The Act states the following:

*Section 10631*

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

Per requirements of California Water Code Section 10631(i), this chapter presents opportunities to use desalinated water as a future water supply source for the Culver City System. The reliability of water supply for the Culver City System could be further augmented by the desalination of seawater plans of Metropolitan and WBMWD.

Water available from desalination of seawater may increase the reliability of water supply for the System because these projects increase total available water supply for the wholesalers. However, it is not possible at this point to quantify the amount of water from desalination projects that will be available for the GSWC's Culver City System. The following discussion summarizes the desalination plans of Metropolitan.

Metropolitan and its member agencies view seawater desalination as a future component of a diversified water supply portfolio. Recent and continuous breakthroughs in membrane technology have helped to reduce desalination costs, warranting consideration among alternative resource options outlined in Metropolitan's 2003 Integrated Resources Plan (IRP) Update. Metropolitan's IRP Update includes a target goal of up to 150,000 acre-feet per year (ac-ft/yr) of seawater desalination by 2025. This is an important component of the total estimated water supply production for the region.

To achieve the long-term goals, Metropolitan initiated the Seawater Desalination Program (SDP) in 2001. As part of the program, Metropolitan is providing support for projects in its service area that would deliver desalted water up to 50,000 ac-ft/yr, including financial assistance of up to $250 per ac-ft of water for supplies that have been developed and delivered to the Metropolitan's distribution system for a period of up to 25 years. In addition, Metropolitan has an established a desalination research program. As part of this program, the agency is providing $250,000 to five member agencies to conduct research and investigation in various aspects of seawater desalination. Metropolitan is also involved in efforts to assess current desalination projects and to compare project features and applicability to Southern California. Furthermore, Metropolitan, in association with member agencies, is involved in assessing established and emerging desalination treatment technologies, pretreatment alternatives, and brine disposal issues, as well as the permitting and regulatory approvals associated with the delivery of desalinated seawater to regional and local distribution systems.

The WBMWD is evaluating the economic viability of ocean water desalination as a future water supply. For the past three years, WBMWD has been operating at 40,000 gallons per day (gpd) desalination pilot plant project for desalting of seawater with a goal of identifying

optimal performance conditions, evaluating water quality, and overall cost. The data obtained from this pilot project indicate that the treatment approach of utilizing microfiltration pretreatment and reverse osmosis provides a reliable water quality that meets all State and federal drinking water standards.

WBMWD is considering the installation of a full-scale seawater desalination plant with the capacity of 20,000 ac-ft/yr by 2011. As a first step, it is currently addressing the development of a demonstration project with the Regional Water Quality Control Board and the California Coastal Commission. The demonstration project for desalting of 500,000 gallons per day of seawater would evaluate the water quality, performance and treatment stability, optimize operational performance utilizing full scale process equipment, and acquire the necessary data to achieve regulatory compliance and approval. In 2005, WBMWD received $1,750,000 in state grants administered under the Proposition 50 funds to assist in the research and construction of the demonstration project.

Table 6-1 provides a summary of opportunities for water desalination. Any future desalination projects of Metropolitan and WBMWD would increase the reliability of water supply for the region.

Table 6-1
Summary of Opportunities for Water Desalination

| Source of Water | Yield (ac-ft/yr) | Start Date | Type of Use | Other |
|---|---|---|---|---|
| Seawater (WBMWD) | 20,000 | 2011 | Potable water | N/A |
| Seawater (Metropolitan) | 150,000 | 2025 | Potable water | N/A |

Notes
1. N/A – Not available
2. Table format based on DWR Guidance Document Table 18

# Chapter 7. Water Shortage Contingency Plan

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

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

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

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

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

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

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

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

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

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

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

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

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

# Action Stages

The Act requires documentation of actions to be undertaken during a water shortage. GSWC has developed actions to be undertaken in response to water supply shortages, including up to a 50 percent reduction in water supply. Implementation of the actions is dependent upon approval of the California Public Utilities Commission (CPUC), especially for implementing mandatory water use restriction. CPUC has jurisdiction over GSWC because GSWC is an investor-owned water utility. Section 357 of the California Water Code requires that suppliers that are subject to regulation by the CPUC secure its approval before imposing water consumption regulations and restrictions required by water supply shortage emergencies. GSWC has proposed that the CPUC support implementation of water shortage allocation policies by amending Commission Rule 14.1 to (a) adopt specific rationing rates and restrictor valve removal fees; and (b) provide for a shortened authorization period to implement emergency measures such as mandatory conservation and rationing in order to effectively manage water shortages.

GSWC has grouped the actions to be taken during a water shortage into four stages, I through IV, that are based on the water supply conditions. Table 7-1 describes the water supply shortage stages and conditions. The stages will be implemented during water supply shortages according to shortage level, ranging from 5 percent shortage in Stage I to 50 percent shortage in Stage IV. The stage determination and declaration during a water supply shortage will be made by the Regional Vice President Customer Service.

Table 7-1
Water Supply Shortage Stages and Conditions

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

Notes
1. This table is based on the DWR Guidebook Table 23.

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

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

- Public information campaign consisting of distribution of literature, speaking engagements, bill inserts, and conversation messages printed in local newspapers
- Educational programs in area schools

- Conservation Hotline, a toll free number with trained Conservation Representatives to answer customer questions about conservation and water use efficiency

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

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

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

# Minimum Supply

The Act requires an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for GSWC's water supply.

Table 7-2 summarizes the minimum volume of water available from each source during the next three years based on multiple-dry water years and normal water year. The driest three-year historic sequence is provided in Chapter 3. The water supply quantities for 2006 to 2008 are calculated by linearly interpolating the projected water supplies of 2005 and 2010. The water supplies for 2005 and 2010 are presented in Chapter 3. It is assumed that the multiple-dry year supplies will be the same as those for the normal years because purchased water supplies will meet projected water demands under all anticipated hydrologic conditions. It should be noted that the active connection capacity to deliver imported water from WBMWD is significantly higher than the projected imported water supply that is expected to meet these demands.

GSWC's supply is expected to be 100 percent reliable from 2005 to 2008. This reliability is a result of the projected reliability of WBMWD as a member of Metropolitan, which intends to provide a 100 percent reliable supply source.

Table 7-2
Three-Year Estimated Minimum Water Supply in ac-ft/yr

| Source | 2006 | 2007 | 2008 | 2005 Average year |
|---|---|---|---|---|
| Purchased water from WBMWD | 6,855 | 6,951 | 7,047 | 6,760 |
| Groundwater | 0 | 0 | 0 | 0 |
| Recycled water | 0 | 0 | 0 | 0 |
| Total | 6,855 | 6,951 | 7,047 | 6,760 |

Notes
1. This table is based on the DWR Guidebook Table 24.

# Catastrophic Supply Interruption Plan

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

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

The ERP coordinates overall company response to a disaster in any and all of its districts. In addition, the ERP requires each district to have a local disaster plan that coordinates emergency responses with other agencies in the area. The ERP also provides details on actions to be undertaken during specific catastrophic events. Table 7-3 provides a summary of actions cross-referenced against specific catastrophes for three of the most common possible catastrophic events: regional power outage, earthquake, and malevolent acts.

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

Table 7-3
Summary of Actions for Catastrophic Events

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

Notes
1. This table is based on the DWR Guidebook Table 25.

# Prohibitions, Penalties, and Consumption Reduction Methods

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

Rule No. 14.1 details the various prohibitions and sets forth water use violation fines, charges for removal of flow restrictors, as well as establishes the period during which mandatory conservation and rationing measures will be in effect. The prohibitions on various wasteful water uses, include, but are not limited to, the hose washing of sidewalks and driveways using potable water, and cleaning for filling decorative fountains. Table 7-4 summarizes the various prohibitions and the stages during which the prohibition becomes mandatory.

Table 7-4
Summary of Mandatory Prohibitions

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

Notes
1. This table is based on the DWR Guidebook Table 26.

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

In addition to prohibitions, Rule No. 14.1 provides penalties and charges for excessive water use. The enactment of these penalties and charges is contingent on approval of Rule 14.1 implementation by the CPUC. When the rule is in effect, violators receive one verbal and one written warning after which a flow-restricting device may be installed in the violator's service for a reduction of up to 50 percent of normal flow or 6 ccf per month, whichever is greater. Table 7-5 summarizes the penalties and charges and the stage during which they take effect.

Table 7-5
Summary of Penalties and Charges for Excessive Use

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

Notes
1. This table is based on the DWR Guidebook Table 28.

In addition to prohibitions and penalties, GSWC can use other consummation reduction methods to reduce water use up to 50 percent. Based on the requirements of the Act, Table 7-6 summarizes the methods that can be used by GSWC in order to enforce a reduction in consumption, where necessary.

Finally, GSWC has requested that the CPUC support implementation of water shortage allocation policies by amending Commission Rule 14.1 to (a) adopt specific rationing rates and restrictor valve removal fees; and (b) provide for a shortened authorization period to implement emergency measures such as mandatory conservation and rationing in order to effectively manage water shortages.

## Revenue Impacts of Reduced Sales

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

Table 7-8 provides a summary of actions and conditions that impact expenditures. Table 7-9 summarizes the proposed measures to overcome revenue impacts. Table 7-10 provides a summary of the proposed measures to overcome expenditure impacts.

Table 7-6
Summary of Consumption Reduction Methods

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

Notes
1. This table is based on the DWR Guidebook Table 27.
2. N/A – Data not available at this time.

Table 7-7
Summary of Actions and Conditions that Impact Revenue

| Type | Anticipated Revenue Reduction |
|---|---|
| Reduced sales | Reduction in revenue will be based on the decline in water sales and the corresponding quantity tariff rate |
| Recovery of revenues with CPUC approved surcharge | Higher rates may result in further decline in water usage and further reduction in revenue |

Notes
1. This table is based on a DWR Guidebook table on page 59.

Table 7-8
Summary of Actions and Conditions that Impact Expenditures

| Category | Anticipated Cost |
|---|---|
| Increased staff cost | Salaries and benefits for new hires required to administer and implement water shortage program |
| Increased O&M[(2)] cost | Operating and maintenance costs associated with alternative sources of water supply |
| Increased cost of supply and treatment | Purchase and treatment costs of new water supply |

Notes
1. This table is based on a DWR Guidebook table on page 59.
2. Operations and maintenance.

Table 7-9
Proposed Measures to Overcome Revenue Impacts

| Names of Measures | Summary of Effects |
|---|---|
| Obtain CPUC approved surcharge | Allows for recovery of revenue shortfalls brought on by water shortage program |
| Penalties for excessive water use | Obtain CPUC approval to use penalties to offset portion of revenue shortfall |

Notes
1. This table is based on the DWR Guidebook Table 29.

Table 7-10
Proposed Measures to Overcome Expenditure Impacts

| Names of Measures | Summary of Effects |
|---|---|
| Obtain CPUC approved surcharge | Allows for recovery of increased expenditures brought on by water shortage program |
| Penalties for excessive water use | Obtain CPUC approval to use penalties to offset portion of increased expenditures |

Notes
1. This table is based on the DWR Guidebook Table 30.

# Water-Use Monitoring Procedures

The Act asks for an analysis of mechanisms for determining actual reduction in water use when the Water Shortage Contingency Plan is in effect. Table 7-11 lists the possible mechanisms used by GSWC to monitor water use and the quality of data expected.

Table 7-11
Water-Use Monitoring Mechanisms

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

Notes
1. This table is based on the DWR Guidebook Table 31.

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

# Chapter 8. Recycled Water Plan

Section 10633 details the requirements of the Recycled Water Plan to be included in the Act. The Act states the following:

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

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

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

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

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

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

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

## Coordination

Table 8-1 summarizes the role of the agencies that participated in the development of recycled water plans that affect the Culver City CSA of the Golden State Water Company (GSWC).

Table 8-1
Role of Participating Agencies in the Development of the Recycled Water Plan

| Participating Agencies | Role in Plan Development |
|---|---|
| Water agencies | GSWC provides data to WBMWD for its use in planning a potential recycled water distribution system expansion and identifying additional recycled water customers. The WBMWD, acting as the recycled water wholesaler, has sole decision-making authority regarding the implementation of the recycled water plan and distribution network. |
| Wastewater agencies | The West Basin Municipal Water District provides a reliable supply of recycled water that meets California recycled water quality standards set forth in Title 22 of the California Code of Regulations. The wastewater originates at the City of Los Angeles' Hyperion Wastewater Treatment Plant. |
| Groundwater agencies | Not applicable for this CSA. |
| Planning agencies[(2)] | The city governments affected by any future recycled water projects may play a role in conducting economic analysis, data assessment, customer assessment, analyzing community impacts, defining customer involvement, establishing conceptual pipeline routes, and estimating costs. |

Notes
1. This table is based on the DWR Guidebook Table 32.
2. The role of planning agencies is solely defined by WBMWD, the owner and operator of the recycled water distribution network affecting the Culver City System.

# Wastewater Quantity, Quality, and Current Uses

Wastewater in the Culver City System is collected by gravity sewers and lift stations owned by the City of Culver City. The wastewater is transported through trunk sewers to the City of Los Angeles Bureau of Sanitation's Hyperion Wastewater Treatment Plant (WWTP) for treatment.

The City of Los Angeles owns and operates the Hyperion WWTP. The Hyperion Treatment Plant is a secondary treatment facility with an average design capacity of 450 million gallons per day (mgd). The WWTP treats an average dry weather flow (DWF) of 339 mgd of wastewater. Approximately 24 mgd of secondary effluent is sent to the West Basin Water Recycling Facility for advanced treatment. The Hyperion Treatment System serves approximately 4 million people. Treatment at the Hyperion WWTP consists of screening, grit removal, and primary sedimentation with coagulation and flocculation. In secondary treatment, the primary effluent is biologically treated in a high purity oxygen activated sludge process. After clarification, the remaining 315 mgd of undisinfected, secondary effluent is discharged to the Pacific Ocean through a five mile submerged outfall pipe in Santa Monica Bay.

The West Basin Municipal Water District (WBMWD) operates the West Basin Water Recycling Facility (WBWRF) in El Segundo. WBMWD is contractually entitled to receive up to 70 mgd of secondary effluent from the Hyperion WWTP for advanced treatment, but on average receives 24 mgd. WBWRF provides tertiary treatment to the Hyperion secondary

effluent to produce high-purity recycled water that complies with the requirements of Title 22 of the California Code of Regulations. The recycled water produced by WBMWD is used for beneficial uses such as landscape irrigation, industrial applications (including cooling water and boiler feed water), and other purposes such as groundwater injections to control seawater intrusion.

Because the Hyperion WWTP treats wastewater for a larger population than is accounted for in the Culver City System, an estimated per capita wastewater generation factor was used to calculate the volume of wastewater generated by the customers in the Culver City System. The wastewater generation factor is based on the population served and the average wastewater treatment rate for the Hyperion WWTP. The WWTP serves approximately 4 million residents and treats an average of 339 mgd, making the average per capita wastewater generation factor for the Hyperion WWTP 85 gallons per day (gpd). Table 8-2 summarizes the estimates of the existing and projected volumes of wastewater collected and treated in the Culver City System. Additionally, because only 24 mgd will be treated by WBMWD to meet recycled water standards, the same percentage (7 percent) was used to estimate the amount of wastewater generated in the Culver City System that will be treated to meet recycled water standards.

Because 93 percent of the total wastewater treated at the Hyperion WWTP is discharged into the Pacific Ocean, the same percentage was used to estimate what fraction of the wastewater collected and treated in the Culver City System will be discharged into the Pacific Ocean. Table 8-3 lists the estimates of existing and projected volumes of treated effluent that will be discharged into the Pacific Ocean. Table 8-4 was intentionally left blank as there are no existing uses of recycled water by the GSWC customers in the Culver City System.

Table 8-2
Estimates of Existing and Projected Wastewater Collection and Treatment in ac-ft/yr (mgd) for the Culver City System

| | 2000[2,3] | 2005[3] | 2010 | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|---|---|
| Projected population in service area | 36,333 | 37,577 | 37,888 | 38,102 | 38,311 | 38,517 | 38,714 |
| Wastewater collected & treated in service area | 3,468 (3.1 mgd) | 3,586 (3.2 mgd) | 3,616 (3.2 mgd) | 3,636 (3.2 mgd) | 3,656 (3.3 mgd) | 3,676 (3.3 mgd) | 3,695 (3.3 mgd) |
| Quantity that meets recycled water standard | 243 (0.2 mgd) | 251 (0.2 mgd) | 253 (0.2 mgd) | 255 (0.2 mgd) | 256 (0.2 mgd) | 257 (0.2 mgd) | 259 (0.2 mgd) |

Notes
1. This table is based on the DWR Guidebook Table 33.
2. Based on actual year.
3. Values of wastewater collected and treated are estimated. For a description of the methodology, refer to the text.

Table 8-3
Estimates of Existing and Projected Disposal of Wastewater In ac-ft/yr (mgd) for the Culver City System

| Method of Disposal | Treatment Level | 2000[2] | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|---|---|---|
| Pacific Ocean Discharge | Tertiary | 3,225 (2.9) | 3,335 (3.0) | 3,363 (3.0) | 3,382 (3.0) | 3,400 (3.1) | 3,419 (3.1) | 3,436 (3.1) |

Notes
1. This table is based on the DWR Guidebook Table 34.
2. Based on actual year.
3. Volumes of effluent discharged are estimated. For a description of the methodology, refer to the text.

Table 8-4
Existing Recycled Water Use

| Type of Use | Treatment Level | 2004 Use (ac-ft/yr) |
|---|---|---|
| N/A | N/A | N/A |

Notes
1. This table is based on the DWR Guidebook Table 35a.

# Potential and Projected Use

The West Basin Municipal Water District (WBMWD) is the agency that acquires, controls, distributes, and sells recycled water to several cities, agencies, and customers in the greater Los Angeles area. WBMWD owns and operates the recycled water distribution infrastructure in its service area. The Culver City System does not currently receive recycled water from WBMWD nor are there any plans to extend the recycled water distribution network to Culver City in the next 25 years.

Therefore, Table 8-5, Table 8-6, and Table 8-7 were intentionally left blank because they are not applicable for this system. However, if and when WBMWD decides to extend their recycled water distribution network to the Culver City System, GSWC will support the project identifying potential recycled water customers.

Table 8-5
Potential Future Recycled Water Uses in ac-ft/yr

| Type of Use | Treatment Level | 2010[2] | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Notes
1. This table is based on the DWR Guidebook Table 35b.
2. Based on actual year.

Table 8-6
Projected Future Recycled Water Use in Service Area in ac-ft/yr

| Type of Use | 2010[2] | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A |

Notes
1. This table is based on the DWR Guidebook Table 36.
2. Based on actual year.

Table 8-7
Comparison of Recycled Water Uses—Year 2000 Projections versus 2005 Actual

| Type of Use | 2000 Projection for 2005 | 2005 Actual Use |
|---|---|---|
| N/A | N/A | N/A |

Notes
1. This table is based on the DWR Guidebook Table 37.

# Optimization and Incentives for Recycled Water Use

WBMWD is responsible for determining the technical and economic feasibility of supplying recycled water to the area. Because there are currently no plans to extend recycled water to the Culver City System, there are no actions in place at this time by which GSWC is encouraging the use of recycled water in the system. Therefore, Table 8-8 is not applicable for this system and has been intentionally left blank.

However, if and when WBMWD decides to implement a recycled water project in the system, where feasible, GSWC will support the project by encouraging recycled water use among its customers.

Table 8-8
Methods to Encourage Recycled Water Use and the Resulting Projected Use in ac-ft/yr

| Actions | 2010 | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A |

Notes
1. This table is based on the DWR Guidebook Table 38.

# Chapter 9. Water Quality

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

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

## GSWC Measures for Water Quality Regulation Compliance

To facilitate full compliance with water quality laws and regulations, GSWC maintains a water quality department that has independent lines of reporting authority within the organization. The water quality department is headed by a company officer specifically assigned to oversee and manage the company's water quality program. The Vice President of Water Quality has a staff of three managers, located in each of the company's regional offices. Water quality managers, in turn, manage a staff of water quality engineers and technicians that are assigned to district offices. Each district office is assigned one water quality engineer and at least one water quality technician to provide direct support to the local drinking water systems within the district.

The district water quality engineer is the main point of contact for the Department of Health Services as well as other regulatory agencies. The water quality engineer also is responsible for coordinating compliance measures through scheduling required sample collection, preparing water quality related plans, maintaining a water quality database, providing training to operations, implementing a cross connection control program, and preparing and submitting monitoring reports, permit applications and other regulatory related correspondence.

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

## Current and Proposed Water Quality Regulations

Environmental Protection Agency (EPA) and the State of California have established, or will develop, the following key primary water quality regulations under the Safe Drinking Water Act (SDWA). The Current and proposed water quality regulations listed below are discussed in the following paragraphs. These regulations apply to community and non-community water systems, which includes those of Golden State Water Company (GSWC)

and may affect the GSWC water treatment facilities, treatment processes used, and monitoring requirements. See Table 9-1 for the status of current and proposed water quality regulations.

- Total Coliform Rule (TCR)
- Surface Water Treatment Rules
  - Surface Water Treatment Rule (SWTR)
  - *Cryptosporidium* Action Plan
  - Interim Enhanced SWTR (IESWTR)
  - Long Term 1 Enhanced SWTR (LT1ESWTR)
  - Long Term 2 Enhanced SWTR (LT2ESWTR)
- Disinfectant/Disinfection By-Product Rules
  - Total Trihalomethanes (TTHMs) Rule
  - Disinfectant/Disinfection By-Product (D/DBP) Rule Stage 1
  - Disinfectant/Disinfection By-Product (D/DBP) Rule Stage 2
- Volatile Organic, Synthetic Organic and Inorganic Chemical Rules
  - Volatile Organic Chemicals Rule
  - Phase IIA Fluoride Rule
  - Phase IIA Synthetic Organic Chemicals and Inorganic Chemicals Rule
  - Phase V Synthetic Organic Chemicals and Inorganic Chemicals Rule
- Groundwater Rule
- Filter Backwash Rule
- Lead and Copper Rule
- Arsenic Rule
- Radionuclide Rule
- Radon Rule
- Drinking Water Candidate Contaminant List

## Safe Drinking Water Act (SDWA)

Under the federal SDWA of 1974, EPA established drinking water regulations for 23 contaminants. The SDWA Amendments of 1986 required EPA to set maximum contaminant levels (MCLs) for 83 specific constituents and to set MCLs for an additional 25 constituents every 3 years, indefinitely. The 1996 SDWA amendments retained the requirement to regulate the 83 contaminants imposed by the 1986 amendments but removed the requirement for 25 additional contaminants every 3 years and established a different process for selecting contaminants for regulation.

Under the 1996 SDWA amendments, EPA must:

- Publish a list of contaminants that may require regulation under the SDWA no later than February 6, 1998, and every 5 years thereafter
- Consult with the scientific community, including the Science Advisory Board, when preparing the list
- Provide notice and opportunity for public comment on the list

- Establish an occurrence database to be considered when EPA makes decisions to regulate contaminants that are known or anticipated to occur in public water systems
- Decide whether to regulate no fewer than five listed contaminants, no later than August 6, 2001, and every 5 years thereafter

To regulate a contaminant, EPA must find that the contaminant has an adverse effect on human health, that it occurs or is likely to occur in public water systems at a frequency and at concentrations of public health concern, and that regulation of the contaminant presents a meaningful opportunity to reduce health risks for those served by public water systems.

The status of the regulations, including the final rules and those that are still being formulated, are discussed below and summarized in Table 9-1. The current national primary drinking water standards, which are those standards related to health, are shown in Table 9-2. EPA considers compliance with secondary standards, which are those standards related to the aesthetic quality of water, to be optional; but, in California, secondary standards are mandatory unless the population served consents otherwise. The California secondary drinking water standards are shown in Table 9-3.

## Primacy

EPA has delegated primary enforcement responsibility for drinking water program implementation and enforcement to the state of California. To maintain primacy (authority to enforce drinking water regulations) under the SDWA, the state must adopt drinking water regulations at least as stringent as the federal regulations and meet other relevant criteria. State drinking water regulations may be more stringent than the federal regulations, but not less stringent. In California, the California Department of Health Services (CDHS) is the primacy agency for drinking water regulations.

Table 9-1
Status of Drinking Water Regulations

| Regulation | Contaminants | Status |
|---|---|---|
| **Final Rules** | | |
| NIPDWR | 18 original contaminants | Rule final 1975 |
| Interim Radionuclides | 4 additional radionuclides | Rule final 1976 |
| Total Trihalomethanes | Sum of four trihalomethanes | Rule final 1979 |
| Revised Fluoride | Fluoride | Rule final 1986 |
| VOCs (Phase I) | 8 VOCs | Rule final 1987 |
| SWTR | Treatment tech. (*Giardia* and viruses) | Rule final 1989 |
| TCR | Total coliforms, fecal coliforms, *E. coli* | Rule final 1989 |
| Lead and Copper Rule | Lead, copper | Rule final 1991 |
| SOCs, IOCs (Phase II) | 36 IOCs, SOCs, and pesticides | MCLs final 1991 |
| SOCs, IOCs (Phase IV) | 5 IOCs, 18 SOCs | MCLs final 1992 |
| D/DBP Rule Stage 1 | Disinfectants, disinfection by-products | Rule final 1998 |
| IESWTR | Treatment Tech. (*Cryptosporidium*) | Rule final 1998 |
| Radionuclides | Radionuclides (other than Radon) | Rule final 2000 |
| Arsenic[1] | Arsenic | Rule final 2001, new MCL of 10 µg/L effective January 23, 2006 |

Table 9-1
Status of Drinking Water Regulations

| Regulation | Contaminants | Status |
|---|---|---|
| LT1ESWTR | Extends IESWTR to small utilities | Rule final 2001 |
| Filter Backwash Rule | Regulate Filter Backwash recycle | Rule final 2001 |
| Methyl Tertiary Butyl Ether | MTBE | Rule final 2001 |
| Drinking Water Contaminant Candidate List[1] | No less than 5 Contaminants | Decision to regulate in 2001, revised DWCCL in 2003 and every 5 years thereafter |
| **Proposed Rules** | | |
| LT2ESWTR[1] | Revision of IESWTR to control *Cryptosporidium* | Proposed August 2003, missed May 2002 SDWA deadline. Final rule expected 2005 |
| D/DBP Rule Stage 2[1] | Revision of D/DBP Rule Stage 1 for distribution system monitoring | Proposed August 2003, missed May 2002 SDWA deadline. Final rule expected 2005 |
| Groundwater Rule[1] | Virus, groundwater disinfection | Proposed May 2000, missed May 2002 SDWA deadline. Final rule expected 2005 |
| **Future Rules** | | |
| Radon[1] | Radon | Proposed November 1999, EPA has not indicated a final schedule for promulgation |
| TCR Revisions[1] | Distribution System Issues | Potentially proposed mid-2006, final rule by 2008 |

Notes
1. Regulation with potential future impact to GSWC.

Table 9-2
Current Federal Drinking Water Standards

| Parameter | mg/L (except as noted) |
|---|---|
| **Inorganic Contaminants** | **MCL** |
| Antimony | 0.006 |
| Arsenic[1] | 0.05 |
| Asbestos | $7 \times 10^6$ Fibers/L |
| Barium | 2 |
| Beryllium | 0.004 |
| Bromate | 0.010 |
| Cadmium | 0.005 |
| Chlorite | 0.8 |
| Chromium | 0.1 |
| Cyanide | 0.2 |
| Fluoride | 4 |
| Mercury | 0.002 |
| Nickel | 0.1 |
| Nitrate (as N) | 10 |
| Nitrite (as N) | 1 |
| Nitrate plus Nitrite (both as N) | 10 |
| Selenium | 0.05 |
| Thallium | 0.002 |
| **Inorganic Contaminants** | **Treatment Technique** |
| Copper | 1.3 (Action Level) |
| Lead | 0.015 (Action Level) |
| **Organic Contaminants** | **MCL** |
| Alachlor | 0.002 |
| Benzene | 0.005 |
| Benzo (a) pyrene | 0.0002 |
| Carbon Tetrachloride | 0.005 |
| Carbonfuran | 0.04 |
| Chlordane | 0.002 |
| 2,4-D | 0.07 |
| Dalapon | 0.2 |
| Di (2-ethylhexyl) adipate | 0.4 |
| Di (2-ethylhexyl) phthalate | 0.006 |
| 1,2-Dibromo-3-chloropropane (DBCP) | 0.0002 |
| p-Dichlorobenzene | 0.075 |
| o-Dichlorobenzene | 0.6 |
| 1,2-Dichloroethane | 0.005 |
| 1,1-Dichloroethylene | 0.007 |
| cis-1,2-Dichloroethylene | 0.07 |
| trans-1,2-Dichloroethylene | 0.1 |

Table 9-2
Current Federal Drinking Water Standards

| Parameter | mg/L (except as noted) |
|---|---|
| Dichloromethane | 0.005 |
| 1,2-Dichloropropane | 0.005 |
| Dinoseb | 0.007 |
| Diquat | 0.02 |
| Endothall | 0.1 |
| Endrin[h] | 0.002 |
| Ethylbenzene | 0.7 |
| Ethylene Dibromide | 0.00005 |
| Glyphosate | 0.7 |
| Haloacetic Acids (sum of 5 [HAA%]) | 0.060 |
| Heptachlor | 0.0004 |
| Heptachlor epoxide | 0.0002 |
| Hexachlorobenzene | 0.001 |
| Hexachlorocyclopentadiene | 0.05 |
| Lindane | 0.0002 |
| Methoxychlor | 0.04 |
| Monochlorobenzene | 0.1 |
| Oxamyl (vydate) | 0.2 |
| Pentachlorophenol | 0.001 |
| Picloram | 0.5 |
| Polychlorinated biphenyls (PCBs) | 0.0005 |
| Simazine | 0.004 |
| Styrene | 0.1 |
| 2,3,7,8-TCDD (dioxin) | $5 \times 10^{-8}$ |
| Tetrachloroethylene | 0.005 |
| Toluene | 1 |
| Toxaphene (revised)[f] | 0.003 |
| 2,4,5-TP (silvex) | 0.05 |
| 1,2,4-Trichlorobenzene | 0.07 |
| 1,1,1-Trichloroethane | 0.20 |
| 1,1,2-Trichlororethane | 0.005 |
| Trichloroethylene | 0.005 |
| Trihalomethanes (sum of 4 [TTHM]) | 0.080 |
| Vinyl Chloride | 0.002 |
| Xylenes (total) | 10 |
| **Organic Contaminants** | **Treatment Technique** |
| Acrylamide | Restrictions in polymer use |
| Epichlorohydrin | Restrictions in material use |
| **Microorganisms** | **Standard** |
| *Cryptosporidium* | Treatment Tech (99% removal/inactivation) |
| *Escherichia coli* | Treatment Tech (0 cfu/100 mL) |

Table 9-2
Current Federal Drinking Water Standards

| Parameter | mg/L (except as noted) |
|---|---|
| Fecal Coliforms | Treatment Technique (0 cfu/100 mL) |
| *Giardia lamblia* | Treatment Tech (99.9% removal/inactivation) |
| Heterotrophic Bacteria | Treatment Tech (500 cfu/mL at end of distribution system or measurable chlorine residual) |
| *Legionella* | Treatment Tech |
| Total Coliforms | 5% (presence/absence) |
| Turbidity | Performance Std (0.3 NTU, 95%) |
| Viruses | Treatment Tech (99.99% removal/inactivation) |
| **Radionuclides** | **MCL** |
| Beta-particle and photon emitters | 4 mrem |
| Alpha emitters | 15 pCi/L |
| Radium 226 + 228 | 5 pCi/L |
| Uranium | 0.030 |

Notes
1. Arsenic has been proposed at 10 µg/L in the new rule that is currently being reviewed.

Table 9-3
Current State Secondary Drinking Water Regulations

| Parameter | mg/L (except as noted) | | |
|---|---|---|---|
| **Contaminants** | **SMCL or SMCL Ranges** | | |
| Aluminum | 0.2 | | |
| Color | 15 Color Units | | |
| Copper | 1.0 | | |
| Corrosivity | Noncorrosive | | |
| Foaming Agents (MBAs) | 0.5 | | |
| Iron | 0.3 | | |
| Manganese | 0.05 | | |
| Methyl tertiary butyl ether (MTBE) | 0.005 | | |
| Odor | 3 Threshold Odor Number | | |
| Silver | 0.1 | | |
| Thiobencarb (Bolero) | 0.001 | | |
| Turbidity | 5 units | | |
| Zinc | 5 | | |
| | **Recommended** | **Upper** | **Short Term** |
| Total Dissolved Solids | 500 | 1,000 | 1,500 |
| Specific Conductance, micromhos | 900 | 1,600 | 2,200 |
| Chloride | 250 | 500 | 600 |
| Sulfate | 250 | 500 | 600 |

## Total Coliform Rule (TCR)

The TCR is the latest version of one of the oldest drinking water regulations. Coliform bacteria are organisms that have one or more biochemical reactions similar to Esherichia coli (E. coli). E. coli are bacteria that are commonly found in the digestive tract of warm-blooded animals. The total coliform test, then, is a test for bacteria, with similar biochemistry to E. coli, but which are capable of growing at 35 degrees Celsius ($^{o}$C). The total coliform group includes several genera of bacteria belonging to the family Enterobacteriaciae. Some of these bacteria are not pathogenic. Total coliform testing is commonly used in drinking water treatment to determine the effectiveness of source water, treatment, and distribution system barriers to bacterial contamination.

The TCR was promulgated by the EPA in 1989 and DHS enacted its companion TCR that became effective on June 30, 1992. The TCR changed the basic principle of regulating bacterial quality. Instead of having an MCL based on average concentrations, total coliforms are now regulated based on presence/absence. For systems that collect 40 or more samples per month (more than 33,000 population) to be in compliance, no more than 5 percent of the samples taken for coliforms in a month can be coliform positive. A sample is considered positive if 1 of the 10 tubes is positive.

Other significant provisions of the TCR are:

- In the event of a coliform-positive sample, the utility must resample that location as well as the nearest upstream and downstream services for coliforms the following day and continue to analyze on consecutive days until either all three samples are negative, or the TCR is violated.
- Coliform-positive samples must be further examined for the presence of fecal coliforms or *E. coli*.
- If two consecutive samples from the same sample point are positive and one of those samples is positive for fecal coliforms, the system is out of compliance for that month.

All distribution system zones must be included in the routine sampling program, and some of the sample locations must be rotated throughout the year.

### TCR Potential Revisions and Distribution System Requirements

The 1996 amendments to the SDWA require EPA to review and revise, as appropriate, each national primary drinking water regulation at least every 6 years. EPA published as part of its National Primary Drinking Water Regulation (NPDWR) Review its decision to revise the TCR in July, 2003.

EPA is in the process of reviewing available data and research on distribution system risks. These efforts will result in the review and possible revision of the TCR, as well as the potential for requirements for finished water quality in the distribution system. The potential rule revisions could be proposed in 2006 with the rule final by 2008.

EPA has been working with distribution system experts to compile existing information regarding potential health risks that may be associated with distribution systems in "white papers" on the following nine distribution system issues:

- Intrusion
- Cross-connection control
- Aging infrastructure and corrosion
- Permeation and leaching
- Nitrification
- Biofilms/growth
- Covered storage
- Decay in water quality over time
- New or repaired watermains

EPA is also involved in the development of a series of ten TCR issue papers on the following issues:

- Distribution system indicators of water quality
- The effectiveness of disinfectant residuals in the distribution system
- Analysis of compliance and characterization of violations of the TCR
- Evaluating HACCP strategies for distribution system monitoring, hazard assessment and control
- Inorganic contaminant accumulation in distribution systems
- Distribution system inventory and condition assessment
- Optimization of distribution system monitoring strategies
- Effect of treatment on nutrient availability
- Causes of Total Coliform positive samples and contamination events in distribution systems
- Total Coliform sample invalidation

Distribution system white papers and TCR issue papers are intended to inform EPA and stakeholders of areas of potential TCR revisions and distribution system requirements.

## Surface Water Treatment Rules

A series of rules has been or is currently being developed to provide control of microbial contaminants from surface water or groundwater that is under the direct influence of surface water.

### The Surface Water Treatment Rule (SWTR)

The SWTR is primarily a microbiological regulation and codified the use of the multiple barrier concept for control of pathogenic organisms. The SWTR became effective in June 1993, and required all but the most pristine water sources to provide filtration of their surface water (or groundwater under the direct influence of surface water). It also required all systems having a surface water source to provide some level of disinfection.

In further defining the physical barrier of filtration, the SWTR reduced the MCL for finished water turbidity from 1 NTU to 0.5 NTUs (95 percent of the monthly samples, measured daily), and set a limit of 5 NTUs on the maximum finished water turbidity.

For disinfection, the SWTR required 99.9 percent (3-logs) for the combination of removal and inactivation of *Giardia* cysts and 99.99 percent (4-logs) for the combination of removal and inactivation of enteric viruses. The SWTR gave credit for 99.7 percent (2½-logs) removal

of *Giardia* cysts and 99 percent (2-logs) removal of viruses in a "well-operated" conventional surface water treatment plant. The SWTR, then, required an additional ½-log of inactivation of *Giardia* cysts and an additional 2-logs of inactivation of viruses. Credit for the inactivation (or disinfection) requirements for *Giardia* and viruses was given for chlorine, chloramines, ozone, and chlorine dioxide. The credit was based upon achieving the product of disinfectant concentration and contact time, known as CT. The concentration (C) used was normally the concentration exiting the reactor used for primary disinfection and the time (T) was the time it took for 10 percent of the influent flow to exit the reactor ($T_{10}$). $T_{10}$ was to be determined using tracer testing in the plants using different flow rates. Tables of CT required for each of the disinfectants at different temperatures, and in some cases, different pH values were published in the *Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources* (American Water Works Association, Denver, CO, 1991).

As an additional barrier to organisms, the SWTR required that a measurable disinfectant residual be present or heterotrophic plate counts be less than 500 colony-forming units at the farthest ends of the distribution system. The measurable residual was defined as a minimum of 0.2 mg/L of free or combined chlorine.

### Cryptosporidium Action Plan

In April 1995, the California DHS adopted a *Cryptosporidium* Action Plan that is intended to facilitate comprehensive compliance with the SWTR. The plan does not include any requirements beyond the existing regulations but, instead, clarifies the existing requirements to optimize the treatment process and reduce the risk of a waterborne illness outbreak. The plan includes six elements:

1. Conduct watershed sanitary surveys
2. Submission of available data to CDHS
3. Review of alternative technologies
4. Prepare operations plan/optimized treatment
5. Prepare reliable removal treatment processes
6. Inform the public

The plan acknowledges that seasonal raw water turbidity and coliform data are a necessary part of any watershed sanitary survey. If cattle, sheep, or other livestock are allowed on a watershed, the survey must identify their location and number as well as steps that are taken to prevent contamination from the animal waste. Measures that will prevent runoff from any animal containment site reaching the water source should also be identified.

As part of the plan, the DHS completed a comprehensive review of the operations by water systems that use an alternative treatment system. The review focused on compliance with the turbidity standard during normal operations and after backwashing or other interruptions in service. It also included a review of the engineering report required 60 days after the first year of operation.

The *Cryptosporidium* Action Plan states that DHS "agrees with and endorses" the American Water Works Association (AWWA) goal of 0.1 NTU for effluent turbidity from all surface water treatment plants. The plan recommends that all water systems with a surface water supply "adopt a philosophy of always optimizing their surface water treatment plant

operations in a manner designed to achieve the maximum turbidity removal." CDHS believes that, by striving to meet these goals, water systems will be minimizing their customers' risk of exposure to pathogens, including *Cryptosporidium*. The plan identifies the following elements that should be included in the operations plan of a system for treatment optimization:

- Including a statement at the beginning of the operations plan stating that it is the goal of the water utility to optimize plant performance and maximize turbidity removal.
- Monitoring all unit processes closely and responding immediately to any malfunction.
- Operating unit processes at hydraulic loading rates to meet optimization goals.
- Establishing procedures to optimize coagulation, flocculation, and sedimentation to enable maximum turbidity removal in the pretreatment units with a turbidity goal of 1 to 2 NTUs in the sedimentation basin effluent at all times. The proper pretreatment chemical and dose should be determined from results of jar tests or particle counters.
- Expanding turbidity monitoring of individual filters on both a continuous basis and intermittent grab samples and, if possible, turbidity monitoring of all sedimentation processes.
- Calibrating turbidimeters frequently.
- Establishing procedures for optimizing filter operations to avoid turbidity spikes after service interruptions and attempting to achieve turbidity values of 0.3 NTU or less after backwash.
- Operating the plant to avoid sudden increases in flow through a filter.
- Optimizing the performance of backwash water recovery systems. Establishing a goal of less than 2.0 NTUs for the reclaimed backwash water and sludge reclamation system effluent.

The *Cryptosporidium* Action Plan states that all water treatment plants should install a continuous turbidity analyzer and chart recorder to monitor the plant effluent. The monitor should be inspected and standardized regularly. Additionally, all water utility systems should be capable of quickly replacing or repairing failed equipment including:

- Filter media and filter underdrains
- Backwash pumps and surface wash systems
- Pretreatment chemical feed and mixing facilities
- Turbidity monitoring units

Finally, the CDHS suggests that water utilities should provide an informational notification to its customers if they do not have a treatment process in place that provides for physical removal of pathogens. Those plants that are hydraulically overloaded or unable to achieve the effluent turbidity goals until improvements are made may also inform the customers of the system.

### Interim Enhanced Surface Water Treatment Rule

The two main purposes of the IESWTR are to improve control of microbial pathogens in drinking water, particularly for the protozoan, *Cryptosporidium*, and to guard against significant increases in microbial risk that might otherwise occur when systems implement the Stage 1 D/Disinfectant By-Product (DBP) Rule (discussed below). The IESWTR was finalized in December 1998, but enforcement began in 2002.

Because of the resistance of *Cryptosporidium* oocysts to inactivation by chlorine and chloramine and a lack of data concerning other disinfectants, the IESWTR concentrated its efforts on improving the physical barrier (filtration). This was done by further reducing the MCL for finished water turbidity from 0.5 NTU to 0.3 NTU and the maximum single sample finished water turbidity limit was reduced to 1 NTU. A facility is deemed to be in compliance with the MCL if 95 percent of the daily values per month are at or below 0.3 NTU. Since the limit is 0.3 NTU and not 0.30 NTU, the plant is in compliance as long as the values stay at or below 0.34 NTU. Additionally, individual filter monitoring was required and exception reports to the state are required for:

- Any individual filter with a turbidity level greater than 1.0 NTU based on two consecutive measurements 15 minutes apart, and
- Any individual filter with a turbidity greater than 0.5 NTU at the end of the first 4 hours of filter operation based on the two consecutive measurements 15 minutes apart

Also, if an individual filter turbidity level is greater than 1.0 NTU, based on two consecutive measurements 15 minutes apart at any time in each of 3 consecutive months, the system must provide an exceptions report (within 30 days of the exceedance) and conduct a self-assessment of the filter (according to the EPA guidance for Comprehensive Performance Evaluation). And, if an individual filter has turbidity greater than 2.0 NTU, based on two consecutive measurements 15 minutes apart at any time in each of 2 consecutive months, the system must provide an exceptions report (within 30 days of the exceedance) and arrange for a Comprehensive Performance Evaluation (CPE) by the state or a third party approved by the state.

To guard against an increase in microbial risk due to implementation of the DBP Rule, disinfectant profiling and benchmarking are required. Systems having total trihalomethane (TTHM) concentrations exceeding 0.064 mg/L or total haloacetic acid (HAA5) concentrations exceeding 0.048 mg/L are required to produce disinfectant profiles for 3 years of existing data showing the CT that was actually achieved, divided by the CT required for inactivation of *Giardia* and viruses. If the data do not exist, the system was required to collect 1 year of data by March 16, 2000. The data were analyzed; and the month having the lowest ratio of CT to CT required became the "critical period," and the average value of the ratio became the "benchmark." Systems have to consult with the state before changing disinfection practices, which could result in a log inactivation less than the benchmark value.

### Long Term 1 Enhanced Surface Water Treatment Rule

The LT1ESWTR extends the IESWTR to systems serving fewer than 10,000 people.

### Long Term 2 Enhanced Surface Water Treatment Rule

The LT2ESWTR is also designed to control risk from *Cryptosporidium*. An Agreement in Principle was reached by the Federal Advisory Committee for this rule and the Disinfectant/Disinfection By-Product Rule Stage 2 (discussed below) in August 2003. In this Agreement, the major microbial issues were addressed as follows:

- Monitoring for Bin Classification. A two year monitoring program is required for systems serving 10,000 or more people for *Cryptosporidium*, *E. coli*, and turbidity. The water system will be classified into a bin for *Cryptosporidium* risk based upon this monitoring.
- Action Bins. Table 9-4 illustrates the bin classification system for *Cryptosporidium* risk.
- Toolbox. A toolbox approach was recommended that would receive log-credit given in Table 9-5.
- Reassessment and Future Monitoring. Systems that provide a total of 2.5-logs of treatment (99.7 percent) for *Cryptosporidium* in addition to conventional treatment are exempt from reassessment and future monitoring. Six years after initial bin characterization, another round of monitoring will be held.
- Unfiltered Systems. Unfiltered systems must continue to meet filtration avoidance criteria, provide 4-log virus inactivation, 3-log *Giardia* inactivation, and 2-log *Cryptosporidium* inactivation.

Table 9-4
Bin Requirements Table (from Microbial/Disinfection Byproducts [M/DBP] Federal Advisory Committee Stage 2 M-DBP Agreement in Principle)

| Bin Number | Average *Cryptosporidium* Concentration | Additional treatment requirements for systems with conventional treatment that are in full compliance with the IESWTR |
|---|---|---|
| 1 | *Cryptosporidium* <0.075/L | No Action |
| 2 | 0.075/L ≤ *Cryptosporidium*< 1.0/L | 1-log treatment (systems may use any technology or combination of technologies from toolbox as long as total credit is at least 1-log) |
| 3 | 1.0/L ≤ *Cryptosporidium* < 3.0/L | 2.0-log treatment (systems must achieve at least 1-log of the required 2-log treatment using ozone, chlorine dioxide, UV, membranes, bag/cartridge filters, or in-bank filtration) |
| 4 | *Cryptosporidium* ≥ 3.0/L | 2.0-log treatment (systems must achieve at least 1-log of the required 2.5-log treatment using ozone, chlorine dioxide, UV, membranes, bag/cartridge filters, or in-bank filtration) |

## Disinfectant/Disinfection By-Product Rules

### Total Trihalomethanes (TTHM) Rule

The TTHM Rule was the first rule to recognize that a risk of cancer may be connected to the use of chlorine to inactivate pathogenic organisms. The TTHM Rule was effective in 1981.

Chlorine reacts with naturally occurring organic matter (NOM) present in water to form chlorinated organic compounds. Four of these—chloroform, dichlorobromo-methane, dibromochloromethane, and bromoform—were selected to serve as indicators for the cancer risk due to chlorinated disinfection by-products. The MCL for the total of these four compounds was set at 0.1 mg/L. This historic rule changed the manner in which many water plants in the U.S. performed disinfection. Prior to the rule, chlorine was added liberally to raw water to improve plant operations which maximized contact time available through the treatment plant. After this rule took effect, many utilities changed to applying chlorine after much of the NOM had been removed through coagulation, flocculation, and sedimentation. Also, the use of chloramines, which limit the formation of trihalomethanes, was increased as a disinfectant for the distribution system.

Table 9-5
Microbial Toolbox Components (from Microbial/Disinfection Byproducts [M/DBP] Federal Advisory Committee Stage 2 M-DBP Agreement in Principle)

| | Potential Log Credit | | | |
|---|---|---|---|---|
| **APPROACH** | **0.5** | **1** | **2** | **>2.5** |
| **Watershed Control** | | | | |
| Watershed Control Program (1) | X | | | |
| Reduction in oocyst concentration (3) | | As Measured | | |
| Reduction in viable oocyst concentration (3) | | As Measured | | |
| **Alternative Source** | | | | |
| Intake Relocation (3) | | As Measured | | |
| Change to Alternative Source of Supply (3) | | As Measured | | |
| Mgmt. of Intake to Reduce Capture of Oocysts in Source Water (3) | | As Measured | | |
| Managing Timing of Withdrawal (3) | | As Measured | | |
| Managing Timing of Withdrawal in Water Column (3) | | As Measured | | |
| **Pretreatment** | | | | |
| Off-Stream Raw Water Storage w/Detention ~ X days (1) | X | | | |
| Off-Stream Raw Water Storage w/Detention ~ Y weeks (1) | | X | | |
| Presettling Basin w/Coagulant (1) | X | --► | | |
| Lime Softening (1) | ----------► | | | |
| In-Bank Filtration (1) | | X | ---------► | |

Table 9-5
Microbial Toolbox Components (from Microbial/Disinfection Byproducts [M/DBP] Federal Advisory Committee Stage 2 M-DBP Agreement in Principle)

| | Potential Log Credit | | | |
|---|---|---|---|---|
| **APPROACH** | **0.5** | **1** | **2** | **>2.5** |
| **Improved Treatment** | | | | |
| Lower Finished Water Turbidity (0.15 NTU 95%tile Combined Filter Effluent ) | X | | | |
| Slow Sand Filters (1) | | | | X |
| Roughing Filters (1) | X | ----------► | | |
| Membranes (MF, UF, NF, RO) (1) | | | | X |
| Bag Filters (1) | | X | ---------► | |
| Cartridge Filters (1) | | | X | |
| **Improved Disinfection** | | | | |
| Chlorine Dioxide (2) | X | X | | |
| Ozone (2) | X | X | X | |
| UV (2) | | | | X |
| **Peer Review/Other Demo./Validation or System Performance** | | | | |
| Peer Review Program (ex. Partnership Phase IV) | | X | | |
| Performance Studies demonstrating reliable specific log removals for technologies not listed above. This provision does not supercede other inactivation requirements. | | As demonstrated | | |

Notes

X indicates potential log credit based on proper design and implementation in accordance with EPA guidance. Arrow indicates estimation of potential log credit based on site-specific or technology-specific demonstration of performance.

1 Criteria to be specified in guidance to determine allowed credit

2 Inactivation dependent on dose and source water characteristics

3 Additional monitoring for *Cryptosporidium* after this action would determine new bin classification and whether additional treatment is required.

## Disinfectant/Disinfection By-Product (D/DBP) Rule Stage 1

Stage 1 of the D/DBP Rule was enacted to reduce the health risk due to disinfection practice. To accomplish this, the Rule reduced the MCL for TTHM, enacted MCLs for haloacetic acids (HAA5) (Table 9-6), bromate (an ozone by-product), and chlorite (a chlorine dioxide by-product), enacted maximum residual disinfectant levels (MRDLs) for chlorine, chloramines, and chlorine dioxide (Table 9-7), and enacted a treatment technique called "enhanced coagulation" (EC) to limit the amount of unknown by-products that may be formed during chlorination.

Table 9-6
Disinfection By-Product MCLs from Stage 1 of the D/DBP Rule

| Compound or Group | MCL, mg/L |
|---|---|
| Trihalomethanes (TTHM) | 0.08 |
| Haloacetic Acids (HAA5) | 0.06 |
| Bromate | 0.01 |
| Chlorite | 1.0 |

Table 9-7
Disinfectant MRDLs from Stage 1 of the D/DBP Rule

| Compound or Group | MCL, mg/L |
|---|---|
| Chlorine | 4.0 |
| Chloramines | 4.0 |
| Chlorine Dioxide | 0.8 |

EC defines a requirement for removal of total organic carbon (TOC) in the coagulation, flocculation, sedimentation portion of the conventional treatment plant. A system does not have to implement enhanced coagulation if any of the following are true:

1. Source water TOC is less than 2.0 mg/L.
2. Treated water TOC is less than 2.0 mg/L.
3. Source water TOC < 4.0 mg/L, raw water alkalinity > 60 mg/L as $CaCO_3$, distribution system TTHM and HAA5 concentrations are less than or equal to 40 mg/L and 30 mg/L, respectively.
4. Distribution system TTHM and HAA5 concentrations are less than or equal to 40 mg/L and 30 mg/L, respectively, and the system uses only free chlorine for disinfection.
5. Source-water-specific ultraviolet absorbance (SUVA) is less than 2.0 L/mg-m. SUVA is calculated by dividing UV absorbance ($m^{-1}$) at 254 nm by the concentration (mg/L) of dissolved organic carbon (DOC).
6. Treated water SUVA is less than 2.0 L/mg-m.

If none of these conditions are met, Step 1 of EC takes effect. Step 1 establishes targets for additional precursor removals to be achieved based on raw water TOC and alkalinity. These targets are shown in Table 9-8. If a utility can satisfy the TOC percent removals specified in Step 1, the EC criterion for Stage 1 is satisfied.

Table 9-8
Required Removal of TOC by Enhanced Coagulation, Step 1

| Source Water TOC mg/L | Source Water Alkalinity , mg/L as $CaCO_3$ | | |
|---|---|---|---|
| | 0 to 60 | >60 to 120 | >120 |
| >2.0 to 4.0 | 35 | 25 | 15 |
| >4.0 to 8.0 | 45 | 35 | 25 |
| >8.0 | 50 | 40 | 30 |

If a system is unable to meet the Step 1 TOC removal requirements, an alternative percent TOC removal requirement may be selected by Step 2 procedures as follows:

1. Bench or pilot tests are performed in which alum or an equivalent dose of ferric coagulant is added in 10-mg/L increments until the pH is lowered to the target pH value. The target pH values are given in Table 9-9 for varying source water alkalinity.
2. Once the bench or pilot test is complete, the TOC removal (mg/L) is then plotted versus coagulant dose (mg/L).
3. The alternative TOC removal percentage is set at the point on the TOC versus coagulant dose plot where the slope changes from greater than 0.3 mg TOC/L / 10 mg alum/L to less than 0.3/10 and remains less than 0.3/10.

If the TOC removal versus coagulant dose plot does not reach this point of diminishing returns, the water is considered not amenable to enhanced coagulation; and a waiver from the enhanced coagulation requirements must be obtained from the state.

Table 9-9
Target pH Values for Enhanced Coagulation, Step 2 Bench Testing

| Raw Water Alkalinity, mg/L as $CaCO_3$ | Target pH |
|---|---|
| 0 to <60 | 5.5 |
| 60 to <120 | 6.3 |
| 120 to <240 | 7.0 |
| 240 | 7.5 |

## D/DBP Rule Stage 2

Stage 2 of the D/DBP Rule is designed to reduce DBP occurrence peaks in the distribution system. An Agreement in Principle was reached by the Federal Advisory Committee for this rule and the Long Term 2 Enhanced Surface Water Treatment Rule (discussed above) in August 2003. This rule is expected to be finalized in 2005. In this Agreement, the major DBP issues were addressed as follows:

- Compliance monitoring will be preceded by an initial distribution system monitoring study to select optimal sampling points for capturing peaks.

- Compliance with each MCL (TTHM and HAA5) will be determined based upon a Locational Running Annual Average (a running annual average calculated at each sample location).
- Systems will comply with the Stage 2 D/DBP Rule in two phases—3 years after promulgation all systems must comply with a 120-µg/L TTHM / 100-µg/L HAA5 locational running annual average based on Stage 1 monitoring sites and continue to comply with the 80-µg/L TTHM / 60-µg/L HAA5 system running annual average from Stage 1.
- Six years after rule promulgation (with an additional 2-year extension available for systems requiring capital improvements) large and medium systems must comply with an 80-µg/L TTHM / 60-µg/L HAA5 based upon the new sample sites identified in the initial distribution system monitoring described above.
- Small systems must comply with the 80-µg/L TTHM / 60-µg/L HAA5 locational running annual average in either 7.5 or 8.5 years (with an additional 2-year extension available for systems requiring capital improvements) depending upon whether the system is required to do *Cryptosporidium* monitoring as part of the LT2ESWTR.
- The bromate MCL will remain at 0.010 mg/L. EPA commits to review the bromate MCL as part of the 6-year review to determine whether the bromate MCL should be reduced to 0.005-mg/L or a lower concentration.

## Volatile Organic, Synthetic Organic and Inorganic Chemical Rules

### Volatile Organic Chemicals Rule

The Phase I Volatile Organic Chemicals (VOCs) Rule established MCLGs and MCLs for eight VOCs. The rule was promulgated in July 1987 and became effective in January 1989. All public water systems (PWS) were required to complete initial VOC monitoring by December 1991. Monitoring requirements include sampling at each entry point to the distribution system. If no VOCs were detected during the initial monitoring, repeat monitoring is required every three to five years, depending on the vulnerability of the source. If VOCs are detected, quarterly samples must be analyzed. Compliance requires that VOC levels be lower than the MCLs, based on the annual average of quarterly samples.

The Phase I VOC Rule also required monitoring of 51 additional unregulated VOCs. All systems were required to complete the initial monitoring for these contaminants by December 1991. Repeat monitoring is required every five years; however, USEPA revises the list of unregulated contaminants thereby changing the constituents to be monitored. Monitoring requirements for Phase I contaminants were revised in the Phase II Synthetic Organic Chemicals and Inorganic Chemicals Rule (Phase II SOC/IOC Rule) to conform with the standardized monitoring.

Phase IIA Fluoride Rule

The Phase IIA Fluoride Rule applies to all public water systems. The rule was finalized in April 1986 and became effective in October 1987. The primary purpose of the Phase IIA Fluoride Rule was to protect the public from crippling skeletal fluorosis. The rule established an MCLG and MCL for fluoride at 4 mg/L. A secondary contaminant level

(SMCL) of 2 mg/L was established to protect against dental fluorosis. Monitoring of fluoride concentration is required yearly for surface water sources and every three years for groundwater sources. For systems practicing fluoridation, daily monitoring of fluoride at the entrance to the distribution system is recommended.

### Phase II Synthetic Organic Chemicals and Inorganic Chemicals Rule

The Phase II SOC/IOC Rule applies to all public water systems. The rule was promulgated in June 1991 (33 contaminants) and July 1991 (5 contaminants). This rule established MCLs and treatment techniques for 38 contaminants. Monitoring for the Phase II contaminants occurs in a standardized 3 year cycle, which began in January 1993. Compliance with the Phase II MCLs is based on the average of quarterly samples.

### Phase V Synthetic Organic Chemicals and Inorganic Chemicals Rule

The Phase V Rule was promulgated in July 1992 and set MCLGs and MCLs for 23 contaminants. Compliance monitoring for these contaminants follows the same standardized monitoring framework introduced with the Phase II rule. Some of the Phase V contaminants were previously on the unregulated contaminants monitoring (UCM) lists under other rules. To eliminate duplication, these contaminants were withdrawn from the UCM lists.

## Groundwater Rule

The EPA is currently in the process of developing the Groundwater Rule (GWR), formerly known as the Groundwater Disinfection Rule. The rule name was changed to reflect a more holistic regulatory approach to addressing ground water issues. The rule applies to public ground water systems and to systems that mix surface water and ground water if the ground water is added directly to the distribution system and provided to consumers without treatment. This includes untreated stand-alone ground water wells and untreated ground water plants that have their own entry points to the distribution system as well as untreated groundwater blended with treated surface water prior to the entry point to the distribution system. Treatment in this case is defined as 4-log inactivation/removal of viruses.

The proposed Groundwater Rule was published in the Federal Register on May 10, 2000. The final rule is expected in late 2005. Specific requirements proposed in the rule include:

1) System sanitary surveys conducted by the state and identification of significant deficiencies.

2) Hydrogeologic sensitivity assessments for undisinfected systems.

3) Source water microbial monitoring by systems that do not disinfect and draw from hydrogeologically sensitive aquifers or have detected fecal indicators within the system's distribution system.

4) Corrective action by any system with significant deficiencies or positive microbial samples indicating fecal contamination.

5) Compliance monitoring for systems which disinfect to ensure that they reliably achieve 4-log inactivation or removal of viruses.

EPA missed the May 2002 deadline to promulgate, and the final rule was expected in early 2005, but was withdrawn for further review. The schedule for the release of the final GWR is uncertain at this time.

## Filter Backwash Rule

The Filter Backwash Rule is a regulation for filtered surface water supplies that recycle some or all of filter backwash into the plant. The purpose of the rule is to require systems to review their recycle practices and, where appropriate, work with the State to make any necessary changes to current practices that may compromise microbial control. The proposed rule was published in April 2000, with the final rule promulgated in April 2001. It will apply to all systems that use filter recycle streams. The final rule contained the following key provisions:

1. Return of all recycle flows prior to the point of the primary coagulant addition.
2. Direct filtration plants to provide information to the state on their current recycle practice.
3. A requirement for systems meeting criteria to perform a one-time self assessment of their recycle practice and consult with their primacy agency to address and correct high risk recycle operations.

The first element would require that all systems using surface water or groundwater under the direct influence of surface water return all recycle flows to the process prior to the point of the primary coagulant addition. Waivers to this requirement would be available from state primacy agencies for unique treatment conditions.

The second element would require all direct filtration plants to report to the state primacy agency whether flow equalization or treatment is provided for recycle flow prior to its return to the treatment process. The state would use that information to determine the plants that need to change their current recycle practice in order to provide additional public health protection.

The third element would require that all plants using 20 or fewer filters and directly recycling flows to the treatment process without any form of treatment on the recycle flow complete a self-assessment. The self-assessment would be used to determine the effect of untreated recycle flows to the plant process. The State primacy agency would use the results of the self-assessment to determine the appropriate level of treatment of recycle flows.

Systems were to notify the State of their recycle practices by October 2003, modify their recycle return location as required by June 2004, and complete the necessary capital improvements to comply with all rule requirements by June 2006.

## Lead and Copper Rule

The Lead and Copper Rule was promulgated in June 1991 and went into effect in December 1992, with minor revisions released in April 2000. The rule applies to all community and non-transient non-community water systems. The rule developed MCLGs and action levels for both lead and copper in drinking water. The major difference between this regulation and most others is that the water is to be monitored at the customer's tap, not the treatment plant discharge point. Lead and copper must be monitored at the customer's taps every 6

months and twice each calendar year at the highest risk locations. The highest risk locations are defined as:

- Piping with lead solder installed after 1982,
- Lead water service lines,
- Lead interior piping.

For compliance, the samples at the customer's tap must not exceed the following action levels:

- Lead concentration of 0.015 mg/L detected in the 90$^{th}$ percentile of all samples.
- Copper concentration of 1.3 mg/L detected in the 90$^{th}$ percentile of all samples.

If action levels are exceeded, water systems must collect source water samples and submit all data to the state with a treatment recommendation to reduce concentrations below the action level. In addition, the water system must also provide a public education program to its customers within 60 days of the action level exceedance. The education program must be continued until the samples are found to be below the lead action levels.

All water systems that exceed the lead or copper action levels are also required to conduct a corrosion control study. Corrosion control studies must compare the effectiveness of pH and alkalinity adjustment, calcium adjustment, and addition of a phosphate or silica-based corrosion inhibitor. Large and medium systems are also required to monitor many other water quality parameters at the plant discharge and customer's tap.

After a corrosion control study is completed, a water system must develop a corrosion control program and submit it for approval to the primacy agency. Once approval of the plans is received, water systems have 24 months to install and implement the treatment methods for corrosion control and 12 additional months to collect follow-up samples. After this time, the water system must comply with the action levels for both lead and copper.

In 2000, minor revisions to the lead and copper rule were promulgated to streamline requirements and reduce some burdens on water systems. No changes to the MCLs or the MCLGs were made. Small changes were made to reduce the frequency of monitoring for systems with low lead and copper tap levels and to update the analytical methods used for compliance. Further revisions to the lead and copper rule are expected to be proposed in late 2005, but no information as to what will be included in the potential revisions to the rule has been released.

## Arsenic Rule

The original arsenic MCL of 50 µg/L was set by the EPA in 1975 based on Public Health Service Standard originally published in 1942. A new proposed Arsenic Rule was released in June 2000. The EPA was originally under a court-imposed deadline to promulgate this rule by November 1992. However, the EPA has received extensions to examine health effects and occurrence data. EPA succeeded in finalizing the Arsenic Rule on January 16, 2001, during the final days of the Clinton administration. The final rule was published in the Federal Register on January 22, 2001 and became effective on February 22, 2002.

The following is a summary of the major provisions and requirements of the rule:

- A MCLG for arsenic in drinking water is set at zero.
- The MCL for arsenic is revised from 50 µg/L down to 10 µg/L by January 23, 2006.
- Beginning with Consumer Confidence Reports (CCRs) due by July 1, 2002, all community water systems (CWSs) will begin providing health information and arsenic concentrations in the annual reports for water that exceeds 5 µg/L (one half of the MCL).
- Both CWSs and non-transient non-community water systems (NTNCWSs) are required to meet the revised arsenic standard.
- Two compliance requirements for inorganic contaminants (IOCs), volatile organic contaminants (VOCs), and synthetic organic contaminants (SOCs). Specifically, when a system fails to collect the required number of samples, compliance averages will be based on the actual number of samples collected. Also, new public water systems and systems using new sources of water must demonstrate compliance within state-specified time and sampling frequencies. These provisions apply to arsenic.

All CWSs and NTNCWSs that exceed the MCL of 10 µg/L are required to come into compliance 5 years after the publication of the final rule.

## Radionuclide Rule

The original Radionuclide Rule was proposed in July 1991, but court action delayed its final promulgation. The final Radionuclides Rule was published in the Federal Register on December 7, 2000. The rule became effective in December 2003. New monitoring requirements have been phased-in the publication date of the final rule and the beginning of the next Standardized Monitoring Framework period on December 31, 2007. "Phased-in monitoring" refers to the fact that States will require some fraction of water systems to complete their initial monitoring requirements each year of the period between the effective date (December 8, 2003) and the beginning of the new cycle (December 31, 2007). Water systems will determine initial compliance under the new monitoring requirements using the average of four quarterly samples or, at state discretion, using appropriate grandfathered data. Compliance will be determined immediately based on the annual average of the quarterly samples for that fraction of systems required by the state to monitor in any given year or based on the results from the grandfathered data. Water systems with existing radionuclides monitoring data demonstrating that the system is out of compliance with new provisions will be out of compliance on the effective date of December 8, 2003.

In the final rule, EPA set the MCL for uranium at 30 micrograms per liter (µg/L), using its authority under the SDWA for the first time to set a standard at a higher than the feasible level based on cost-benefit considerations. The standard for combined radium-226/228 remains at 5 picoCuries per liter (pCi/L). However, the rule requires improved monitoring for radium. The final rule retains the interim standards for gross alpha particles at 15 pCi/L and for beta and photon emitters at 4 millirems (mrem).

A summary of the final Radionuclides Rule is provided below. Table 9-10 also lists the existing (1979) and the revised MCLs of the final Radionuclide Rule.

- Affected Systems: Community Water Systems (CWSs); non-CWSs, including transient and non-transient, are exempt.
- MCL Goals (MCLGs) for radionuclides: MCLGs of zero; includes combined radium-226/228; gross alpha, beta particle and photon radioactivity, and uranium
- Radium MCL: Combined Ra-226 and Ra-228 MCL of 5 pCi/L; based on new risk levels.
- Beta/Photon Radioactivity MCL:
  - ≤ 4 mrem/yr to the total body or any given internal organ except for H-3 and Sr-90
  - H-3 = 20,000 pCi/L; Sr-90 = 8 pCi/L
  - Total dose from co-occurring beta/photon emitters must be ≤ 4 mrem/yr to the total body of any internal organ;
  - This MCL will be reviewed within 2 to 3 years based on a need for further re-evaluation of the risk management issues.
- Gross alpha MCL: 15 pCi/L excluding uranium and radon, but including Ra-226; maintain current MCL.
- Uranium MCL: 30 µg/L; new MCL.
- Polonium-210: Part of gross alpha; monitoring required under the UCMR rule; further action may be proposed at a later date.
- Lead-210: Not regulated; monitoring required under the UCMR rule; further action may be proposed at a later date.

Table 9-10
Existing and Revised MCLs for Radionuclides

| Contaminant | 1979 MCLs | 2000 Radionuclide Rule MCLs |
|---|---|---|
| Radium 226/228 | 5 piC/L | 5 piC/L |
| Uranium | N/A | 30 piC/L |
| Gross Alpha | 15piC/L | 15 piC/L |
| Beta Particles and Photon Emitters | 4 mrems | 4 mrem |

## Radon Rule

Radon is a naturally occurring, carcinogenic, radioactive gas. Radon in drinking water increases risk to public health, primarily from inhalation of radon discharged through normal household use, such as showering, but also from ingestion of water. The proposed Radon Rule applies to all community water systems that use groundwater or mixed groundwater and surface water supply sources.

On November 2, 1999, the long anticipated and heavily debated Radon Rule was formally proposed, but EPA missed the SWDA deadline of August 2000 promulgation. EPA has not indicated a final schedule for the promulgation of the Radon Rule at this time.

The rule includes a two-option approach that allows states and water suppliers to reduce radon risks in indoor air while protecting public health from the highest levels of radon in drinking water. The proposed rule includes the following provisions:

- MCLG zero
- MCL 300 pCi/L
- Alternative MCL (AMCL) 4,000 pCi/L

The AMCL provision of the rule applies to water systems that adopt and comply with a multimedia mitigation (MMM) program aimed at reducing household indoor/air health risks from the soil as well as the tap water. The AMCL of 4,000 pCi/L is based on the National Research Council recommended estimate of 10,000 to 1 as the transfer factor from water to air and the national average outdoor radon concentration of 0.4 pCi/L in air. Thus, an estimate of 0.4 pCi/L in air would be equivalent to 4,000 pCi/L in water.

If a state develops an MMM program that is approved by the EPA, public water systems in that state will be able to comply with the AMCL rather than the MCL. Alternatively, if a state chooses not to adopt its own MMM program or a state's MMM program does not meet EPA approval, an individual public water supplier can submit an MMM program for approval. The 1996 SDWA Amendments require that the EPA evaluate MMM programs every 5 years.

## Drinking Water Contaminant Candidate List

As amended in 1996, the SWDA requires the EPA to establish a list of contaminants that are known or anticipated to occur in public water systems and may require regulation under the SWDA. The first Contaminant Candidate List (CCL) was published in the Federal Register in March 1998 and included 60 contaminants under consideration for regulation. A second version of the CCL was published in February 2005. The second version of the CCL carries forward 51 of the original 60 unregulated contaminants from the first version of the CCL. The CCL includes both microbiological and chemical contaminants. The CCL published in February 2005 includes 42 chemical contaminants and 9 microbiological contaminants/contaminant groups. Table 9-11 lists the contaminants published in the CCL in February 2005.

Contaminants included in the CCL are studied to develop analytical methods for detecting the contaminants, determine whether they occur in drinking water, and evaluate treatment technologies to remove them from drinking water. In addition, the health effects of the contaminants are studied to help determine if actions such as drinking water guidance, health advisories, or regulation need to be developed. The CCL alone does not impose any requirements on public water system.

Table 9-11
Contaminant Candidate List (CCL)

| **Microbiological Contaminants** |
|---|
| Adenoviruses |
| Aeromonas hydrophila |
| Caliciviruses |
| Coxsackieviruses |
| Cyanobacteria (blue-green algae), other freshwater algae, and their toxins |
| Echoviruses |
| Helicobacter pylori |
| Microsporidia (Enterocytozoon & Septata) |
| Mycobacterium avium intracellulare (MAC) |
| **Chemical Contaminants** |
| 1,2,2,2-tetrachloroethane |
| 1,2,4-trimethylbenzene |
| 1,1-dichloroethane |
| 1,1-dichloropropene |
| 1,2-diphenylhydrazine |
| 1,3-dichloropropane |
| 1,3-dichloropropene |
| 2,4,6-trichlorophenol |
| 2,2-dichloropropane |
| 2,4-dichlorophenol |
| 2,4-dinitrophenol |
| 2,4-dinitrotoluene |
| 2,6-dinitrotoluene |
| 2-methyl-Phenol (o-cresol) |
| Acetochlor |
| Alachlor ESA & other acetanilide pesticide degradation products |
| Aluminum |
| Boron |
| Bromobenzene |
| DCPA mono-acid degradate |
| DCPA di-acid degradate |
| DDE |

Table 9-11
Contaminant Candidate List (CCL)

| |
|---|
| Diazinon |
| Disulfoton |
| Diuron |
| EPTC (s-ethyl-dipropylthiocarbamate) |
| Fonofos |
| p-Isopropyltoluene (p-cymene) |
| Linuron |
| Methyl bromide |
| Methyl-t-butyl ether (MTBE) |
| Metolachlor |
| Molinate |
| Nitrobenzene |
| Organotins |
| Perchlorate |
| Prometon |
| RDX |
| Terbacil |
| Terbufos |
| Triazines and degradation products of triazines (including, but not limited to Cyanazine, and atrazine-desethyl) |
| Vanadium |

# Water Quality Issues

## Surface Water Quality

Surface water served in the Culver City System is MWD treated water received through three inter-connections. Water has to meet all drinking water standards as it leaves the treatment plant, but may not at the inter-connection. While it is assumed that MWD will be responsible for any required water treatment, this may not be the case for parameters monitored in distribution system, such as disinfectant by products or alternative disinfectants from future D/DBP Regulations.

## Groundwater Quality

Table 9-12 summarizes water quality concerns for the only groundwater well in the Culver City System. The well is on standby status due to water quality issues.

Table 9-12
Summary of Assessment

| Well | Capacity (gpm) | Status | Water quality issue/concern | Existing treatment | Recommendations |
|---|---|---|---|---|---|
| Sentney #8 | 700 | Standby | Fe/Mn, BTEX, TDS | Dual media filter | VOC/TDS reduction |

# Projected Impact of Water Quality

Table 9-13 summarizes the projected impact on water supply due to water quality issues with wells in the Culver City System. Table 9-2 summarizes the recent monitoring results for the groundwater well and it can be seen that 100% production will be impacted by both the VOC contamination and high TDS. Treatment is needed for removing VOCs as well as reducing TDS.

Also adjacent water wells of the City of Santa Monica have been tested and MTBE has been detected in several wells in the vicinity.

Table 9-13
Summary of Projected Water Supply Changes Due to Water Quality Issues

| | Projected Change (percent) | | | | | |
|---|---|---|---|---|---|---|
| Water Source | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 |
| Sentney #8 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes
1. Table format based on DWR Guidance Document Table 39

# Distribution System Water Quality

Distribution system water quality monitoring is performed for several water quality parameters in the Culver City System, including general physical parameters, presence of coliform bacteria, disinfectant and disinfection by-product levels, and corrosivity of the water by monitoring lead and copper levels at customer's water taps. All monitoring parameters and levels currently meet drinking water standards. The ability to continue to meet these standards is not expected to change in the foreseeable future, with one exception. Drinking water standard levels for disinfection by-products may be lowered in the future in accordance with the Stage 2 D-DBP Rule. It is unknown at this time if the increased levels of disinfection by-products will be at levels of concern.

The Culver City System utilizes an approved Sample Siting Plan for the collection, recording, and reporting of all bacteriological analyses. Currently the system is served primarily by treated surface water from the MWD.

The Culver City System has also established an aggressive cross-connection control program to reduce the hazard associated with backflow and back-siphonage. These programs are required to comply with DHS regulations on Waterworks Standards and Cross Connection Control.

# Emerging Water Quality Issues

There are a few emerging water quality issues that may have some impacts to the system.

**Perchlorate.** Ammonium perchlorate is used as a main component in solid rocket propellant, and can be found in some types of ammunitions and fireworks. The California Legislature had required the CDHS to adopt a new drinking water standard for perchlorate by January 1, 2004. In advance of the requirement, the Office of Environmental Health Hazard Assessment (OEHHA) set a public health goal for perchlorate at 6 µg/L in March of 2004. The primary health concern related to perchlorate is its effect on the thyroid gland's ability to produce hormones required for normal growth and development. CDHS anticipates it will establish an MCL for perchlorate during 2005.

All source samples have been collected to test for perchlorate and the results are ND for all the wells. Since there are no known sources of the contaminant in the area, the impact of perchlorate could be negligible.

**Chromium 6.** In 2000, there was significant interest in the detection and possible health effects of chromium 6 in drinking water supplies throughout the state. In 2001, the OEHHA withdrew their previously established a Public Health Goal (risk assessment level) of 2.5 µg/L for total chromium. The current MCL enforced by the CDHS is 50 µg/L for total chromium, and OEEHA is in the process of establishing a specific Public Health Goal for chromium 6.

The water system initiated sampling of all its water sources for total chromium and chromium 6 in 2003. Neither total chromium nor chromium-6 was detected at the groundwater source. Total chromium and chromium 6 were non-detectable in the surface water source.

**MTBE.** Until recently, MTBE was the primary oxygenate in virtually all gasoline used in California. It was introduced to surface water bodies from motor exhaust of recreational watercraft, and into groundwater supplies by leaking underground storage tanks. The CDHS adopted a primary MCL of 13 µg/L for MTBE based on carcinogenicity studies in animals. They also established a secondary MCL for MTBE at 5 µg/L, based upon taste and odor concerns.

MTBE has not been detected in the sources serving the water system to date. However, this could change in time as known leaking storage tanks and other MTBE plumes find their way into the water system's well water supply.

**N-Nitrosodimethylamine.** Although NDMA is one of the contaminants released from manufacture of liquid rocket propellants, munitions, and fireworks, the recent findings indicated that low level (ng/L) of NDMA may be a byproduct of surface water treatment process and/or formed in the distribution system. The treated recycled water also has been detected with NDMA. NDMA has not been detected in the sources serving the water system to date.

**DSWAP.** A requirement from the USEPA called for all utilities to complete a Source Water Assessment for all water sources. The water system completed the Assessments in 2003.

The groundwater sources were considered most vulnerable to the following activities not associated with any detected contaminants in the water supply as of this time: gas stations, automobile repair shops, chemical or petroleum pipelines, chemical or petroleum processing or storage, dry cleaners, unauthorized dumping, military installations, historic mining operations, plastics or synthetics producers, sewer collection systems, underground storage tanks confirmed leaking or not yet upgraded, and gas wells.

**Other Contaminants.** VOC (including MTBE), high TDS, Fe, and Mn are the primary concerns of the groundwater quality in the system. Any proposed treatments have to address all the related water quality issues.

**CPUC Interface.** One of the four key principles of the CPUC draft Water Action Plan is to provide safe, high quality water to all regulated water utility customers. Water Plan objectives include maintaining the highest standards of water quality, and, promoting infrastructure investment including investments to protect water quality. Specific proposed actions to support water plan objectives include strengthening inter-agency relations between the CPUC and Department of Health Services, and developing funding mechanisms to address water quality concerns. GSWC has suggested additional steps that can be taken by the CPUC to ensure water quality including assurances of timely recovery of water pollution clean-up costs.

# Chapter 10. Water Service Reliability

Section 10635 of the Act requires that an assessment of water service reliability for various climatic conditions be undertaken. The Act states:

*Section 10635*

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

*(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.*

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

The Culver City System currently gets all of its water supply from imported water from Metropolitan via WBMWD. There is no groundwater source supply for the Culver City System. The conditions in local and distant areas can impact the reliability of supplies. In general, GSWC's supply is expected to be 100 percent reliable through 2030. This reliability is a result of the planned reliability of WBMWD as a member of Metropolitan, which expects to be 100 percent reliable.

Reliability and vulnerability of the imported water supply to seasonal or climatic shortages are dependent on the reliability plan of Metropolitan. Metropolitan's plan for resource management optimizes the use of its available resources during surpluses and shortages to minimize the probability of severe shortages and eliminate the possibility of extreme shortages and shortage allocations. Metropolitan's initiatives to ensure supply reliability are discussed in Chapter 3.

In addition to Metropolitan's reliability initiatives, WBMWD has taken important steps over the past decade to reduce the WBMWD's vulnerability to extended drought or other

potential threats. WBMWD is increasing reliability within its service area by developing water supply projects that further diversify the water resource mix over the next twenty-five years. WBMWD's dependence on traditional sources of water (imported) will continue to decrease with the expansion of these alternative resources (see WBMWD's 2005 UWMP for details).

The following sections present the normal water year, single-dry year, multiple-dry year water supply and demand assessments.

# Normal Water Year Analysis

Table 10-1 provides the projected water supply from imported water in normal water years (see Chapter 3 for details).

Table 10-1
Projected Normal Water Year Supply

| | Supply (ac-ft/yr) | | | | |
|---|---|---|---|---|---|
| | **2010** | **2015** | **2020** | **2025** | **2030** |
| Total Water Supply | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Percent of Year 2005 | 107 | 110 | 114 | 117 | 120 |

Notes
1. Table format based on DWR Guidance Document Table 40

Table 10-2 provides water demand projections in normal water years (see Chapter 4 for details).

Table 10-2
Summary of Projected Normal Water Year Demands

| | Demand (ac-ft/yr) | | | | |
|---|---|---|---|---|---|
| | **2010** | **2015** | **2020** | **2025** | **2030** |
| Total Water Demand | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Percent of Year 2005 | 107 | 110 | 114 | 117 | 120 |

Notes
1. Table format based on DWR Guidance Document Table 41

Table 10-3 summarizes the service reliability assessment for a normal water year based on water supply and water demand projections. As described in Chapter 3, imported water provided by WBMWD is expected to be 100 percent reliable to meet the projected demands through 2030.

Table 10-3
Comparison of Projected Normal Year Supply and Demand

| | 2010 | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|
| Water Supply Total (ac-ft/yr) | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Water Demand Total (ac-ft/yr) | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Difference (supply minus demand) | 0 | 0 | 0 | 0 | 0 |
| Difference as Percent of Supply | 0 | 0 | 0 | 0 | 0 |
| Difference as Percent of Demand | 0 | 0 | 0 | 0 | 0 |

Notes
1. Table format based on DWR Guidance Document Table 42

# Single Dry-Year Analysis

GSWC and the many regional water agencies (e.g., Metropolitan, WBMWD) have undertaken a number of planning initiatives to ensure supply reliability over a range of hydrologic conditions. These initiatives are discussed in Chapter 3. Together, these initiatives provided a plan to manage the water resources to meet the needs of a growing population even under recurrences of the worst historical hydrologic conditions locally and in the key distant watersheds that supply water to the Culver City System.

Table 10-4 presents projected single-dry year water supplies to meet the projected demands. It is assumed that the single-dry year supplies are the same as those for the normal years because imported water will meet projected demands under all anticipated hydrologic conditions; therefore, the supplies are equal to demand and hydrologic conditions are irrelevant.

Table 10-4
Projected Single-Dry Year Water Supply

| | Supply (ac-ft/yr) | | | | |
|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2030 |
| Water Supply | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Percent of Year 2005 | 107 | 110 | 114 | 117 | 120 |

Notes
1. Table format based on DWR Guidance Document Table 43

Table 10-5 provides projected single-dry year water demand. It is assumed that the single-dry year demands are the same as those water demands projected for the normal years.

Table 10-5
Summary of Projected Single-Dry Year Demands

| | Demand (ac-ft/yr) | | | | |
|---|---|---|---|---|---|
| | **2010** | **2015** | **2020** | **2025** | **2030** |
| Water Demand | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Percent of Year 2005 | 107 | 110 | 114 | 117 | 120 |

Notes
1. Table format based on DWR Guidance Document Table 44

Table 10-6 demonstrates the reliability of water supplies to meet annual water demands for the Culver City System in a single-dry year. WBMWD has determined that they can meet their projected water demands in a single-dry year, so the projected water supplies are equal to the projected demands.

It should be noted the active connection capacity to deliver imported water from WBMWD is significantly higher than the projected imported water supply that is needed to meet these demands.

Table 10-6
Comparison of Projected Supply and Demand for Single Dry Year

| | **2010** | **2015** | **2020** | **2025** | **2030** |
|---|---|---|---|---|---|
| Supply Total (ac-ft/yr) | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Demand Total (ac-ft/yr) | 7,238 | 7,457 | 7,673 | 7,881 | 8,082 |
| Difference (supply minus demand) | 0 | 0 | 0 | 0 | 0 |
| Difference as Percent of Supply | 0 | 0 | 0 | 0 | 0 |
| Difference as Percent of Demand | 0 | 0 | 0 | 0 | 0 |

Notes
1. Table format based on DWR Guidance Document Table 45

# Multiple Dry-Year Analysis

Table 10-7 presents the projected multiple-dry year water supply and demand assessment. It is assumed that the multiple-dry year water supplies are the same as those for the normal years because Metropolitan, through WBMWD, will meet projected imported demands under all anticipated hydrologic conditions. The third year of the multiple-dry year water supply projection represents the end of each 3-year multiple-dry year period as required for the multiple-dry year analysis. WBMWD has determined that they can meet their projected water demands for multiple-dry years, so the water supply is projected to equal the projected demands. It is assumed that the water demand for the preceding two years (of the 3-year multiple-dry year period) will be the same as those in the third year. For example, the

water demand projection for 2010 has been used as the water demands projected in 2009 and 2008.

Table 10-7 demonstrates that the water supplies are sufficient to meet the projected water demand for each multiple-dry year period because WBMWD has determined that they can meet their projected water demands for the multiple-dry year periods (discussed in Chapter 3).

It should be noted that the active connection capacity to deliver imported water is significantly higher than the projected imported water supply that is needed to meet these demands. Therefore, the imported water supply is generally expected to be much greater than the expected projected water demands during multiple-dry years.

In summary, GSWC, Metropolitan and WBMWD have implemented and will implement projects to ensure the imported water demands can be met under normal year, single-dry year, and multiple-dry years.

Table 10-7
Projected Multiple-Dry Year Water Supply and Demand Assessment

| Year | Supply (ac-ft/yr) | Demand (ac-ft/yr) | Difference | Difference as Percent of Supply | Difference as Percent of Demand |
|---|---|---|---|---|---|
| 2006 | | | | | |
| 2007 | | | | | |
| 2008 | 7,238 | 7,238 | 0 | 0 | 0 |
| 2009 | 7,238 | 7,238 | 0 | 0 | 0 |
| 2010 | 7,238 | 7,238 | 0 | 0 | 0 |
| 2011 | | | | | |
| 2012 | | | | | |
| 2013 | 7,457 | 7,457 | 0 | 0 | 0 |
| 2014 | 7,457 | 7,457 | 0 | 0 | 0 |
| 2015 | 7,457 | 7,457 | 0 | 0 | 0 |
| 2016 | | | | | |
| 2017 | | | | | |
| 2018 | 7,673 | 7,673 | 0 | 0 | 0 |
| 2019 | 7,673 | 7,673 | 0 | 0 | 0 |
| 2020 | 7,673 | 7,673 | 0 | 0 | 0 |
| 2021 | | | | | |
| 2022 | | | | | |
| 2023 | 7,881 | 7,881 | 0 | 0 | 0 |
| 2024 | 7,881 | 7,881 | 0 | 0 | 0 |
| 2025 | 7,881 | 7,881 | 0 | 0 | 0 |
| 2026 | | | | | |
| 2027 | | | | | |
| 2028 | 8,082 | 8,082 | 0 | 0 | 0 |
| 2029 | 8,082 | 8,082 | 0 | 0 | 0 |
| 2030 | 8,082 | 8,082 | 0 | 0 | 0 |

Notes
1. This assessment is based on the 3-year multiple-dry year period ending in 2010, 2015, 2020, 2025, and 2030
2. Table format based on DWR Guidance Document Tables 47 through 57

# Chapter 11. References

California Department of Water Resources (DWR). 2005. *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan*. January 18.

California Urban Water Management Council (Council). 2004. *Memorandum of Understanding Regarding Urban Water Conservation in California.* As Amended March 10.

Golden State Water Company (GSWC). 2000. *Culver City System Urban Water Management Plan.*

Metropolitan Water District of Southern California. 2005. *Draft Regional Urban Water Management Plan*. May.

Southern California Association of Governments (SCAG) Projections. 2004. *Growth Forecast.* http://www.scag.ca.gov/rtp2004/2004draft/techappendix/Appendix_A_final.pdf

Southern California Water Company, California. 2005. *Draft Regional Urban Water Management Plan*. April.

West Basin Municipal Water District. 2005. *California Draft Regional Urban Water Management Plan*. June.

# Appendix A
# 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, 2003
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 area wide, regional, watershed, or basin wide 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 that includes each of the following elements that are within the authority of the urban water supplier:
(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.
(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.
(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.
(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
(f) Penalties or charges for excessive use, where applicable.
(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.
(h) A draft water shortage contingency resolution or ordinance.
(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.
10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:
(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
(b) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
(c) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
(d) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(e) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
(f) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.
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 filed its plan with 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 B
# Public Hearing Notice and Meeting Minutes

# Notice of Public Hearing

In conformance with the California Urban Water Management Plan Act, Golden State Water Company (formerly Southern California Water Company) is hosting a public hearing on Wednesday, November 16, at 7:00 p.m. at the Iksan Room, Veterans Memorial Complex, 4117 Overland Avenue, Culver City, to solicit comments on the Urban Water Management Plan (UWMP) for the Culver City Water System. The UWMP is available for pubic review prior to the public hearing and can be reviewed during normal business hours at the Customer Service Office located at 10758 Washington Boulevard, Culver City, CA.

Golden State
Water Company
A Subsidiary of American States Water Company

# AROUND TOWN

## SENIOR IDOL?

### *Karaoke for the 50 Plus Crowd*

Karaoke is not just for kids anymore. In fact, if you're over 50 and you can belt it out, test your skills at the Culver City Senior Center, and see if you've got what it takes to hit the senior circuit. Don't worry. No one throws tomatoes, but I've heard tell you, some of these seniors are pretty good.

Started about 1 years ago, the karaoke program at the senior center has been going strong two days a week. Seniors from a variety of backgrounds regularly get up and swing with the standards, croon with the country, or simply give a hype of rhythm and rhythm. Many of them have secured paying gigs around town, so you know there's talent in the house.

Just because you're retired, doesn't mean you have to give up on the things you love to do, and the energy and enthusiasm exhibited by these singing seniors is inspiring. Many come from stage, church, TV, and radio backgrounds. Some simply started singing in their kitchens and wanted to take their talent to a public forum.

On Tuesdays, lunch is served in the Senior Center dining room for a modest charge for members and slightly more for non-members. The food is prepared so that it meets the senior's nutritional requirements. Servings are ample, and occasionally, fresh fruit and baked goods are up for grabs, provided by local merchants in the community. The quiche is particularly good. The karaoke show takes place during the lunch hour from 11-1 p.m.

On Wednesdays, a similar program is offered from 3-5 p.m., with additional input from dancers, instrumentalists, and an occasional stand up comic. Admission to either event is free.

*For more information:*
*Culver City Senior Center*
*4095 Overland Ave*
*(northwest corner at Culver Blvd.)*
*(310) 253-6700*

## La Dijonaise Cafe

I haven't been to France in a number of years. When I last visited this country, it was on a 3-week journey that also included Ireland, England and Wales. France was and still is in a culinary class all its own. My memories of this trip are still quite poignant, including the champagne factories in Reims, and the mustards of Dijon. These recollections still infuse my senses, so when I found a taste of regional French fare, there are only a few local places I like to go.

Nestled in the hub of downtown Culver City is La Dijonaise Cafe, a delightful French bistro minus the exorbitant prices and stuffy attitude. We chanced upon this rare find while hunting for antiques in the old Helms Bending Area a few years ago, and we've been loyal fans ever since.

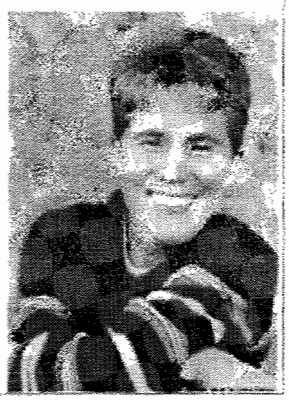
This cafe has gotten very popular so reservations are recommended if you plan to go there after 6:30. Sit down and enjoy the ambiance. The service is amiable, with the servers well versed in the nuances of French cuisine. The portions are ample enough to split, and if you're a modest eater, you might be able to take some home.

Wine connoisseurs will appreciate the variety of wines available. Even the house wine at $4 a glass is a real bargain, and quite flavorful. Traditionalists will savor the steak au poivre vert, glazed in peppery cream sauce, and the tender veal shank, laced in a rice mustard seed sauce. If sweetbreads are on the menu, take advantage of the offering. I'm a sucker for their scallops, which are available every night.

On the lighter side, are a good selection of salads, quiche and crepes. We are partial to their Caesar Salad, but the others are quite good as well. Don't bypass their desserts, which are in full view when you enter the restaurant. Any one of them will make you want to sample the others, but will probably send you to the treadmill the following morning. We love their creme brulee. The atmosphere is warm and inviting, with original artwork throughout the restaurant.

*La Dijonaise*
*8703 Washington Blvd. (in the old Helms Bakery complex)*
*Culver City, CA. 90232*
*(310) 287-2770*
*http://www.ladijonaise.com*

## New Columnist Joins Observer



Mary McGrath joins The Observer this week as our new around town columnist. She replaces Thomas Young and Maureen Tobin, who resigned their Get a Life column for personal reasons.

Ms. McGrath formerly wrote for the Santa Monica Outlook.

**Mary McGrath**

## El Rincon-

### Discount Dining, Cuban Style!

You've seen it. It's that weird palm frond place near Blvd 5 on Sepulveda, slightly south of Culver. Is it bad? Is it a plane? No, it's El Rincon. You may also wonder, "Is it Brazilian? Mexican? Why haven't we ever eaten there?"

El Rincon, in their 35th year, is a refreshing alternative to some of the other Cuban/Spanish establishments that are sprinkled around town. Many of these places often have lines around the block, and because of the crowds, sometimes mediocre service.

El Rincon is a well kept secret and offers ample sizes at very modest prices. I've never neglect a reservation and I can always get a table, which is a blessing when you're familiar.

Pork, beef, chicken and seafood fishes population the menu, with a variety of styles and seasoning available. I've dined at El Rincon a number of times, and have always been pleasantly surprised by their offerings. Most notable is their roasted garlic chicken (pollo asado) a zesty blend of spices often served with rolls, black beans, rice, and those delicious plantains (fried bananas).

Also great are their pork dishes (costillas de puerco) with the pork so succulent, it literally falls apart when you look at it. This is a great place to swap entrees so that you can try a sampling of the many exotic dishes that are available. You'll leave full and satisfied.

Can you believe you can have a dinner with all of these extras for under $10? Seafood dishes are also reasonably priced from $7.25 for the soup and rice (arroz con camarones) up to $15 for the assorted seafood (variedad de mariscos).

A variety of imported beers is also on hand to quench the palate along with wine, a delicious sangria and fruit juices that can be combined. Feeling adventurous? Then check out flavors like mango, papaya, guava, guanabana, mamey, strawberry, pineapple and coconut, all of which complement the cook's array of tastes available at El Rincon.

El Rincon 4361 Sepulveda Blvd. Culver City

*www.bestcubanfood.com*
*(310) 397-9295*
*Take out orders: (310) 391-4478*


Don't let pressure or turmoil be on your holiday list this year. Start this season right by turning your thought to the healing message of the Christ. Hear Christian Science healer and lecturer Tim Myers, C.S., explain how we can find serenity in this lecture entitled:

*Leave Holiday Stress Behind*

You are invited
Sunday, November 6, 3:00 P.M.

Fourteenth Church of Christ, Scientist Reading Room
3380 Motor Avenue Unit A (Chenot Plaza at NE corner at National)
310 202-0020 Free Parking



Notice of Public Hearing

In conformance with the California Urban Water Management Plan Act, Golden State Water Company (formerly Southern California Water Company) is having a public hearing on Wednesday, November 16, at 7:00 p.m. at the Ikeda Room, Veterans Memorial Complex, 4117 Overland Avenue, Culver City, to solicit comments on the Urban Water Management Plan (UWMP) for the Culver City Water System. The UWMP is available for public review prior to the public hearing and can be reviewed during normal business hours at the Customer Service Office located at 10758 Washington Boulevard, Culver City, CA.

Golden State
Water Company

# In One Ear... Chamber Golf Event Delayed

**Jozelle Smith**

**"Called on account of rain"** is the second year in a row that the Culver City Chamber of Commerce Annual Golf Tournament, set for last Tuesday at Robinson Ranch in Santa Clarita. Disappointed golfers are now looking forward to Tuesday, November 8th, which may or may not be a good date for those wanting to exercise their right to vote that day. But here's a another proposition for you: there might be an opening or two due to the date change – if you're interested in playing, give the Chamber a call at (310) 287-3850.

From Eileen Blumin at the Culver City club comes reports of how the Lion's Club International Foundation responded to the victims of Hurricane Katrina, including dispatching a disaster team from Nevada and California clubs that loaded up trucks and motor homes with food, clothing and supplies and set out to Mississippi to set up a central command post at the Gulfport Lions Deaf Center. Quickly realizing that families in need had no way to come to them, the Lions quickly broke up into four-person teams and traveled deep into rural areas to deliver supplies – the first relief personnel the victims reported having seen. The Liberty Lions Club led the charge in Indiana, where many clubs participated in filling a semi-tractor truck with food, clothing, baby supplies and bathroom tissue and had it driven to the Lions' warehouse in Mobile. Lions from District 2-52 in Houston provided vision screenings for 3,000 evacuees at Reliant Center and the Convention Center in Houston. About 2,000 of those screened were fitted with replacement eyeglasses from LensCrafters and Wal-Mart, and the Lions Eye Bank of Texas' trailer is now being used to reach evacuees in other locations throughout the state who may need eyeglasses. More inspiring Lions relief projects will be described in next week's column.

**Guacamole lovers, rejoice!** Culver City Sister City Committee past president Pierre Joujon-Roche points to a recent article in the Los Angeles Times describing the doubling of the number of avocados being exported to the U.S. in the last year. The elimination of trade barriers that has kept the U.S. market off limits to Mexican fruit has resulted in the expansion of Gerardo Perez and Miguel Torres' company, "Senor Avo" to meet the demand. Why are we interested? Their company is located in our sister city of Uruapan, Mexico, and many Sister City Committee members met the "Avocado Kings" on their last visit to Uruapan.

**Birthday wishes go out this week** to Andy Kopulsky, Enid Hallam, Emerson Mohring, Sam Puporny, Darryl Hausemann, Paul Trobisk, Ken Owens, Carl Volpe, Sharon Hyland Elstein, Hank Davies, Belinda Blom, Bobby Oliver, Yolanda Jewell, John Knox, Christian Shaw, Dave Rodriguez, Kathleen Kawakami, Bob Lund, Lily Maldonado, John Gibbs, Alex Chavez, Ralph Carey, Sophie Mesko, Jerry Kleinpenst, Bob Hansen, Phil Perez, Kathy Jo Wheeler, Gay Tuttle, Verle Pribko, and Robert Morris.

**It's not too late to join the Culver-Palms United Methodist Church's "The Lord of the Rings: Exploring a Holy Trilogy" study.** It just finished its second week, and takes place on Sunday evenings at 7:30 p.m. at the church, located at 4484 Sepulveda Boulevard. The group is dedicated to exploring the Christian inspired epic, utilizing both the books and the DVD of director Peter Jackson's award-winning film trilogy. The study is led by Pastor Rich Bolin and Jordan Gunnett, and for more information you can call the church office at (310) 390-7717.

**Don't forget to bring the kids** to the Culver-Palms Family YMCA's "Together Family Fun Night" tomorrow evening from 5:30 – 7:30; it's just the thing to get the little ones gently into the spooky spirit, with mask-making, a "haunted" scavenger hunt, face painting, scary food art, and you can even bring your pumpkin to decorate. The evening is free, and Halloween treats will be available. Give the Y a call to let them know you're coming: (310) 390-3604.

**Coming up soon** (Saturday and Sunday, November 5 and 6 from 9:00 a.m. – 2:00 p.m.) will be St. Augustine Volunteer Emergency Services (S.A.V.E.S.) Annual Holiday Boutique. The event will be held at the Parish Hall, 10143 Washington Blvd. (corner Jasmine) in Culver City, and there will be plenty of free parking in the rear. The proceeds from this event, SAVES' primary fund raiser, will help purchase goods for the anticipated 150 Christ has baskets that will be distributed this year to the needy. Director Sadie Cerda advises us that in addition to the number of gift items for sale, there will be baked goods available for purchase, as well as refreshments and entertainment. (Come on Sunday to hear the group "Shoody", featuring singer-songwriter Karen Hart, who has appeared throughout the U.S., including our own Disney Hall in Los Angeles.)

**Remember to "fall back" at 2:00 a.m. on Sunday, October 30:** it's a good idea to turn all your clocks back one hour just before you go to bed on Saturday night, and then enjoy the extra hour of sleep. Once again Daylight Savings Time ends just in time for the kiddies to go trick or treating. A early evening darkness on Monday, so be sure to drive carefully!


**Flu Vaccinations Are Now Available at**

Brotman Medical Center

Flu Shots Will Be Available on a First Come First Served Basis While Supplies Last

$15 per vaccination
(cash only please)

**Tuesday**
**November 15 & 22**
**8:00 - 11:00 a.m.**

**Brotman Medical Center**
**Cafeteria**
**3828 Delmas Terrace**
**Culver City**

for further information, please call (310) 202-4192


## Notice of Public Hearing

In conformance with the California Urban Water Management Plan Act, Golden State Water Company (formerly Southern California Water Company) is hosting a public hearing on Wednesday, November 16, at 7:00 p.m. at the Ikram Room, Veterans Memorial Complex, 4117 Overland Avenue, Culver City, to solicit comments on the Urban Water Management Plan (UWMP) for the Culver City Water System. The UWMP is available for public review prior to the public hearing and can be reviewed during normal business hours at the Customer Service Office located at 10758 Washington Boulevard, Culver City, CA.

Golden State Water Company

## CERT Training Planned Saturday

The CERT (Community Emergency Response Team) will have its final drill of the year for volunteers in training Saturday.

It will be held from 1:45 p.m. to 4 at the Culver City Fire Department Drill Yard, 9275 Jefferson Blvd.

There will be fire bins, a hazmat events, a medical ops unit and five victims in a burned out three-story concrete building to give Search and Rescue teams a feel for a disaster.

Amateur ham radio members will be shown how to report information.

Golden State Water Company
A Subsidiary of American States Water Company

# PUBLIC HEARING

## Urban Water Management Plan

Wednesday, November 16, 2005
Culver City, CA

| | | | | |
|---|---|---|---|---|
| David | Chang | GSWC | | |
| [illegible] | [illegible] | GSWC | Anaheim | 92801 |
| David | Cottrell | GSWC | Culver City | [illegible] |
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[illegible] allowed the meeting [illegible] at 7:35 pm

No Meeting Minutes were taken since there was no attendance by the public.

# Appendix C
# Public Comments on the Draft UWMP

No Public Comments received during Public Review Period.

# Appendix D
# Economic Analysis of Selected Demand Management Measures

## Region II Customer Service Area
## Table D-1. Assumptions Used for Economic Analysis

**BMP 1 – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers**

**Assumptions:**

1. Survey 15% of single- and multi-family units within 10 years of the date implementation is to commence. Surveys will be conducted according to the following schedule: 1.5% by end of the first reporting period, 3.6% by end of second reporting period, 6.3% by end of third reporting period, 9.6% by end of fourth reporting period, and 15% by end of the fifth reporting period.

MOU, page 16 and page 17 Section E.d.

2. Single-family outdoor water usage = 132 gpd/unit

Single-family water usage was estimated by analyzing 12 months of billing data. The monthly indoor water use is assumed to be equivalent to 60 percent of average monthly water use. Outdoor water is calculated as the difference between annual total use and the assumed annual indoor water use.

3. Multi-family outdoor water usage = 108 gpd/unit

Multi-family water usage was estimated by analyzing 12 months of billing data. The monthly indoor water use is assumed to be equivalent to 70 percent of average monthly water use.

4. Water savings from indoor leak detection, not including toilet leaks = 4.1 gpd per residence

A & N Technical Services report (2003, page 2-38) (12.4 gpd per household repair; 33 percent of households audited have leaks – based on data from GSWC indoor leak detection program).

5. Water surveys decrease outdoor water use by 15%

MOU estimate is 10% (page 18).

6. Each water survey costs $35.

The estimate includes marketing, contract labor, GSWC labor, overhead and materials. It is assumed that this BMP is done in conjunction with BMP2.

7. The life span of a water survey is four years.

A & N Technical Services report (2003, page 2-38) gives life spans for various components of a water survey. Four years selected as a reasonable average value..

8. Water savings from indoor plumbing retrofits are tracked under BMP 2. Only water savings from decrease in outdoor water use and water savings from indoor leak detection are tracked in BMP 1 to avoid double counting of water savings.

9. Energy Savings of $22 per AC-FT of water conserved.

Based on GSWC data.

## Region II Customer Service Area
## Table D-1. Assumptions Used for Economic Analysis

**BMP 2 – Residential Plumbing Retrofit**

**Assumptions:**

1. Plumbing retrofit devices will be installed at a minimum of 10% of residences per reporting period until it can be demonstrated that 75% of pre-1992 single-family residences and 75% of pre-1992 multi-family residences have low flow showerheads (LFSHs).

MOU, page 19.

2. 27% of single-family and 27% of multi-family residences have low-water-use fixtures.

Based on GSWC data

3. Average number of fixtures per residence includes: 1.4 showers, 2.0 toilets, and 3.6 faucets (1 kitchen faucet and 2.6 other faucets).

4. Water savings from one low-flow showerhead = 5.5 gpd

A & N Technical Services report (2003, page 2-38).

5. Water savings from one faucet aerator = 1.5 gpd

A & N Technical Services report (2003, page 2-38).

6. Water savings from one toilet flapper = 8 gpd; assume 20 percent of toilets leak.

A & N Technical Services report (2003, page 2-38).

7. Water savings from kitchen "flip" faucet aerator = 3.0 gpd.

Based on GSWC data.

8. Indoor water savings = 17.8 gpd/unit

We used the following equation to calculate indoor water savings, based on assumptions 4 through 8:

$$(1.4*5.5) + (1.0*3.0) + (2.6*1.5) + (2.0*8*0.20).$$

9. The BMP will cost an average of $48 per residence.

Based on information provided by GSWC.

10. The life span of the retrofit devices is four years.

A & N Technical Services report (2003, page 2-38) gives life spans for a various components of a water survey. Four years selected as a reasonable average value.

11. Base year dwelling units include 73,225 single-family and 56,616 multi-family units

## Region II Customer Service Area
## Table D-1. Assumptions Used for Economic Analysis

**BMP 5 – Large Landscape Conservation Programs and Incentives**

**Assumptions:**

1. Develop Eto-based water use budgets for 90 percent of the CII accounts with dedicated irrigation meters and provide irrigation water use surveys to15 percent of CII accounts with mixed use meters.

MOU (Page 28)

*2.* Base year values include 504 dedicated landscape and 6,621 CII mixed use accounts

*Based on GSWC account summary data.*

*3.* Dedicated landscape accounts are an average size of 1.7 acres

4. CII mixed use account landscape areas are assumed to be an average of 0.1 acre in size

5. Water use prior to the survey is 4.9 ft per year.

Irrigation allocation is equal to 100 percent of local evapotranspiration (ETo), and the MOU estimates that surveys will reduce water usage by 15 percent. Based on California Irrigation Management Information System data.

6. Surveys will reduce water usage by 15%.

MOU, page 30.

7. The life span of the large landscape water surveys is four years.

A & N Technical Services report (2003) gives a life span of four years for turf audits (page 2-34). Water

*surveys for large landscapes are assumed to have a similar life span.*

8. Each survey will cost $425 per acre. Minimum cost is $150 per account.

The estimate includes labor, administration, evaluation and overhead.

## Region II Customer Service Area
## Table D-1. Assumptions Used for Economic Analysis

**BMP 9 – Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts**

**Assumptions:**

*1.* Provide water-use surveys to10% of CII accounts within 10 years of the date implementation is to commence. *MOU, pages 43 and 44.*

2. The life span of a water survey is four years.

The life span for a CII water survey is the same as the life span for a residential survey.

3. The average annual water savings resulting from a commercial and institutional water survey is 0.83 acre-feet per account.

A & N Technical Services report (2003, page 2-51) gives average annual water savings for three types of surveys; “analyst surveys”, “consultant surveys” and “water efficiency studies”. Analyst surveys are conducted by non-engineers, consultant surveys are conducted by engineers for sites that have process water, and water efficiency studies are conducted at major industrial facilities that use very large quantities of water. For purposes of this economic analysis, only analyst surveys will be conducted for commercial and institutional account surveys. Values for water savings in the A & N report represent the maximum potential water savings that could occur if a customer were to implement every possible water conservation measure. Only 25% of the maximum potential water savings is assumed to be realized.

4. The average annual water savings resulting from an industrial water survey is 1.9 acre-feet per account.

For purposes of this economic analysis, consultant surveys will be conducted for industrial account surveys. Values for water savings in the A & N 2003 report represent the maximum potential water savings that could occur if a customer were to implement every possible water conservation measure. Only 25% of the maximum potential water savings is assumed to be realized.

5. Each analyst survey (for commercial and institutional accounts) will cost an average of $600 and each consultant survey (for industrial accounts) will cost an average of $1,500.

A & N Technical Services report (2003, page 2-53).

## Region II Customer Service Area
## Table D-1. Assumptions Used for Economic Analysis

| **BMP 14 – Residential ULFT Replacement Programs** |
|---|
| **Assumptions:**<br>*1.* Water savings from ULFTs are 40.8 gpd/unit for single-family residences and 54.3 gpd/unit for multi-family residences<br>*MOU, Exhibit 6, Table 1 and Table 2.*<br>2. Homes constructed after 1991 already have ULFTs.<br>As of January 1992, California legislation requires that ULFTs be installed in all newly constructed homes.<br>3. Natural toilet replacement rate is 4% per year.<br>MOU, page 79.<br>4. The cost of toilets, advertising, administration, overhead, and toilet recycling is $79 per ULFT. The cost does not include installation, which will be covered by the customer.<br>Based on GSWC cost data. |

Table D-2 Region II Customer Service Area
BMP 1. Water Survey Programs for Single-Family and Multi-Family Customers

| | Water Saving Calculations | | | | | | | | Benefits ($) | | | | | Costs ($) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar Year | Single Family Intervention | Multi-Family Intervention | Percent Units Surveyed | Single-Family Outdoor Savings (ac-ft/yr) | Multi-Family Outdoor Savings (ac-ft/yr) | Total Outdoor Savings (ac-ft/yr) | Total Intdoor Savings (ac-ft/yr) | Annual Water Savings | Avoided Capital Costs | Avoided Variable Costs | Avoided Purchase Costs | Total Undiscounted Benefits | Total Discounted Benefits | Capital Costs | Financial Incentives | Operating Expenses | Total Undiscounted Costs | Total Discounted Costs | New present Value |
| Pre 2005 | 10,960 | 0 | 8.1% | | | | | 0.0 | | | | | | | | | | | |
| 2006 | 326 | 4,373 | 3.5% | 7.2 | 79.34 | 86.6 | 21.6 | 108.1 | $0 | $2,379 | $59,039 | $61,418 | $61,418 | $0 | $0 | $164,440 | $164,440 | $164,440 | -$103,022 |
| 2007 | 326 | 4,373 | 3.5% | 7.2 | 79.34 | 86.6 | 21.6 | 216.3 | $0 | $4,758 | $118,079 | $122,836 | $115,112 | $0 | $0 | $164,440 | $164,440 | $154,100 | -$38,988 |
| 2008 | | | | | | | | 216.3 | $0 | $4,758 | $118,079 | $122,836 | $107,874 | $0 | | | | | $107,874 |
| 2009 | | | | | | | | 216.3 | $0 | $4,758 | $118,079 | $122,836 | $101,091 | $0 | | | | | $101,091 |
| 2010 | | | | | | | | 108.1 | $0 | $2,379 | $59,039 | $61,418 | $47,367 | $0 | | | | | $47,367 |
| 2011 | | | | | | | | | | | | | | | | | | | |
| 2012 | | | | | | | | | | | | | | | | | | | |
| 2013 | | | | | | | | | | | | | | | | | | | |
| 2014 | | | | | | | | | | | | | | | | | | | |
| 2015 | | | | | | | | | | | | | | | | | | | |
| 2016 | | | | | | | | | | | | | | | | | | | |
| 2017 | | | | | | | | | | | | | | | | | | | |
| 2018 | | | | | | | | | | | | | | | | | | | |
| 2019 | | | | | | | | | | | | | | | | | | | |
| 2020 | | | | | | | | | | | | | | | | | | | |
| 2021 | | | | | | | | | | | | | | | | | | | |
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| 2026 | | | | | | | | | | | | | | | | | | | |
| 2027 | | | | | | | | | | | | | | | | | | | |
| 2028 | | | | | | | | | | | | | | | | | | | |
| 2029 | | | | | | | | | | | | | | | | | | | |
| 2030 | | | | | | | | | | | | | | | | | | | |
| Totals | 11,612 | 8,745 | 15% | 14 | 159 | 173 | 43 | 865 | $0 | $19,031 | $472,314 | $491,345 | $432,862 | $0 | $0 | $328,880 | $328,880 | $318,540 | $114,322 |

Credit Table for Previously Performed Surveys

| Year | Single Family Units Surveyed | Multi-Family Units Surveyed | % Credit | Single Family Credits | Multi-Family Credits |
|---|---|---|---|---|---|
| Pre-1990 | | | 0.0% | 0 | 0 |
| 1990 | | | 12.5% | 0 | 0 |
| 1991 | | | 25.0% | 0 | 0 |
| 1992 | | | 37.5% | 0 | 0 |
| 1993 | | | 50.0% | 0 | 0 |
| 1994 | | | 62.5% | 0 | 0 |
| 1995 | | | 75.0% | 0 | 0 |
| 1996 | 2389 | | 87.5% | 2090 | 0 |
| 1997 | | | 100.0% | 0 | 0 |
| 1998-2004 | 8870 | 0 | 100.0% | 8870 | 0 |
| Total | 11259 | 0 | | 10960 | 0 |

| | |
|---|---|
| Value of conserved water ($/ac-ft) = | 546 |
| Discount rate (real) = | 6.71% |
| Indoor water savings (gpd/unit) = | 4.1 |
| Outdoor water savings = | 15% |
| Single family outdoor water usage (gpd/unit) = | 132 |
| Multi-family outdoor water usage (gpd/unit) = | 108 |
| Conservation measure unit cost ($) = | 35 |
| 1997 Single family units = | 77,410 |
| 1997 Multi-family units = | 58,303 |
| Life span of water survey (years) = | 4 |
| Energy savings ($/ac-ft) = | 22 |

| | |
|---|---|
| Benefit cost ratio = | 1.4 |
| Simple pay-back period (years) = | 4 |
| Discounted cost/water saved ($acre-feet) = | 368 |
| NPV/ water saved (acre-feet) = | 132 |

Table D-2 Region II Customer Service Area
BMP 2. Residential Plumbing Retrofit

| | Water Saving Calculations | | | | | | Benefits ($) | | | | | Costs ($) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar Year | Single-Family Intervention | Multi-Family Intervention | Percent Units Surveyed Single-Family | Percent Units Surveyed Multi-Family | Incremental Water Savings (ac-ft/yr) | Annual Water Savings | Avoided Capital Costs | Avoided Variable Costs | Avoided Purchase Costs | Total Undiscounted Benefits | Total Discounted Benefits | Capital Costs | Financial Incentives | Operating Expenses | Total Undiscounted Costs | Total Discounted Costs | New present Value |
| Pre 2005 | | | 27% | 27% | | | | | | | | | | | | | |
| 2006 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 129.4 | $0 | $2,847 | $70,665 | $73,512 | $73,512 | $0 | $0 | $311,618 | $311,618 | $311,618 | -$238,106 |
| 2007 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 258.8 | $0 | $5,695 | $141,330 | $147,024 | $137,779 | $0 | $0 | $311,618 | $311,618 | $292,024 | -$154,244 |
| 2008 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 388.3 | $0 | $8,542 | $211,994 | $220,536 | $193,673 | $0 | $0 | $311,618 | $311,618 | $273,661 | -$79,988 |
| 2009 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 517.7 | $0 | $11,389 | $282,659 | $294,048 | $241,993 | $0 | $0 | $311,618 | $311,618 | $256,453 | -$14,460 |
| 2010 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 517.7 | $0 | $11,389 | $282,659 | $294,048 | $226,777 | $0 | $0 | $311,618 | $311,618 | $240,327 | -$13,550 |
| 2011 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 517.7 | $0 | $11,389 | $282,659 | $294,048 | $212,517 | $0 | $0 | $311,618 | $311,618 | $225,215 | -$12,698 |
| 2012 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 517.7 | $0 | $11,389 | $282,659 | $294,048 | $199,154 | $0 | $0 | $311,618 | $311,618 | $211,053 | -$11,900 |
| 2013 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 517.7 | $0 | $11,389 | $282,659 | $294,048 | $186,631 | $0 | $0 | $311,618 | $311,618 | $197,782 | -$11,152 |
| 2014 | 3661 | 2831 | 5.0% | 5.0% | 129.4 | 517.7 | $0 | $11,389 | $282,659 | $294,048 | $174,895 | $0 | $0 | $311,618 | $311,618 | $185,346 | -$10,450 |
| 2015 | 2197 | 1698 | 3.0% | 3.0% | 77.7 | 465.9 | $0 | $10,250 | $254,393 | $264,643 | $147,508 | $0 | $0 | $186,971 | $186,971 | $104,215 | $43,293 |
| 2016 | | | | | | 336.5 | $0 | $7,403 | $183,728 | $191,131 | $99,835 | $0 | $0 | $0 | $0 | $0 | $99,835 |
| 2017 | | | | | | 207.1 | $0 | $4,556 | $113,064 | $117,619 | $57,573 | $0 | $0 | $0 | $0 | $0 | $57,573 |
| 2018 | | | | | | 77.7 | $0 | $1,708 | $42,399 | $44,107 | $20,232 | $0 | $0 | $0 | $0 | $0 | $20,232 |
| 2019 | | | | | | | | | | | | | | | | | |
| 2020 | | | | | | | | | | | | | | | | | |
| 2021 | | | | | | | | | | | | | | | | | |
| 2022 | | | | | | | | | | | | | | | | | |
| 2023 | | | | | | | | | | | | | | | | | |
| 2024 | | | | | | | | | | | | | | | | | |
| 2025 | | | | | | | | | | | | | | | | | |
| 2026 | | | | | | | | | | | | | | | | | |
| 2027 | | | | | | | | | | | | | | | | | |
| 2028 | | | | | | | | | | | | | | | | | |
| 2029 | | | | | | | | | | | | | | | | | |
| 2030 | | | | | | | | | | | | | | | | | |
| Totals | 35148 | 27176 | 75% | 75% | 1,242 | 4,970 | $0 | $109,336 | $2,713,528 | $2,822,864 | $1,972,079 | $0 | $0 | $2,991,537 | $2,991,537 | $2,297,694 | -$325,615 |

| Percent of Residences Having Low-Water-Use Fixtures | | |
|---|---|---|
| Year | Single-Family | Multi-Family |
| Pre-2005 | 27% | 27% |
| Annual Replacement | | |
| 2006 | 5% | 5% |
| 2007 | 5% | 5% |
| 2008 | 5% | 5% |
| 2009 | 5% | 5% |
| 2010 | 5% | 5% |
| 2011 | 5% | 5% |
| 2012 | 5% | 5% |
| 2013 | 5% | 5% |
| 2014 | 5% | 5% |
| 2015 | 3% | 3% |
| 2016 | 0% | 0% |

| | |
|---|---|
| Value of conserved water ($/ac-ft) = | 546 |
| Discount rate (real) = | 6.71% |
| Water savings (gpd/unit) = | 17.8 |
| Conservation measure unit cost ($) = | 48 |
| Percent units receiving retrofits = | 5% |
| 1991 Single family units = | 73,225 |
| 1991 Multi-family units = | 56,616 |
| Life span of retrofit devices (years) = | 4 |
| Energy savings ($/ac-ft) = | 22 |

| | |
|---|---|
| Benefit cost ratio = | 0.9 |
| Simple pay-back period (years) = | 15 |
| Discounted cost/water saved ($acre-feet) = | 462 |
| NPV/ water saved (acre-feet) = | -66 |

Table D-2 Region II Customer Service Area
BMP 3. System Water Audits, Leak Detection, and Repair

| | Water Savings | | Benefits ($) | | | | | Costs ($) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar Year | Length of Pipe Surveyed (miles) | Annual Water Savings | Avoided Capital Costs | Avoided Variable Costs | Avoided Purchase Costs | Total Undiscounted Benefits | Total Discounted Benefits | Capital Costs | Financial Incentives | Operating Expenses | Total Undiscounted Costs | Total Discounted Costs | New present Value |
| Pre 1998 | | | | | | | | | | | | | |
| 2006 | 32.3 | 19.4 | $0 | $1,628 | $10,581 | $12,209 | $12,209 | $0 | $0 | $32,300 | $32,300 | $32,300 | -$20,091 |
| 2007 | 32.3 | 38.8 | $0 | $3,256 | $21,163 | $24,419 | $22,883 | $0 | $0 | $32,300 | $32,300 | $30,269 | -$7,386 |
| 2008 | 32.3 | 58.1 | $0 | $4,884 | $31,744 | $36,628 | $32,167 | $0 | $0 | $32,300 | $32,300 | $28,366 | $3,801 |
| 2009 | 32.3 | 77.5 | $0 | $6,512 | $42,326 | $48,838 | $40,192 | $0 | $0 | $32,300 | $32,300 | $26,582 | $13,610 |
| 2010 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $47,081 | $0 | $0 | $32,300 | $32,300 | $24,910 | $22,170 |
| 2011 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $44,120 | $0 | $0 | $32,300 | $32,300 | $23,344 | $20,776 |
| 2012 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $41,346 | $0 | $0 | $32,300 | $32,300 | $21,876 | $19,470 |
| 2013 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $38,746 | $0 | $0 | $32,300 | $32,300 | $20,501 | $18,246 |
| 2014 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $36,310 | $0 | $0 | $32,300 | $32,300 | $19,212 | $17,098 |
| 2015 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $34,027 | $0 | $0 | $32,300 | $32,300 | $18,003 | $16,023 |
| 2016 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $31,887 | $0 | $0 | $32,300 | $32,300 | $16,871 | $15,016 |
| 2017 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $29,882 | $0 | $0 | $32,300 | $32,300 | $15,811 | $14,071 |
| 2018 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $28,003 | $0 | $0 | $32,300 | $32,300 | $14,816 | $13,187 |
| 2019 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $26,242 | $0 | $0 | $32,300 | $32,300 | $13,885 | $12,357 |
| 2020 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $24,592 | $0 | $0 | $32,300 | $32,300 | $13,012 | $11,580 |
| 2021 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $23,046 | $0 | $0 | $32,300 | $32,300 | $12,193 | $10,852 |
| 2022 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $21,596 | $0 | $0 | $32,300 | $32,300 | $11,427 | $10,170 |
| 2023 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $20,238 | $0 | $0 | $32,300 | $32,300 | $10,708 | $9,530 |
| 2024 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $18,966 | $0 | $0 | $32,300 | $32,300 | $10,035 | $8,931 |
| 2025 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $17,773 | $0 | $0 | $32,300 | $32,300 | $9,404 | $8,369 |
| 2026 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $16,656 | $0 | $0 | $32,300 | $32,300 | $8,813 | $7,843 |
| 2027 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $15,608 | $0 | $0 | $32,300 | $32,300 | $8,258 | $7,350 |
| 2028 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $14,627 | $0 | $0 | $32,300 | $32,300 | $7,739 | $6,888 |
| 2029 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $13,707 | $0 | $0 | $32,300 | $32,300 | $7,252 | $6,455 |
| 2030 | 32.3 | 96.9 | $0 | $8,140 | $52,907 | $61,047 | $12,845 | $0 | $0 | $32,300 | $32,300 | $6,796 | $6,049 |
| Totals | 808 | 2,229 | $0 | $187,211 | $1,216,870 | $1,404,081 | $664,749 | $0 | $0 | $807,500 | $807,500 | $412,383 | $252,366 |

| | |
|---|---|
| Value of conserved water ($/ac-ft) = | 546 |
| Discount rate (real) = | 6.71% |
| Annual water savings (ac-ft/mile) = | 0.6 |
| Conservation measue unit cost ($) = | 1000 |
| Percent of pipe surveyed = | 20% |
| Total length of pipe in system (miles) = | 161.5 |
| Life span of leak repairs (years) = | 5 |
| Energy savings ($/ac-ft) = | 84 |

| | |
|---|---|
| Benefit cost ratio = | 1.6 |
| Simple pay-back period (years) = | 8 |
| Discounted cost/water saved ($acre-feet) = | 185 |
| NPV/ water saved (acre-feet) = | 113 |

Table D-2 Region II Customer Service Area
BMP 5. Large Landscape Conservation Programs and Incentives

| | Water Saving Calculations | | | | | | Benefits | | | | | Costs | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar Year | CII Accounts w/Dedicated Irr. Meters Interventions | CII Accounts w/Mixed Use Meters Offered Surveys | CII Accounts w/Mixed Use Meters % Surveyed | CII Accounts w/Mixed Use Meters Interventions | Incremental Water Savings (ac-ft/Yr) | Cumulative Water Savings (ac-ft/Yr) | Avoided Capital Costs | Avoided Variable Costs | Avoided Purchase Costs | Total Undiscounted Benefits | Total Discounted Benefits | Capital Costs | Financial Incentives | Operating Expenses | Total Undiscounted Costs | Total Discounted Costs | Net Present Value |
| | | 153 | 2.31% | 1 | | | | | | | | | | | | | |
| 2005 | 0 | 0 | 0.00% | 0 | 0 | 0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| 2006 | 227 | 662 | 3.64% | 241 | 301 | 301 | $0 | $6,625 | $164,413 | $171,038 | $160,283 | $0 | $0 | $200,059 | $200,059 | $187,479 | -$27,197 |
| 2007 | 227 | 662 | 3.64% | 241 | 301 | 602 | $0 | $13,249 | $328,826 | $342,075 | $300,408 | $0 | $0 | $200,059 | $200,059 | $175,691 | $124,718 |
| 2008 | 0 | 662 | 1.95% | 129 | 9 | 612 | $0 | $13,458 | $334,007 | $347,465 | $285,954 | $0 | $0 | $19,366 | $19,366 | $15,938 | $270,016 |
| 2009 | 0 | 662 | 1.95% | 129 | 9 | 621 | $0 | $13,667 | $339,189 | $352,856 | $272,130 | $0 | $0 | $19,366 | $19,366 | $14,936 | $257,194 |
| 2010 | | 662 | 0.75% | 50 | 4 | 324 | $0 | $7,123 | $176,768 | $183,891 | $132,903 | $0 | $0 | $7,449 | $7,449 | $5,383 | $127,520 |
| 2011 | | 662 | 0.75% | 50 | 4 | 26 | $0 | $578 | $14,348 | $14,926 | $10,109 | $0 | $0 | $7,449 | $7,449 | $5,045 | $5,065 |
| 2012 | | 662 | 0.00% | 0 | 0 | 17 | $0 | $369 | $9,167 | $9,536 | $6,053 | $0 | $0 | $0 | $0 | $0 | $6,053 |
| 2013 | | 662 | 0.00% | 0 | 0 | 7 | $0 | $161 | $3,986 | $4,146 | $2,466 | $0 | $0 | $0 | $0 | $0 | $2,466 |
| 2014 | | 662 | 0.00% | 0 | 0 | 4 | $0 | $80 | $1,993 | $2,073 | $1,156 | $0 | $0 | $0 | $0 | $0 | $1,156 |
| 2015 | | | | | | | | | | | | | | | | | |
| 2016 | | | | | | | | | | | | | | | | | |
| 2017 | | | | | | | | | | | | | | | | | |
| 2018 | | | | | | | | | | | | | | | | | |
| 2019 | | | | | | | | | | | | | | | | | |
| 2020 | | | | | | | | | | | | | | | | | |
| 2021 | | | | | | | | | | | | | | | | | |
| 2022 | | | | | | | | | | | | | | | | | |
| 2023 | | | | | | | | | | | | | | | | | |
| 2024 | | | | | | | | | | | | | | | | | |
| 2025 | | | | | | | | | | | | | | | | | |
| 2026 | | | | | | | | | | | | | | | | | |
| 2027 | | | | | | | | | | | | | | | | | |
| 2028 | | | | | | | | | | | | | | | | | |
| 2029 | | | | | | | | | | | | | | | | | |
| 2030 | | | | | | | | | | | | | | | | | |
| **Totals:** | 454 | 6112 | 15% | 841 | 629 | 2514 | $0 | $55,310 | $1,372,697 | $1,428,007 | $1,171,462 | $0 | $0 | $453,749 | $453,749 | $404,472 | $766,990 |

Credit Table for Prevoiusly Performed Surveys

| Year | # of Surveys | % Credit | Credits |
|---|---|---|---|
| Prior to 7/1/96 with follow up inspection | | 100% | 0 |
| Prior to 7/1/96 without follow up inspection | | 50% | 0 |
| After 7/1/96 | 153 | 100% | 153 |
| TOTAL | | | 153 |

| | |
|---|---|
| Value of Conserved Water ($/ac-ft) = | $546 |
| Discount Rate (Real) = | 6.71% |
| Acres/CII accounts with dedicated irrigation meters = | 1.7 |
| Acres/CII accounts with mixed use meters = | 0.1 |
| Annual water use (ac-ft/acre) = | 4.9 |
| Water Savings = | 15% |
| Conservation Measure Unit Cost ($/Acre) = | $425 |
| Minimum Conservation Measure Unit Cost ($/Account) = | $150 |
| Number of CII accounts with dedicated irrigation meters in 1997 = | 504 |
| Number of CII accounts with mixed use meters in 1997 = | 6621 |
| Lifespan of Benefit (Years) = | 4 |
| Energy savings ($/ac-ft) = | 22 |

| | |
|---|---|
| Benefit Cost Ratio: | 2.9 |
| Simple Pay-Back Period (years): | 3.1 |
| Discounted Cost / Water Saved ($/ac-ft): | $161 |
| NPV / Water Saved ($/ac-ft): | $305 |

Table D-2 Region II Customer Service Area
BMP 9. Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts

| | | | | | | | Benefits ($) | | | | | Costs ($) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar Year | Percent Surveyed | Commercial Interventions | Industrial Interventions | Institutional Interventions | Incremental Savings (Surveys) (ac-ft/yr) | Annual Savings Total (ac-ft/yr) | Avoided Capital Costs | Avoided Variable Costs | Avoided Purchase Costs | Total Undiscounted Benefits | Total Discounted Benefits | Capital Costs | Financial Incentives | Operating Expenses | Total Undiscounted Costs | Total Discounted Costs | Net Present Value |
| Pre 1998 | | 4 | 3 | 4 | | | | | | | | | | | | | |
| 2006 | 5.00% | 158.4 | 111.75 | 55.4 | 412.1 | 412.1 | $0 | $9,067 | $225,022 | $234,089 | $234,089 | $0 | $0 | $295,905 | $295,905 | $295,905 | -$61,816 |
| 2007 | 5.00% | 158.4 | 111.75 | 55.4 | 412.1 | 824.3 | $0 | $18,134 | $450,045 | $468,179 | $438,739 | $0 | $0 | $295,905 | $295,905 | $277,298 | $161,441 |
| 2008 | | | | | | 824.3 | $0 | $18,134 | $450,045 | $468,179 | $411,151 | $0 | $0 | $0 | $0 | $0 | $411,151 |
| 2009 | | | | | | 824.3 | $0 | $18,134 | $450,045 | $468,179 | $385,297 | $0 | $0 | $0 | $0 | $0 | $385,297 |
| 2010 | | | | | | 412.1 | $0 | $9,067 | $225,022 | $234,089 | $180,535 | $0 | $0 | $0 | $0 | $0 | $180,535 |
| 2011 | | | | | | | | | | | | | | | | | |
| 2012 | | | | | | | | | | | | | | | | | |
| 2013 | | | | | | | | | | | | | | | | | |
| 2014 | | | | | | | | | | | | | | | | | |
| 2015 | | | | | | | | | | | | | | | | | |
| 2016 | | | | | | | | | | | | | | | | | |
| 2017 | | | | | | | | | | | | | | | | | |
| 2018 | | | | | | | | | | | | | | | | | |
| 2019 | | | | | | | | | | | | | | | | | |
| 2020 | | | | | | | | | | | | | | | | | |
| 2021 | | | | | | | | | | | | | | | | | |
| 2022 | | | | | | | | | | | | | | | | | |
| 2023 | | | | | | | | | | | | | | | | | |
| 2024 | | | | | | | | | | | | | | | | | |
| 2025 | | | | | | | | | | | | | | | | | |
| 2026 | | | | | | | | | | | | | | | | | |
| 2027 | | | | | | | | | | | | | | | | | |
| 2028 | | | | | | | | | | | | | | | | | |
| 2029 | | | | | | | | | | | | | | | | | |
| 2030 | | | | | | | | | | | | | | | | | |
| Totals | 10% | 321 | 227 | 115 | 824 | 3,297 | $0 | $72,535 | $1,800,179 | $1,872,714 | $1,649,812 | $0 | $0 | $591,810 | $591,810 | $573,203 | $1,076,608 |

Credit for Previously Completed Surveys

| | Commercial | Industrial | Institutional |
|---|---|---|---|
| Total | 4 | 3 | 4 |

| | |
|---|---|
| Value of conserved water ($/ac-ft) = | 546 |
| Discount rate (real) = | 6.71% |
| Annual survey - Annual water savings (ac-ft/unit) = | 0.83 |
| Annual survey - Conservation measure unit cost ($) = | 600 |
| Consultant survey - Annual water savings (ac-ft/unit) = | 2.1 |
| Consultant survey - Conservation measure unit cost ($) = | 1,500 |
| Number of commrcial accounts in 1997 = | 3,208 |
| Number of industrial accounts in 1997 = | 2,265 |
| Number of institutional accounts in 1997 = | 1,148 |
| Percent units surveyed = | 10% |
| Life span of water survey (years) = | 4 |
| Energy savings ($/ac-ft) = | 22 |

| | |
|---|---|
| Benefit cost ratio = | 2.88 |
| Simple pay-back period (years) = | 2 |
| Discounted cost/water saved ($acre-feet) = | 174 |
| NPV/ water saved (acre-feet) = | 327 |

Table D-2 Region II Customer Service Area
BMP 14. Residential ULFT Replacement Programs (page 1 of 3)

| | Determination of Water Conservation Goal: Single-Family Units | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar Year | Single-Family Units | SF Units Naturally Retrofited | SF Toilets Naturally Retrofited | Water Savings from Natural Replacement SF (ac-ft/yr) | Single-Family Units | Single-Family Retrofitted | Single-Family Turnover | Combined SF Homes Retrofitted | Combined SF Toilets Retrofitted | Water Savings from Natural Replacement and Turnover SF (ac-ft/yr) | Water Savings from Natural Turnover SF (ac-ft/yr) |
| 1998 | 67569 | 0 | 0 | 0 | 67569 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 64867 | 2703 | 5135 | 124 | 61826 | 2703 | 3,041 | 5743 | 10,912 | 262.4 | 139 |
| 2000 | 62272 | 2595 | 4930 | 119 | 56571 | 2473 | 2,782 | 5255 | 9,985 | 240.1 | 122 |
| 2001 | 59781 | 2491 | 4733 | 114 | 51762 | 2263 | 2,546 | 4809 | 9,136 | 219.7 | 106 |
| 2002 | 57390 | 2391 | 4543 | 109 | 47362 | 2070 | 2,329 | 4400 | 8,360 | 201.0 | 92 |
| 2003 | 55094 | 2296 | 4362 | 105 | 43337 | 1894 | 2,131 | 4026 | 7,649 | 184.0 | 79 |
| 2004 | 52890 | 2204 | 4187 | 101 | 39653 | 1733 | 1,950 | 3684 | 6,999 | 168.3 | 68 |
| 2005 | 50775 | 2116 | 4020 | 97 | 36283 | 1586 | 1,784 | 3371 | 6,404 | 154.0 | 57 |
| 2006 | 48744 | 2031 | 3859 | 93 | 33199 | 1451 | 1,633 | 3084 | 5,860 | 140.9 | 48 |
| 2007 | 46794 | 1950 | 3705 | 89 | 30377 | 1328 | 1,494 | 2822 | 5,362 | 128.9 | 40 |
| 2008 | 44922 | 1872 | 3556 | 86 | 27795 | 1215 | 1,367 | 2582 | 4,906 | 118.0 | 32 |
| 2009 | 43125 | 1797 | 3414 | 82 | 25432 | 1112 | 1,251 | 2363 | 4,489 | 108.0 | 26 |
| 2010 | 41400 | 1725 | 3278 | 79 | 23270 | 1017 | 1,144 | 2162 | 4,107 | 98.8 | 20 |
| 2011 | 39744 | 1656 | 3146 | 76 | 21292 | 931 | 1,047 | 1978 | 3,758 | 90.4 | 15 |
| 2012 | 38155 | 1590 | 3021 | 73 | 19483 | 852 | 958 | 1810 | 3,439 | 82.7 | 10 |
| 2013 | 36628 | 1526 | 2900 | 70 | 17827 | 779 | 877 | 1656 | 3,146 | 75.7 | 6 |
| 2014 | 35163 | 1465 | 2784 | 67 | 16311 | 713 | 802 | 1515 | 2,879 | 69.2 | 2 |
| 2015 | 33757 | 1407 | 2672 | 64 | 14925 | 652 | 734 | 1386 | 2,634 | 63.4 | 0 |
| 2016 | 32407 | 1350 | 2566 | 62 | 13656 | 597 | 672 | 1269 | 2,410 | 58.0 | 0 |
| 2017 | 31110 | 1296 | 2463 | 59 | 12495 | 546 | 615 | 1161 | 2,205 | 53.0 | 0 |
| 2018 | 29866 | 1244 | 2364 | 57 | 11433 | 500 | 562 | 1062 | 2,018 | 48.5 | 0 |
| 2019 | 28671 | 1195 | 2270 | 55 | 10461 | 457 | 514 | 972 | 1,846 | 44.4 | 0 |
| Totals | | 38,898 | 73,907 | 1,777 | | 26,874 | | 57,108 | 108,505 | 2,610 | 861 |

| Credit Table for Previously Installed ULFT | | | | |
|---|---|---|---|---|
| Year | Single Family | Multi-family | Incremental Total Water Savings (ac-ft/Yr) | Cumulative Total Water Savings (ac-ft/Yr) |
| 1991 | 439 | 1283 | 63 | 63 |
| 1992 | 439 | 1283 | 63 | 125 |
| 1993 | 439 | 1283 | 63 | 188 |
| 1994 | 439 | 1283 | 63 | 250 |
| 1995 | | | | 250 |
| 1996 | | | | 250 |
| 1997 | | | | 250 |
| 1998 | | | | 250 |
| 1999 | 7030 | 4103 | 335 | 586 |
| 2000 | 7378 | 471 | 197 | 782 |
| 2001 | 2472 | 94 | 63 | 846 |
| 2002 | | | 0 | 846 |
| 2003 | | | 0 | 846 |
| 2004 | | | 0 | 846 |
| Total | 18636 | 9800 | 846 | 6378 |

Table D-2 Region II Customer Service Area
BMP 14. Residential ULFT Replacement Program (page 2 of 3)

| | Determination of Water Conservation Goal: Multi-Family Units | | | | | | | | | | | Conservation Goal - Combined | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar Year | Multi-Family Units | MF Units Naturally Retrofited | MF Toilets Naturally Retrofited | Water Savings from Natural Replacement MF (ac-ft/yr) | Multi-Family Units | MF Units Naturally Retrofited | Multi-Family Turnover | Combined MF Homes Retrofitted | Combined MF Toilets Retrofitted | Water Savings from Natural Replacement and Turnover | Water Savings from Natural Turnover MF (ac-ft/yr) | Annual Water Savings fromTurnover (ac-ft/yr) | Cummulative Water Savings fromTurnover (ac-ft/yr) |
| 1998 | 42544 | 0 | 0 | 0 | 42544 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 40842 | 1702 | 2553 | 103 | 37013 | 1702 | 3,829 | 5531 | 8,296 | 336.3 | 233 | 372 | 372 |
| 2000 | 39209 | 1634 | 2451 | 99 | 32202 | 1481 | 3,331 | 4812 | 7,218 | 292.6 | 193 | 687 | 1058 |
| 2001 | 37640 | 1568 | 2353 | 95 | 28015 | 1288 | 2,898 | 4186 | 6,279 | 254.6 | 159 | 952 | 2010 |
| 2002 | 36135 | 1506 | 2258 | 92 | 24373 | 1121 | 2,521 | 3642 | 5,463 | 221.5 | 130 | 1173 | 3184 |
| 2003 | 34689 | 1445 | 2168 | 88 | 21205 | 975 | 2,194 | 3169 | 4,753 | 192.7 | 105 | 1357 | 4541 |
| 2004 | 33302 | 1388 | 2081 | 84 | 18448 | 848 | 1,908 | 2757 | 4,135 | 167.6 | 83 | 1508 | 6049 |
| 2005 | 31970 | 1332 | 1998 | 81 | 16050 | 738 | 1,660 | 2398 | 3,597 | 145.8 | 65 | 1630 | 7680 |
| 2006 | 30691 | 1279 | 1918 | 78 | 13963 | 642 | 1,444 | 2086 | 3,130 | 126.9 | 49 | 1728 | 9407 |
| 2007 | 29463 | 1228 | 1841 | 75 | 12148 | 559 | 1,257 | 1815 | 2,723 | 110.4 | 36 | 1803 | 11210 |
| 2008 | 28285 | 1179 | 1768 | 72 | 10569 | 486 | 1,093 | 1579 | 2,369 | 96.0 | 24 | 1860 | 13070 |
| 2009 | 27153 | 1131 | 1697 | 69 | 9195 | 423 | 951 | 1374 | 2,061 | 83.6 | 15 | 1901 | 14971 |
| 2010 | 26067 | 1086 | 1629 | 66 | 8000 | 368 | 828 | 1195 | 1,793 | 72.7 | 7 | 1927 | 16898 |
| 2011 | 25024 | 1043 | 1564 | 63 | 6960 | 320 | 720 | 1040 | 1,560 | 63.2 | 0 | 1942 | 18840 |
| 2012 | 24023 | 1001 | 1501 | 61 | 6055 | 278 | 626 | 905 | 1,357 | 55.0 | 0 | 1952 | 20792 |
| 2013 | 23062 | 961 | 1441 | 58 | 5268 | 242 | 545 | 787 | 1,181 | 47.9 | 0 | 1958 | 22750 |
| 2014 | 22140 | 922 | 1384 | 56 | 4583 | 211 | 474 | 685 | 1,027 | 41.6 | 0 | 1960 | 24710 |
| 2015 | 21254 | 886 | 1328 | 54 | 3987 | 183 | 412 | 596 | 894 | 36.2 | 0 | 1960 | 26670 |
| 2016 | 20404 | 850 | 1275 | 52 | 3469 | 159 | 359 | 518 | 777 | 31.5 | 0 | 1960 | 28631 |
| 2017 | 19588 | 816 | 1224 | 50 | 3018 | 139 | 312 | 451 | 676 | 27.4 | 0 | 1960 | 30591 |
| 2018 | 18805 | 784 | 1175 | 48 | 2626 | 121 | 272 | 392 | 588 | 23.9 | 0 | 1960 | 32551 |
| 2019 | 18052 | 752 | 1128 | 46 | 2284 | 105 | 236 | 341 | 512 | 20.8 | 0 | 1960 | 34511 |
| Totals | 630,342 | 24492 | 36737 | 1489.4 | | 12,388 | | 40,260 | 60,390 | 2,448 | 1,098.8 | 34,511 | 330,498 |

Table D-2 Region II Customer Service Area
BMP 14. Residential ULFT Replacement Programs (page 3 of 3)

| | Water Savings | | | | | | | Benefits ($) | | | | | Costs ($) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar Year | No. of SF Toilets Required to be Replaced | Incremental Water Savings SF (ac-ft/yr) | No. of MF Toilets Required to be Replaced | Incremental Water Savings (ac-ft/yr) | Annual Water Savings (ac-ft/yr) | Incremental Total Water Savings (ac-ft/Yr) | Cumulative Total Water Savings (ac-ft/Yr) | Avoided Capital Costs | Avoided Variable Costs | Avoided Purchase Costs | Total Undiscounted Benefits | Total Discounted Benefits | Capital Costs | Financial Incentives | Operating Expenses | Total Undiscounted Costs | Total Discounted Costs | Net Present Value |
| Pre 2005 | 18636 | 448 | 9800 | 397 | 846 | 846 | 6378 | 0 | 140,324 | 3,482,598 | 3,622,923 | 3,622,923 | 0 | 0 | 2,246,444 | 2,246,444 | 2,246,444 | 1,376,479 |
| 2005 | 8295 | 200 | 4148 | 168 | 1213 | 1213 | 7592 | 0 | 26,695 | 662,513 | 689,208 | 689,208 | 0 | 0 | 982,958 | 982,958 | 982,958 | -293,750 |
| 2006 | 8295 | 200 | 4148 | 168 | 1581 | 1581 | 9173 | 0 | 34,784 | 863,272 | 898,056 | 841,586 | 0 | 0 | 982,958 | 982,958 | 921,148 | -79,563 |
| 2007 | 8295 | 200 | 4148 | 168 | 1949 | 1949 | 11122 | 0 | 42,873 | 1,064,032 | 1,106,905 | 972,075 | 0 | 0 | 982,958 | 982,958 | 863,226 | 108,849 |
| 2008 | | | | | | 1949 | 13070 | 0 | 42,873 | 1,064,032 | 1,106,905 | 910,951 | 0 | 0 | 0 | 0 | 0 | 910,951 |
| 2009 | | | | | | 1949 | 15019 | 0 | 42,873 | 1,064,032 | 1,106,905 | 853,669 | 0 | 0 | 0 | 0 | 0 | 853,669 |
| 2010 | | | | | | 1949 | 16968 | 0 | 42,873 | 1,064,032 | 1,106,905 | 799,990 | 0 | 0 | 0 | 0 | 0 | 799,990 |
| 2011 | | | | | | 1949 | 18917 | | 42,873 | 1,064,032 | 1,106,905 | 749,686 | 0 | 0 | 0 | 0 | 0 | 749,686 |
| 2012 | | | | | | 1949 | 20866 | | 42,873 | 1,064,032 | 1,106,905 | 702,545 | 0 | 0 | 0 | 0 | 0 | 702,545 |
| 2013 | | | | | | 1949 | 22814 | | 42,873 | 1,064,032 | 1,106,905 | 658,369 | 0 | 0 | 0 | 0 | 0 | 658,369 |
| 2014 | | | | | | 1949 | 24763 | | 42,873 | 1,064,032 | 1,106,905 | 616,970 | 0 | 0 | 0 | 0 | 0 | 616,970 |
| 2015 | | | | | | 1949 | 26712 | | 42,873 | 1,064,032 | 1,106,905 | 578,175 | 0 | 0 | 0 | 0 | 0 | 578,175 |
| 2016 | | | | | | 1949 | 28661 | | 42,873 | 1,064,032 | 1,106,905 | 541,819 | 0 | 0 | 0 | 0 | 0 | 541,819 |
| 2017 | | | | | | 1949 | 30609 | | 42,873 | 1,064,032 | 1,106,905 | 507,749 | 0 | 0 | 0 | 0 | 0 | 507,749 |
| 2018 | | | | | | 1949 | 32558 | | 42,873 | 1,064,032 | 1,106,905 | 475,821 | 0 | 0 | 0 | 0 | 0 | 475,821 |
| 2019 | | | | | | 1949 | 34507 | | 42,873 | 1,064,032 | 1,106,905 | 445,901 | 0 | 0 | 0 | 0 | 0 | 445,901 |
| 2020 | | | | | | 1949 | 36456 | | 42,873 | 1,064,032 | 1,106,905 | 417,862 | 0 | 0 | 0 | 0 | 0 | 417,862 |
| 2021 | | | | | | 1949 | 38404 | | 42,873 | 1,064,032 | 1,106,905 | 391,587 | 0 | 0 | 0 | 0 | 0 | 391,587 |
| 2022 | | | | | | 1949 | 40353 | | 42,873 | 1,064,032 | 1,106,905 | 366,964 | 0 | 0 | 0 | 0 | 0 | 366,964 |
| 2023 | | | | | | 1949 | 42302 | | 42,873 | 1,064,032 | 1,106,905 | 343,889 | 0 | 0 | 0 | 0 | 0 | 343,889 |
| 2024 | | | | | | 1949 | 44251 | | 42,873 | 1,064,032 | 1,106,905 | 322,265 | 0 | 0 | 0 | 0 | 0 | 322,265 |
| 2025 | | | | | | 1949 | 46200 | | 42,873 | 1,064,032 | 1,106,905 | 302,001 | 0 | 0 | 0 | 0 | 0 | 302,001 |
| 2026 | | | | | | 1949 | 48148 | | 42,873 | 1,064,032 | 1,106,905 | 283,011 | 0 | 0 | 0 | 0 | 0 | 283,011 |
| 2027 | | | | | | 1949 | 50097 | | 42,873 | 1,064,032 | 1,106,905 | 265,215 | 0 | 0 | 0 | 0 | 0 | 265,215 |
| 2028 | | | | | | 1949 | 52046 | | 42,873 | 1,064,032 | 1,106,905 | 248,538 | 0 | 0 | 0 | 0 | 0 | 248,538 |
| 2029 | | | | | | 1949 | 53995 | | 42,873 | 1,064,032 | 1,106,905 | 232,910 | 0 | 0 | 0 | 0 | 0 | 232,910 |
| 2030 | | | | | | 1949 | 55943 | | 42,873 | 1,064,032 | 1,106,905 | 218,264 | 0 | 0 | 0 | 0 | 0 | 218,264 |
| Totals | 0.0 | 0 | | 0.0 | 5589.0 | 50,411 | | 0 | 1,230,757 | 30,545,141 | 31,775,897 | 17,359,940 | 0 | 0 | 5,195,317 | 5,195,317 | 5,013,776 | 12,346,164 |

| | |
|---|---|
| Value of conserved water ($/ac-ft) = | 546 |
| Discount rate (real) = | 6.71% |
| Natural toilet replacement rate = | 4% |
| Annual single-family housing turnover rate = | 4.5% |
| Annual multi-family housing turnover rate = | 9.0% |
| Water savings due to toilet replacement at SF homes (gal/dwelling unit/day = | 40.8 |
| Water savings due to toilet replacement at MF homes (gal/dwelling unit/day = | 54.3 |
| Number of toilets per SF home = | 1.9 |
| Number of toilets per MF home = | 1.5 |
| Cost of conservation measure = | 79 |
| 1991 single-family units = | 89,919 |
| 1991 multi-family units = | 56,616 |
| Energy savings ($/ac-ft) = | 22 |

| | |
|---|---|
| Benefit cost ratio = | 3.5 |
| Simple pay-back period (years) = | 9 |
| Discounted cost/water saved ($acre-feet) = | 99 |
| NPV/ water saved (acre-feet) = | 245 |

## Table D-3 Definitions of Terms Used in the Economic Analysis

| Term | Definition | Comments |
|---|---|---|
| **Benefits:** | | |
| Avoided Capital Costs | Capital costs that are avoided by implementing the BMP | Example is the cost of a well that would not have to be installed due to implementation of the BMP. |
| Avoided Variable Costs | Variable costs that are avoided by implementing the BMP. | Example is the cost of electricity that would be saved if the BMP were implemented. |
| Avoided Purchase Costs | Purchase costs that are avoided by implementing the BMP. | Example is the cost of purchasing water that would not be required due to implementation of the BMP. |
| Total Undiscounted Benefits | The sum of avoided capital, variable, and purchase costs. | |
| Total Discounted Benefits | The present value of the sum of avoided capital, variable, and purchase costs. | The discount rate is used to calculate the present value of avoided costs. |
| **Costs**: | | |
| Capital Costs | Capital costs incurred by implementing the BMP. | |
| Financial Incentives | Financial incentives paid to customers. | Example is the rebate for purchasing low-flow plumbing devices. |
| Operating Expenses | Operating expenses incurred implementing the BMP. | Example is the administrative cost of conducting surveys. |
| Total Undiscounted Costs | The sum of capital, financial incentives and operating expenses. | |
| Total Discounted Costs | The present value of the sum of capital, financial incentives and operating expenses. | The discount rate is used to calculate the present value of incurred costs. |
| **Results:** | | |
| Net Present Value | Total discounted benefits minus total discounted costs. | A value greater than zero indicates an economically justifiable BMP. |
| Benefit/Cost Ratio | The sum of the total discounted benefits divided by the sum of the total discounted costs. | A ratio greater than one indicates an economically justifiable BMP. |
| Simple Pay-Back Period | The sum of the total discounted costs divided by the average annual total discounted benefits. | Indicates the number of years required for the benefits to pay back the costs of the BMP. |
| Discounted Cost/Water Saved | The sum of the total discounted costs divided by the total acre-feet of water saved over the study period. | Indicates the present-value cost to save one acre-foot of water. A low value is considered economically attractive. |
| Net Present Value/Water Saved | The sum of the net present value divided by the total acre-feet of water saved over the study period. | Indicates the net value of saving one acre-foot of water. A high value is considered economically attractive. |

## Table D-3 Definitions of Terms Used in the Economic Analysis

| Term | Definition | Comments |
|---|---|---|
| **Benefits:** | | |
| Avoided Capital Costs | Capital costs that are avoided by implementing the BMP | Example is the cost of a well that would not have to be installed due to implementation of the BMP. |
| Avoided Variable Costs | Variable costs that are avoided by implementing the BMP. | Example is the cost of electricity that would be saved if the BMP were implemented. |
| Avoided Purchase Costs | Purchase costs that are avoided by implementing the BMP. | Example is the cost of purchasing water that would not be required due to implementation of the BMP. |
| Total Undiscounted Benefits | The sum of avoided capital, variable, and purchase costs. | |
| Total Discounted Benefits | The present value of the sum of avoided capital, variable, and purchase costs. | The discount rate is used to calculate the present value of avoided costs. |
| **Costs**: | | |
| Capital Costs | Capital costs incurred by implementing the BMP. | |
| Financial Incentives | Financial incentives paid to customers. | Example is the rebate for purchasing low-flow plumbing devices. |
| Operating Expenses | Operating expenses incurred implementing the BMP. | Example is the administrative cost of conducting surveys. |
| Total Undiscounted Costs | The sum of capital, financial incentives and operating expenses. | |
| Total Discounted Costs | The present value of the sum of capital, financial incentives and operating expenses. | The discount rate is used to calculate the present value of incurred costs. |
| **Results:** | | |
| Net Present Value | Total discounted benefits minus total discounted costs. | A value greater than zero indicates an economically justifiable BMP. |
| Benefit/Cost Ratio | The sum of the total discounted benefits divided by the sum of the total discounted costs. | A ratio greater than one indicates an economically justifiable BMP. |
| Simple Pay-Back Period | The sum of the total discounted costs divided by the average annual total discounted benefits. | Indicates the number of years required for the benefits to pay back the costs of the BMP. |
| Discounted Cost/Water Saved | The sum of the total discounted costs divided by the total acre-feet of water saved over the study period. | Indicates the present-value cost to save one acre-foot of water. A low value is considered economically attractive. |
| Net Present Value/Water Saved | The sum of the net present value divided by the total acre-feet of water saved over the study period. | Indicates the net value of saving one acre-foot of water. A high value is considered economically attractive. |

# Appendix E
# Council Annual Reports for Demand Management Measures

Reported as of 4/1

## Water Supply & Reuse

Reporting Unit: **So. California Water Company - Metro District**

Year: **2004**

### Water Supply Source Information

| Supply Source Name | Quantity (AF) Supplied | Supply Type |
|---|---|---|
| City of Cerritos | 1983 | Imported |
| SCWC RII | 30457 | Groundwater |
| Recycled | | |
| California Water | 269 | Imported |
| Central Basin MWD | 7929 | Imported |
| West Basin MWD | 31010 | Imported |

**Total AF: 71648**

Reported as of 4/1

## Accounts & Water Use

| Reporting Unit Name: | Submitted to CUWCC | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **03/01/2005** | **2004** |

### A. Service Area Population Information:

1 Total service area population 349409

### 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 | 77166 | 28457 | 0 | 0 |
| 2. Multi-Family | 16882 | 23613 | 0 | 0 |
| 3. Commercial | 3200 | 8477 | 0 | 0 |
| 4. Industrial | 253 | 1889 | 0 | 0 |
| 5 Institutional | 690 | 3633 | 0 | 0 |
| 6. Dedicated Irrigation | 112 | 225 | 0 | 0 |
| 7 Recycled Water | 37 | 988 | 0 | 0 |
| 8 Other | 1665 | 324 | 0 | 0 |
| 9 Unaccounted | NA | 3490 | NA | 0 |
| **Total** | 100005 | 71096 | 0 | 0 |
| | **Metered** | | **Unmetered** | |

Reported as of 4/1

# BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **2004** |

## A. Implementation

| | |
|---|---|
| 1 Based on your signed MOU date, 12/11/1991, your Agency STRATEGY DUE DATE is | 12/10/1993 |
| 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? | 01/01/1996 |
| 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? | 01/01/1996 |

## B. Water Survey Data

| Survey Counts: | Single Family Accounts | Multi-Family Units |
|---|---|---|
| 1 Number of surveys offered: | 0 | 0 |
| 2. Number of surveys completed: | 0 | 0 |
| **Indoor Survey:** | | |
| 3. Check for leaks, including toilets, faucets and meter checks | yes | no |
| 4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary | yes | no |
| 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary | yes | no |
| **Outdoor Survey:** | | |
| 6 Check irrigation system and timers | yes | no |
| 7 Review or develop customer irrigation schedule | yes | no |
| 8 Measure landscaped area (Recommended but not required for surveys) | yes | no |
| 9 Measure total irrigable area (Recommended but not required for surveys) | yes | no |
| 10 Which measurement method is typically used (Recommended but not required for surveys) | Odometer Wheel | |
| 11. Were customers provided with information packets that included evaluation results and water savings recommendations? | yes | no |
| 12 Have the number of surveys offered and completed, survey results, and survey costs been tracked? | yes | no |

a. If yes, in what form are surveys tracked? spreadsheet

b. Describe how your agency tracks this information.

Once SCWC secures MWDSC funding through the member agencies, SCWC bids and hires a contractor to implement the program. The contractor is responsible for tracking the survey results for each customer, and entering the information into a database.

## C. Water Survey Program Expenditures

| | This Year | Next Year |
|---|---|---|
| 1 Budgeted Expenditures | 150000 | 150000 |
| 2. Actual Expenditures | 150000 | |

## 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

Reported as of 4/1

# BMP 02: Residential Plumbing Retrofit

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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? — no

a If YES, list local jurisdictions in your service area and code or ordinance in each:

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: — 27%

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: — 27%

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? — 01/01/1996

b. Describe your targeting/ marketing strategy.

Since 1996, SCWC has developed direct mail flyers to residents in various parts of SCWCs service territory advertising low-flow fixture programs.

| Low-Flow Devices Distributed/ Installed | SF Accounts | MF Units |
|---|---|---|
| 2. Number of low-flow showerheads distributed | 750 | 750 |
| 3 Number of toilet-displacement devices distributed. | 750 | 750 |
| 4. Number of toilet flappers distributed | 750 | 750 |
| 5 Number of faucet aerators distributed | 1500 | 1500 |

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? — Spreadsheet

b. If yes, describe your tracking and distribution system

The tracking and distribution is based on purchasing records and tracking quantity distributed at events

## C. Low-Flow Device Distribution Expenditures

| | This Year | Next Year |
|---|---|---|
| 1. Budgeted Expenditures | 60000 | 60000 |
| 2. Actual Expenditures | 52692 | |

## 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

Reported as of 4/1

# BMP 03: System Water Audits, Leak Detection and Repair

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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) | 67291 |
| b Determine other system verifiable uses (AF) | 316 |
| c Determine total supply into the system (AF) | 70870 |
| d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0 9 then a full-scale system audit is required. | 0.95 |
| 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? | yes |
| 5 Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? | yes |
| 6 Does your agency operate a system leak detection program? | yes |

a. If yes, describe the leak detection program:

If unaccounted for water is above 7% in a particular system, then water audits are conducted on the affected system. All hydrants, valves and service connections are served. All large production meters are tested for accuracy

## B. Survey Data

| | |
|---|---|
| 1 Total number of miles of distribution system line | 954 |
| 2. Number of miles of distribution system line surveyed. | 0 |

## C. System Audit / Leak Detection Program Expenditures

| | This Year | Next Year |
|---|---|---|
| 1. Budgeted Expenditures | 1300000 | 1500000 |
| 2 Actual Expenditures | 628500 | |

## 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



APR-18-05 11:55 FROM- T-201 P.08/52 F-045

Reported as of 4/1

# BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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 | 6621 |
| 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? | 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

All service connections in the Metropolitan District are metered and billed with commodity rates



APR-18-05 11:55 FROM- T-201 P.09/52 F-045

Reported as of 4/1

# BMP 05: Large Landscape Conservation Programs and Incentives

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **2004** |

## A. Water Use Budgets

| | |
|---|---|
| 1. Number of Dedicated Irrigation Meter Accounts: | 112 |
| 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? | 01/01/1996 |

b. Description of marketing / targeting strategy:

SCWC's Metropolitan District's targeting strategy is to partner with MWDSC's member agencies and utilize the expert resources of CBMWD and WBMWD to identify and retrofit SCWC's customer for recycle water use. SCWC identifies it's large use customers to CB/WBMWD, and entered into partnership agreements with the agencies and customers for system retrofit and recycle water use

| | |
|---|---|
| 2. Number of Surveys Offered. | 0 |
| 3. Number of Surveys Completed. | 0 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | yes |
| 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? | yes |

a. If YES, describe below:

Follow-up provided by CB/WBMWD

## 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. 0

3. Do you offer landscape irrigation training? no

4. Does your agency offer financial incentives to improve landscape water use efficiency? no

| Type of Financial Incentive: | Budget (Dollars/ Year) | Number Awarded to Customers | Total Amount Awarded |
|---|---|---|---|
| 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

Landscape water use efficienty information is provided to new customers via a customer guide available in all customer service offices.

6. Do you have irrigated landscaping at your facilities? no

a. If yes, is it water-efficient?

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 | 0 | 0 |
| 2. Actual Expenditures | 323780 | |

## 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

Reported as of 4/1

# BMP 06: High-Efficiency Washing Machine Rebate Programs

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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? — no

3. What is the level of the rebate? — 0

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

SCWC's Metropolitan District partners with MWDSC's member agencies, CBMWD and WBMWD to offer their rebate programs to SCWC customers. The rebate programs are shared with all customer service representatives in the Metropolitan District so that they can refer customers to them.



APR-18-05 11:56 FROM- T-201 P.12/52 F-045

Reported as of 4/1

## BMP 07: Public Information Programs

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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.

The Region Administration Manager and the Community & Customer Relations Administrator are involved in notifying the public of various conservation programs They issue press releases, publish quarterly newsletters and use door tags and bill inserts to notify customers of future events. They issue press releases, publish quarterly newsletters and use door tags and bill inserts to notify customers of future events.

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 | no | 0 |
| b. Public Service Announcement | no | 0 |
| c Bill Inserts / Newsletters / Brochures | yes | 4 |
| d. Bill showing water usage in comparison to previous year's usage | yes | |
| e. Demonstration Gardens | no | 0 |
| f. Special Events, Media Events | yes | 5 |
| 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 | 50000 | 50000 |
| 2. Actual Expenditures | 9000 | |

### 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



APR-18-05 11:56 FROM- T-201 P.13/52 F-045

Reported as of 4/1

## BMP 08: School Education Programs

Reporting Unit:
**So. California Water Company - Metro 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 | no | 0 | 0 | 0 |
| Grades 4th-6th | yes | 226 | 7000 | 226 |
| Grades 7th-8th | no | 0 | 0 | 0 |
| High School | no | 0 | 0 | 0 |

3. Did your Agency's materials meet state education framework requirements? yes

4 When did your Agency begin implementing this program? 09/02/2004

### B. School Education Program Expenditures

| | This Year | Next Year |
|---|---|---|
| 1. Budgeted Expenditures | 189000 | 200000 |
| 2. Actual Expenditures | 187900 | |

### 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



APR-18-05 11:56 FROM- T-201 P.14/52 F-045

Reported as of 4/1

## BMP 09: Conservation Programs for CII Accounts

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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 | 0 |
| b. Number of New Surveys Completed | 0 | 0 | 0 |
| 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 | yes | yes | yes |
| g. Customer report identifying recommended efficiency measures, paybacks and agency incentives | yes | yes | yes |

| 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 |



APR-18-05 11:57 FROM- T-201 P.15/52 F-045

## 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 option? | yes |
| 6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings? | yes |
| 7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991. | 0 |
| 8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991. | 0 |

## B. Conservation Program Expenditures for CII Accounts

| | This Year | Next Year |
|---|---|---|
| 1. Budgeted Expenditures | 10000 | 10000 |
| 2. Actual Expenditures | 11488 | |

## 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

SCWC's Metropolitan District has partnered with MWDSC's member agencies, CBMWD and WBMWD, to conduct CII account conservation programs. SCWC used CB/WBMWD expert resources to target SCWC's CII customers. The program includes rebates for ULF Toilets (flushometer and tank), ULF Urinals (flushometer and waterless), high-efficiency clothes washers, cooling tower conductivity controllers, flush valve retrofits and pre-rinse self-closing spray heads.


APR-18-05 11:57 FROM- T-201 P.16/52 F-045

Reported as of 4/1

## BMP 09a: CII ULFT Water Savings

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **2004** |

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B 10 — No

### 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

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended

   Consumptive ranking was onlymethod used to target customers

2. How does your agency advertise this program? Check all that apply — Direct letter

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

   Direct letter was only advertising method employed

### 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? — No
3. What is the total number of customer accounts participating in the program during the last year ? — 0

| CII Subsector | Number of Toilets Replaced | | | |
|---|---|---|---|---|
| 4 | Standard Gravity Tank | Air Assisted | Valve Floor Mount | Valve Wall Mount |
| a Offices | 0 | 0 | 0 | 0 |
| b Retail / Wholesale | 0 | 0 | 0 | 0 |
| c. Hotels | 0 | 0 | 0 | 0 |
| d. Health | 0 | 0 | 0 | 0 |
| e. Industrial | 0 | 0 | 0 | 0 |
| f Schools: K to 12 | 0 | 0 | 0 | 0 |
| g Eating | 0 | 0 | 0 | 0 |
| h. Govern-ment | 0 | 0 | 0 | 0 |
| i Churches | 0 | 0 | 0 | 0 |
| j. Other | 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.

Consultant

7 Participant tracking and follow-up. Letter

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 | 5 |
| b Inadequate payback | 5 |
| c Inadequate ULFT performance | 5 |
| d. Lack of funding | 5 |
| e American's with Disabilities Act | 5 |
| f Permitting | 5 |
| g. Other. Please describe in B 9 | 5 |

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

None

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?

SCWC focused on residential ULFT distribution programs and will look to implement a future CII ULFT replacement program throughout SCWC's Metropolitan District

## C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

| | Budgeted | Actual Expenditure |
|---|---|---|
| a. Labor | 0 | 0 |
| b Materials | 0 | 0 |
| c Marketing & Advertising | 0 | 0 |
| d Administration & Overhead | 0 | 0 |
| e. Outside Services | 0 | 0 |
| f. Total | 0 | 0 |

2 CII ULFT Program Annual Cost Sharing

| | |
|---|---|
| a Wholesale agency contribution | 0 |
| b. State agency | 0 |

| | |
|---|---|
| contribution | |
| c. Federal agency contribution | 0 |
| d. Other contribution | 0 |
| e. Total | 0 |

## D. Comments

SCWC's Metropolitan District has partnered with MWDSC's member agencies, CBMWD and WBMWD to conduct CII account conservation programs in the past and looks forward to implementing a future program


APR-18-05 11:57 FROM- T-201 P.19/52 F-045

Reported as of 4/1

## BMP 11: Conservation Pricing

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **2004** |

### 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 | $42863777 |
| d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $8329077 |

**2. Commercial**

| | |
|---|---|
| a. Water Rate Structure | Uniform |
| b Sewer Rate Structure | Service Not Provided |
| c Total Revenue from Volumetric Rates | $21907152 |
| d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $4256890 |

**3. Industrial**

| | |
|---|---|
| a Water Rate Structure | Uniform |
| b. Sewer Rate Structure | Service Not Provided |
| c. Total Revenue from Volumetric Rates | $1597043 |
| d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $310672 |

**4. Institutional / Government**

| | |
|---|---|
| a. Water Rate Structure | Uniform |
| b. Sewer Rate Structure | Service Not Provided |
| c. Total Revenue from Volumetric Rates | $3071693 |
| d Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $1068639 |

**5. Irrigation**

| | |
|---|---|
| a. Water Rate Structure | Uniform |
| b Sewer Rate Structure | Service Not Provided |
| c Total Revenue from Volumetric Rates | $190653 |
| d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $105206 |

**6. Other**

| | |
|---|---|
| a. Water Rate Structure | Uniform |

| | |
|---|---|
| b Sewer Rate Structure | Service Not Provided |
| c. Total Revenue from Volumetric Rates | $498994 |
| d Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $32927 |

## 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

SCWC's Metropolitan District misunderstood the instructions for 2001 and 2002 for separating out volumetric and non-volumetric. Hence, 2003 & 2004 appear to erroneously have increased non-volumetric rates. Correction was made to 2003 & 2004 information

Reported as of 4/1

## BMP 12: Conservation Coordinator

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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 ? | no |
| 4. Partner agency's name: | |
| 5. If your agency supplies the conservation coordinator | |
| a. What percent is this conservation coordinator's position? | 30% |
| b. Coordinator's Name | Sylvia Beltran |
| c. Coordinator's Title | Community & Customer Relations Administrator |
| d. Coordinator's Experience and Number of Years | Thirteen years experience in implementing corporate programs and one year in implementing various conservation programs. Works with member agencies and contractors to develop and implement conservation programs. Responsible for keeping proper records, e.a., contracts, conservation credit funding proposals, event costs, marketing information, member agency contracts, etc. |
| e. Date Coordinator's position was created (mm/dd/yyyy) | 04/01/1999 |
| 6. Number of conservation staff, including Conservation Coordinator. | 3 |

### B. Conservation Staff Program Expenditures

| | This Year | Next Year |
|---|---|---|
| 1. Budgeted Expenditures | 80000 | 85000 |
| 2. Actual Expenditures | 79000 | |

### 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



APR-18-05 11:58 FROM- T-201 P.22/52 F-045

Reported as of 4/1

## BMP 13: Water Waste Prohibition

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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.

   CPUC Tariff Rule 14-1

2. Is a copy of the most current ordinance(s) on file with CUWCC? no

   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:

   n/a n/a

### 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 no

   d. Non-recirculating systems in all new commercial laundry systems no

   e Non-recirculating systems in all new decorative fountains yes

   f Other, please name no

2. Describe measures that prohibit water uses listed above

   Water uses listed above are prohibited in stages 2,3, and 4 of a water shortage (greater than 10% water shortage)

**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. no

   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? no

5 Does your agency include information about DIR and exchange-type



APR-18-05 11:58 FROM- T-201 P.23/52 F-045

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

Reported as of 4/1

## BMP 14: Residential ULFT Replacement Programs

Reporting Unit:
**So. California Water Company - Metro 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? | yes | yes |

**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

SCWA partners with MWDSC member agencies in order to secure funding for programs. SCWC enters into contract agreements with MWDSC's member agencies to contribute funds and distribute ULFTs SCWC hires contractors to implement the various ULFT programs. The contractor is responsible for implementing the program which includes customer database record keeping, ordering and distributing ULFTs, recycling, hiring CBO, paperwork etc Up to two free ULFTs are provided to single-family residents who reside in SCWC's service area and who don't have ULFTs and who have not participated before.

7 Describe your agency's ULFT program for multi-family residences

SCWC enters into contract agreement with its member agencies in order to receive funding from MWDSC. SCWC also contributes funds to this program After securing MWD and member agency funding, SCWC will bid and hire an experience contractor to implement the multi-family program SCWC will provide customer information and assist the contractor with marketing in order to provide the service to its customers Free ULFTs, water efficient showerheads and aerators will be provided to its customers free of charge The contractor will be in charge of data management for each customer

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 | 38600 | 50000 |

2. Actual Expenditures 38000

## 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



APR-18-05 11:59 FROM- T-201 P.26/52 F-045

Reported as of 4/1

## Water Supply & Reuse

Reporting Unit: **So. California Water Company - Metro District**

Year: **2003**

### Water Supply Source Information

| Supply Source Name | Quantity (AF) Supplied | Supply Type |
|---|---|---|
| City of Cerritos | 1930 | Imported |
| City of South Gate | 18 | Imported |
| Southwest Suburban Water | 1 | Imported |
| California Water | 1203 | Imported |
| Central Basin MWD | 6511 | Imported |
| West Basin MWD | 33678 | Imported |
| Recycled | 916 | Recycled |

**Total AF: 44257**



APR-18-05 11:59 FROM- T-201 P.27/52 F-045

Reported as of 4/1

## Accounts & Water Use

| Reporting Unit Name: | Submitted to CUWCC | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **03/01/2005** | **2003** |

### A. Service Area Population Information:

1. Total service area population 347702

### 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 | 76848 | 28361 | 0 | 0 |
| 2 Multi-Family | 16813 | 23533 | 0 | 0 |
| 3 Commercial | 3186 | 8448 | 0 | 0 |
| 4 Industrial | 255 | 1795 | 0 | 0 |
| 5. Institutional | 682 | 3697 | 0 | 0 |
| 6. Dedicated Irrigation | 96 | 189 | 0 | 0 |
| 7 Recycled Water | 38 | 886 | 0 | 0 |
| 8 Other | 1649 | 1861 | 0 | 0 |
| 9. Unaccounted | NA | 798 | NA | 0 |
| **Total** | 99567 | 69568 | 0 | 0 |
| | **Metered** | | **Unmetered** | |

Reported as of 4/1

# BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **2003** |

## A. Implementation

| | |
|---|---|
| 1 Based on your signed MOU date, 12/11/1991, your Agency STRATEGY DUE DATE is: | 12/10/1993 |
| 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? | 01/01/1996 |
| 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? | 01/01/1996 |

## B. Water Survey Data

| **Survey Counts:** | **Single Family Accounts** | **Multi-Family Units** |
|---|---|---|
| 1. Number of surveys offered. | 0 | 0 |
| 2. Number of surveys completed: | 0 | 0 |
| **Indoor Survey:** | | |
| 3. Check for leaks, including toilets, faucets and meter checks | yes | no |
| 4 Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary | yes | no |
| 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary, replace leaking toilet flapper, as necessary | yes | no |
| **Outdoor Survey:** | | |
| 6 Check irrigation system and timers | yes | no |
| 7. Review or develop customer irrigation schedule | yes | no |
| 8. Measure landscaped area (Recommended but not required for surveys) | yes | no |
| 9 Measure total irrigable area (Recommended but not required for surveys) | yes | no |
| 10. Which measurement method is typically used (Recommended but not required for surveys) | Odometer Wheel | |
| 11. Were customers provided with information packets that included evaluation results and water savings recommendations? | yes | no |
| 12. Have the number of surveys offered and completed, survey results, and survey costs been tracked? | yes | no |

a. If yes, in what form are surveys tracked? spreadsheet

b Describe how your agency tracks this information.

Once SCWC secures MWDSC funding through the member agencies, SCWC bids and hires a contractor to implement the program The contractor is responsible for tracking the survey results for each customer, and entering the information into a database.

## C. Water Survey Program Expenditures

| | This Year | Next Year |
|---|---|---|
| 1 Budgeted Expenditures | 0 | 150000 |
| 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



APR-18-05 11:59 FROM- T-201 P.30/52 F-045

Reported as of 4/1

# BMP 02: Residential Plumbing Retrofit

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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? — no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each

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: — 23%
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: — 23%
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? — 01/01/1996

   b. Describe your targeting/ marketing strategy

   Since 1996, SCWC has developed direct mail flyers to residents in various parts of SCWCs service territory advertising low-flow fixture programs.

| Low-Flow Devices Distributed/ Installed | SF Accounts | MF Units |
|---|---|---|
| 2. Number of low-flow showerheads distributed | 500 | 500 |
| 3. Number of toilet-displacement devices distributed | 500 | 500 |
| 4. Number of toilet flappers distributed: | 500 | 500 |
| 5. Number of faucet aerators distributed. | 1000 | 1000 |

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? — Spreadsheet

   b. If yes, describe your tracking and distribution system .

   The tracking and distribution is based on purchasing records and tracking quantity distributed at events.

## C. Low-Flow Device Distribution Expenditures

| | This Year | Next Year |
|---|---|---|
| 1. Budgeted Expenditures | 45000 | 60000 |
| 2 Actual Expenditures | 11955 | |

## 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



APR-18-05 12:00 FROM- T-201 P.32/52 F-045

Reported as of 4/1

# BMP 03: System Water Audits, Leak Detection and Repair

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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) | 66927 |
| b Determine other system verifiable uses (AF) | 1844 |
| c Determine total supply into the system (AF) | 70185 |
| d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. | 0.98 |
| 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? | yes |
| 5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? | yes |
| 6 Does your agency operate a system leak detection program? | yes |

a. If yes, describe the leak detection program:

If unaccounted for water is above 7% in a particular system, then water audits are conducted on the affected system. All hydrants, valves and service connections are served. All large production meters are tested for accuracy

## B. Survey Data

| | |
|---|---|
| 1 Total number of miles of distribution system line. | 954 |
| 2 Number of miles of distribution system line surveyed. | 0 |

## C. System Audit / Leak Detection Program Expenditures

| | This Year | Next Year |
|---|---|---|
| 1 Budgeted Expenditures | 1600000 | 1300000 |
| 2 Actual Expenditures | 1144900 | |

## 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

Reported as of 4/1

# BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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. | 6621 |
| 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? | 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

All service connections in the Metropolitan District are metered and billed with commodity rates.

Reported as of 4/1

# BMP 05: Large Landscape Conservation Programs and Incentives

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **2003** |

## A. Water Use Budgets

| | |
|---|---|
| 1 Number of Dedicated Irrigation Meter Accounts: | 96 |
| 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? | 01/01/1996 |

b Description of marketing / targeting strategy:

SCWC's Metropolitan District's targeting strategy is to partner with MWDSC's member agencies and utilize the expert resources of CBMWD and WBMWD to identify and retrofit SCWC's customer for recycle water use. SCWC identifies it's large use customers to CB/WBMWD, and entered into partnership agreements with the agencies and customers for system retrofit and recycle water use.

| | |
|---|---|
| 2 Number of Surveys Offered | 0 |
| 3 Number of Surveys Completed. | 0 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a Irrigation System Check | no |
| b Distribution Uniformity Analysis | no |
| c Review / Develop Irrigation Schedules | no |
| d Measure Landscape Area | no |
| e. Measure Total Irrigable Area | no |
| f. Provide Customer Report / Information | no |
| 5. Do you track survey offers and results? | no |
| 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: 0

3. Do you offer landscape irrigation training? no

4. Does your agency offer financial incentives to improve landscape water use efficiency? no

| Type of Financial Incentive: | Budget (Dollars/ Year) | Number Awarded to Customers | Total Amount Awarded |
|---|---|---|---|
| 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:

Landscape water use efficienty information is provided to new customers via a customer guide available in all customer service offices

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? no

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 | 0 | 0 |
| 2 Actual Expenditures | 289456 | |

## 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

Reported as of 4/1

# BMP 06: High-Efficiency Washing Machine Rebate Programs

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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? | 0 |
| 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

SCWC's Metropolitan District partners with MWDSC's member agencies, CBMWD and WBMWD to offer their rebate programs to SCWC customers. The rebate programs are shared with all customer service representatives in the Metropolitan District so that they can refer customers to them

Reported as of 4/1

# BMP 07: Public Information Programs

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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

The Region Administration Manager and the Community & Customer Relations Administrator are involved in notifying the public of various conservation programs They issue press releases, publish quarterly newsletters and use door tags and bill inserts to notify customers of future events They issue press releases, publish quarterly newsletters and use door tags and bill inserts to notify customers of future events.

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 | no | 0 |
| b Public Service Announcement | no | 0 |
| c Bill Inserts / Newsletters / Brochures | yes | 4 |
| d. Bill showing water usage in comparison to previous year's usage | yes | |
| e. Demonstration Gardens | no | 0 |
| f. Special Events, Media Events | yes | 6 |
| g. Speaker's Bureau | no | 0 |
| 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 | 50000 | 50000 |
| 2. Actual Expenditures | 9068 | |

## 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



APR-18-05 12:01 FROM- T-201 P.38/52 F-045

Reported as of 4/1

## BMP 08: School Education Programs

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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 | no | 0 | 0 | 0 |
| Grades 4th-6th | yes | 134 | 4144 | 134 |
| Grades 7th-8th | no | 0 | 0 | 0 |
| High School | no | 0 | 0 | 0 |

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/05/2004

### B. School Education Program Expenditures

| | This Year | Next Year |
|---|---|---|
| 1 Budgeted Expenditures | 125000 | 190000 |
| 2 Actual Expenditures | 121000 | |

### 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 4/1

## BMP 09: Conservation Programs for CII Accounts

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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 | 0 | 0 | 0 |
| b. Number of New Surveys Completed | 0 | 0 | 0 |
| 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 | yes | yes | yes |
| g. Customer report identifying recommended efficiency measures, paybacks and agency incentives | yes | yes | yes |

| 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 option? | yes |
| 6 Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings? | yes |
| 7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991. | 0 |
| 8 Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991. | 0 |

## B. Conservation Program Expenditures for CII Accounts

| | This Year | Next Year |
|---|---|---|
| 1 Budgeted Expenditures | 10000 | 10000 |
| 2. Actual Expenditures | 9500 | |

## 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

SCWC's Metropolitan District has partnered with MWDSC's member agencies, CBMWD and WBMWD, to conduct CII account conservation programs SCWC used CB/WBMWD expert resources to target SCWC's CII customers. The program includes rebates for ULF Toilets (flushometer and tank), ULF Urinals (flushometer and waterless), high-efficiency clothes washers, cooling tower conductivity controllers, flush valve retrofits and pre-rinse self-closing spray heads.


APR-18-05 12:02 FROM- T-201 P.41/52 F-045

Reported as of 4/1

## BMP 09a: CII ULFT Water Savings

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **2003** |

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

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Consumptive ranking was onlymethod used to target customers.

2 How does your agency advertise this program? Check all that apply. — Direct letter

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended

Direct letter was only advertising method employed.

### 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? — No

3 What is the total number of customer accounts participating in the program during the last year ? — 23

| CII Subsector | Number of Toilets Replaced | | | |
|---|---|---|---|---|
| 4. | Standard Gravity Tank | Air Assisted | Valve Floor Mount | Valve Wall Mount |
| a. Offices | 0 | 0 | 0 | 0 |
| b. Retail / Wholesale | 0 | 0 | 0 | 0 |
| c Hotels | 23 | 0 | 0 | 0 |
| d Health | 0 | 0 | 0 | 0 |
| e. Industrial | 0 | 0 | 0 | 0 |
| f. Schools. K to 12 | 0 | 0 | 0 | 0 |
| g Eating | 0 | 0 | 0 | 0 |
| h Govern-ment | 0 | 0 | 0 | 0 |
| i Churches | 0 | 0 | 0 | 0 |



APR-18-05 12:02 FROM- T-201 P.42/52 F-045

| | | | | |
|---|---|---|---|---|
| j. Other | 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 Consultant

7. Participant tracking and follow-up Letter

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 | 5 |
| b. Inadequate payback | 5 |
| c. Inadequate ULFT performance | 5 |
| d. Lack of funding | 5 |
| e American's with Disabilities Act | 5 |
| f Permitting | 5 |
| g Other. Please describe in B 9. | 5 |

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness

None

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?

Program costs were 100% more than anticipated as there was no budget for this program.

## C. Conservation Program Expenditures for CII ULFT

1 CII ULFT Program: Annual Budget & Expenditure Data

| | Budgeted | Actual Expenditure |
|---|---|---|
| a Labor | 0 | 0 |
| b. Materials | 0 | 0 |
| c. Marketing & Advertising | 0 | 0 |
| d. Administration & Overhead | 1000 | 1000 |
| e. Outside Services | 0 | 0 |
| f. Total | 1000 | 1000 |

2 CII ULFT Program Annual Cost Sharing

| | |
|---|---|
| a Wholesale agency contribution | 2260 |
| b. State agency contribution | 0 |

| | |
|---|---|
| c Federal agency contribution | 1480 |
| d. Other contribution | 0 |
| e Total | 3740 |

## D. Comments

SCWC's Metropolitan District has partnered with MWDSC's member agencies, CBMWD and WBMWD to conduct CII account conservation programs. SCWC used CB/WBMWD expert resources to target SCWC's CII customers. The program included rebates for ULF Toilets (flushometer and tank), ULF Urinals (flushometer and waterless), high-efficiency clothes washers, cooling tower conductivity controllers, flush valve retrofits and pre-rinse self-closing spray heads

Reported as of 4/1

## BMP 11: Conservation Pricing

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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 | $42608049 |
| d Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $18658510 |

**2. Commercial**

| | |
|---|---|
| a. Water Rate Structure | Uniform |
| b Sewer Rate Structure | Service Not Provided |
| c Total Revenue from Volumetric Rates | $8279386 |
| d Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $3625630 |

**3. Industrial**

| | |
|---|---|
| a. Water Rate Structure | Uniform |
| b. Sewer Rate Structure | Service Not Provided |
| c. Total Revenue from Volumetric Rates | $1513966 |
| d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $251392 |

**4. Institutional / Government**

| | |
|---|---|
| a. Water Rate Structure | Uniform |
| b. Sewer Rate Structure | Service Not Provided |
| c. Total Revenue from Volumetric Rates | $3118395 |
| d Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $882439 |

**5. Irrigation**

| | |
|---|---|
| a Water Rate Structure | Uniform |
| b. Sewer Rate Structure | Service Not Provided |
| c. Total Revenue from Volumetric Rates | $159739 |
| d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $77294 |

**6. Other**

| | |
|---|---|
| a Water Rate Structure | Uniform |

| | |
|---|---|
| b. Sewer Rate Structure | Service Not Provided |
| c. Total Revenue from Volumetric Rates | $423127 |
| d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources | $38822 |

## 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

SCWC's Metropolitan District misunderstood the instructions for 2001 and 2002 for separating out volumetric and non-volumetric. Hence, 2003 & 2004 appear to erroneously have increased non-volumetric rates. Correction was made to 2003 & 2004 information



APR-18-05 12:03 FROM- T-201 P.46/52 F-045

Reported as of 4/1

## BMP 12: Conservation Coordinator

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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 ? — no
4. Partner agency's name:
5. If your agency supplies the conservation coordinator:
   - a. What percent is this conservation coordinator's position? — 30%
   - b. Coordinator's Name — Renee Smith
   - c. Coordinator's Title — Region Administration Manager
   - d. Coordinator's Experience and Number of Years — Six years experience in implementing various conservation programs. Works with the member agencies and contractors to develo and implement conservation programs. Responsible for keeping proper records, e.a , contracts, conservation credit funding proposals, event costs, marketing information, member agency contracts, etc. Also, responsible for submitting customer databases and invoices to its member agencies
   - e. Date Coordinator's position was created (mm/dd/yyyy) — 04/01/1997
6. Number of conservation staff, including Conservation Coordinator — 3

### B. Conservation Staff Program Expenditures

| | This Year | Next Year |
|---|---|---|
| 1. Budgeted Expenditures | 70000 | 80000 |
| 2. Actual Expenditures | 77500 | |

### 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



APR-18-05 12:03 FROM- T-201 P.47/52 F-045

Reported as of 4/1

## BMP 13: Water Waste Prohibition

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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:

   CPUC Tariff Rule 14-1

2. Is a copy of the most current ordinance(s) on file with CUWCC? no

   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

   n/a n/a

### 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 no

   d. Non-recirculating systems in all new commercial laundry systems no

   e. Non-recirculating systems in all new decorative fountains yes

   f. Other, please name no

2. Describe measures that prohibit water uses listed above:

   Water uses listed above are prohibited in stages 2,3, and 4 of a water shortage (greater than 10% water shortage)

**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. no

   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? no

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



APR-18-05 12:03 FROM- T-201 P.50/52 F-045

Reported as of 4/1

## BMP 14: Residential ULFT Replacement Programs

| Reporting Unit: | BMP Form Status: | Year: |
|---|---|---|
| **So. California Water Company - Metro District** | **100% Complete** | **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? | yes | yes |

**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.

SCWA partners with MWDSC member agencies in order to secure funding for programs. SCWC enters into contract agreements with MWDSC's member agencies to contribute funds and distribute ULFTs. SCWC hires contractors to implement the various ULFT programs. The contractor is responsible for implementing the program which includes: customer database record keeping, ordering and distributing ULFTs, recycling, hiring CBO, paperwork etc. Up to two free ULFTs are provided to single-family residents who reside in SCWC's service area and who don't have ULFTs and who have not participated before

7. Describe your agency's ULFT program for multi-family residences

SCWC enters into contract agreement with its member agencies in order to receive funding from MWDSC. SCWC also contributes funds to this program. After securing MWD and member agency funding, SCWC will bid and hire an experience contractor to implement the multi-family program. SCWC will provide customer information and assist the contractor with marketing in order to provide the service to its customers. Free ULFTs, water efficient showerheads and aerators will be provided to its customers free of charge. The contractor will be in charge of data management for each customer

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 | 30000 | 40000 |

2 Actual Expenditures 25000

## 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 4/1

# BMP 01 Coverage: Water Survey Programs for Single-Family and Multi-Family Residential Customers

| Reporting Unit | Reporting Period |
|---|---|
| **So. California Water Company - Metro District** | **03-04** |

**MOU Exhibit 1 Coverage Requirement**

No exemption request filed

Agency Indicated "at least as effective as" Implementation during report period? No

A Reporting Unit (RU) must meet three conditions to satisfy strict compliance for BMP 1

Condition 1. Adopt survey targeting and marketing strategy on time

Condition 2 Offer surveys to 20% of SF accounts and 20% of MF units during report period

Condition 3: Be on track to survey 15% of SF accounts and 15% of MF units within 10 years of implementation start date.

**Test for Condition 1**

So California Water Company - M
Implement Targeting/Mark

Year So California Water C
Reported Implementing Targ
So California Water Company
Targeting/Marketing Coverage

Coverage report 2003-04

**Test for Condition 2**

| | | | | |
|---|---|---|---|---|
| Survey Program to Start by: | 1998 | | | |
| Reporting Period: | 03-04 | 20% | NO | NO |

**Test for Condition 3**

| | Completed Residential Surveys | |
|---|---|---|
| | Single Family | Multi-Family |
| Total Completed Surveys 1999 - 2004: | 8,870 | |
| Past Credit for Surveys Completed Prior to 1999 (Implementation of Reporting Database): | 2,090 | |
| Total + Credit | 10,960 | |

Reported as of 4/1

# BMP 02 Coverage: Residential Plumbing Retrofit

Reporting Unit

**So. California Water Company - Metro District**

Reporting Period.

**03-04**

**MOU Exhibit 1 Coverage Requirement**

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one of three conditions to satisfy strict compliance for BMP 2.

Condition 1 The agency has demonstrated that 75% of SF accounts and 75% of MF units constructed prior to 1992 are fitted with low-flow showerheads.

Condition 2 An enforceable ordinance requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts is in place for the agency's service area.

Condition 3 The agency has distributed or directly installed low-flow showerheads and other lowflow plumbing devices to not less than 10% of single-family accounts and 10% of multi-family units constructed prior to 1992 during the reporting period

## Test for Condition 1

| | | Single-Family | | Multi-Family | |
|---|---|---|---|---|---|
| Report Year | Report Period | Reported Saturation | Saturation > 75%? | Reported Saturation | Saturation > 75%? |
| 1999 | 99-00 | 19.00% | NO | 19.00% | NO |
| 2000 | 99-00 | 19.00% | NO | 19 00% | NO |
| 2001 | 01-02 | 19 00% | NO | 19 00% | NO |
| 2002 | 01-02 | 19 00% | NO | 19 00% | NO |
| 2003 | 03-04 | 23.00% | NO | 23.00% | NO |
| 2004 | 03-04 | 27 00% | NO | 27.00% | NO |

## Test for Condition 2

| Report Year | Report Period | So. California Water Company - Metro District has ordinance requiring showerhead retrofit? |
|---|---|---|
| 1999 | 99-00 | NO |
| 2000 | 99-00 | NO |
| 2001 | 01-02 | NO |
| 2002 | 01-02 | NO |
| 2003 | 03-04 | NO |
| 2004 | 03-04 | NO |

## Test for Condition 3

Reporting Period. 03-04

| 1992 SF Accounts | Num. Showerheads Distributed to SF Accounts | Single-Family Coverage Ratio | SF Coverage Ratio > 10% |
|---|---|---|---|
| 73,225 | 1,250 | 1.7% | NO |

| 1992 MF Accounts | Num Showerheads Distributed to MF Accounts | Multi-Family Coverage Ratio | MF Coverage Ratio > 10% |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 56,616 | 1,250 | 2 2% | NO |

**BMP 2 COVERAGE STATUS SUMMARY:**
**Water supplier has not met one or more coverage requirements for this BMP.**

Reported as of 4/1

# BMP 03 Coverage: System Water Audits, Leak Detection and Repair

Reporting Unit:
**So. California Water Company - Metro District**

Reporting Period:
**03-04**

## MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one of two conditions to be in compliance with BMP 3:

Condition 1: Perform a prescreening audit. If the result is equal to or greater than 0.9 nothing more needs be done.

Condition 2: Perform a prescreening audit. If the result is less than 0.9, perform a full audit in accordance with AWWA's Manual of Water Supply Practices, Water Audits, and Leak Detection.

### Test for Conditions 1 and 2

| Report Year | Report Period | Pre-Screen Completed | Pre-Screen Result | Full Audit Indicated | Full Audit Completed |
|---|---|---|---|---|---|
| 1999 | 99-00 | YES | 97.1% | No | YES |
| 2000 | 99-00 | YES | 98.9% | No | YES |
| 2001 | 01-02 | YES | 99.2% | No | YES |
| 2002 | 01-02 | YES | 96.8% | No | YES |
| 2003 | 03-04 | YES | 98.0% | No | YES |
| 2004 | 03-04 | YES | 95.4% | No | YES |

**BMP 3 COVERAGE STATUS SUMMARY:**
**Water supplier is meeting coverage requirements for this BMP.**

Reported as of 4/1

## BMP 04 Coverage: Metering with Commodity Rates for all New Connections and Retrofit of Existing

| Reporting Unit | Reporting Period: |
|---|---|
| **So. California Water Company - Metro District** | **03-04** |

### MOU Exhibit 1 Coverage Requirement

| | |
|---|---|
| No exemption request filed | |
| Agency indicated "at least as effective as" implementation during report period? | No |

An agency must be on track to retrofit 100% of its unmetered accounts within 10 years to be in compliance with BMP 4.

**Test for Compliance**

| | |
|---|---|
| Total Meter Retrofits Reported through 2004 | |
| No. of Unmetered Accounts in Base Year | |
| Meter Retrofit Coverage as % of Base Year Unmetered Accounts | |
| Coverage Requirement by Year 6 of Implementation per Exhibit 1 | 42.0% |
| RU on Schedule to meet 10 Year Coverage Requirement | YES |

**BMP 4 COVERAGE STATUS SUMMARY:**
**Water supplier is meeting coverage requirements for this BMP.**

Reported as of 4/1

# BMP 05 Coverage: Large Landscape Conservation Programs and Incentives

Reporting Unit:
**So. California Water Company - Metro District**

Reporting Period:
**03-04**

## MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet three conditions to comply with BMP 5.

Condition 1: Develop water budgets for 90% of its dedicated landscape meter accounts within four years of the date implementation is to start.

Condition 2: (a) Offer landscape surveys to at least 20% of its CII accounts with mixed use meters each report cycle and be on track to survey at least 15% of its CII accounts with mixed use meters within 10 years of the date implementation is to start OR (b) Implement a dedicated landscape meter retrofit program for CII accounts with mixed use meters or assign landscape budgets to mixed use meters.

Condition 3: Implement and maintain customer incentive program(s) for irrigation equipment retrofits.

### Test for Condition 1

| Year | Report Period | BMP 5 Implementation Year | No. of Irrigation Meter Accounts | No. of Irrigation Accounts with Budgets | Budget Coverage Ratio | 90% Coverage Met by Year 4 |
|---|---|---|---|---|---|---|
| 1999 | 99-00 | 1 | 504 | | | NA |
| 2000 | 99-00 | 2 | 27 | | | NA |
| 2001 | 01-02 | 3 | 40 | | | NA |
| 2002 | 01-02 | 4 | 54 | | | No |
| 2003 | 03-04 | 5 | 96 | | | No |
| 2004 | 03-04 | 6 | 112 | | | No |

### Test for Condition 2a (survey offers)

| | |
|---|---|
| Select Reporting Period: | 03-04 |
| Large Landscape Survey Offers as % of Mixed Use Meter CII Accounts | |
| Survey Offers Equal or Exceed 20% Coverage Requirement | NO |

### Test for Condition 2a (surveys completed)

| | |
|---|---|
| Total Completed Landscape Surveys Reported through | |
| Credit for Surveys Completed Prior to Implementation of Reporting Database | 6 |
| Total + Credit | 6 |
| CII Accounts in Base Year | 6,621 |
| RU Survey Coverage as a % of Base Year CII Accounts | 0.1% |
| Coverage Requirement by Year of Implementation per Exhibit 1 | 6.3% |
| RU on Schedule to Meet 10 Year Coverage | |

Requirement NO

**Test for Condition 2b (mixed use budget or meter retrofit program)**

| Report Year | Report Period | BMP 5 Implementation Year | Agency has mix-use budget program | No. of mixed-use budgets |
|---|---|---|---|---|
| 1999 | 99-00 | 1 | NO | |
| 2000 | 99-00 | 2 | NO | |
| 2001 | 01-02 | 3 | NO | |
| 2002 | 01-02 | 4 | NO | |
| 2003 | 03-04 | 5 | NO | |
| 2004 | 03-04 | 6 | NO | |

| Report Year | Report Period | BMP 4 Implementation Year | No. of mixed use CII accounts | No. of mixed use CII accounts fitted with irrig. meters |
|---|---|---|---|---|
| 1999 | 99-00 | 1 | 6,621 | |
| 2000 | 99-00 | 2 | 6,621 | |
| 2001 | 01-02 | 3 | 6,621 | |
| 2002 | 01-02 | 4 | 6,621 | |
| 2003 | 03-04 | 5 | 6,621 | |
| 2004 | 03-04 | 6 | 6,621 | |

**Test for Condition 3**

| Report Year | Report Period | BMP 5 Implementation Year | RU offers financial incentives? | No. of Loans | Total Amt. Loans |
|---|---|---|---|---|---|
| 1999 | 99-00 | 1 | YES | | |
| 2000 | 99-00 | 2 | NO | | |
| 2001 | 01-02 | 3 | NO | | |
| 2002 | 01-02 | 4 | NO | | |
| 2003 | 03-04 | 5 | NO | | |
| 2004 | 03-04 | 6 | NO | | |

| Report Year | Report Period | No. of Grants | Total Amt Grants | No. of rebates | Total Amt Rebates |
|---|---|---|---|---|---|
| 1999 | 99-00 | | | | |
| 2000 | 99-00 | | | | |
| 2001 | 01-02 | | | | |
| 2002 | 01-02 | | | | |
| 2003 | 03-04 | | | | |
| 2004 | 03-04 | | | | |

**BMP 5 COVERAGE STATUS SUMMARY:**
**Water supplier has not met one or more coverage requirements for this BMP.**

Reported as of 4/1

# BMP 06 Coverage: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:
**So. California Water Company - Metro District**

Reporting Period:
**03-04**

## MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 6.

Condition 1 Offer a cost-effective financial incentive for high-efficiency washers if one or more energy service providers in service area offer financial incentives for high-efficiency washers.

### Test for Condition 1

| Year | Report Period | BMP 6 Implementation Year | Rebate Offered by ESP? | Rebate Offered by RU? | Rebate Amount |
|---|---|---|---|---|---|
| 1999 | 99-00 | 1 | NO | NO | |
| 2000 | 99-00 | 2 | NO | NO | |
| 2001 | 01-02 | 3 | NO | NO | |
| 2002 | 01-02 | 4 | NO | NO | |
| 2003 | 03-04 | 5 | NO | NO | |
| 2004 | 03-04 | 6 | NO | NO | |

| Year | Report Period | BMP 6 Implementation Year | No Rebates Awarded | Coverage Met? |
|---|---|---|---|---|
| 1999 | 99-00 | 1 | | YES |
| 2000 | 99-00 | 2 | | YES |
| 2001 | 01-02 | 3 | | YES |
| 2002 | 01-02 | 4 | | YES |
| 2003 | 03-04 | 5 | | YES |
| 2004 | 03-04 | 6 | | YES |

**BMP 6 COVERAGE STATUS SUMMARY:**
**Water supplier is meeting coverage requirements for this BMP.**

Reported as of 4/1

# BMP 07 Coverage: Public Information Programs

| Reporting Unit | Reporting Period |
|---|---|
| **So. California Water Company - Metro District** | **03-04** |

## MOU Exhibit 1 Coverage Requirement

No exemption request filed

| | |
|---|---|
| Agency indicated "at least as effective as" implementation during report period? | No |

An agency must meet one condition to comply with BMP 7.

Condition 1. Implement and maintain a public information program consistent with BMP 7's definition.

### Test for Condition 1

| Year | Report Period | BMP 7 Implementation Year | RU Has Public Information Program? |
|---|---|---|---|
| 1999 | 99-00 | 2 | YES |
| 2000 | 99-00 | 3 | YES |
| 2001 | 01-02 | 4 | YES |
| 2002 | 01-02 | 5 | YES |
| 2003 | 03-04 | 6 | YES |
| 2004 | 03-04 | 7 | YES |

**BMP 7 COVERAGE STATUS SUMMARY:**
**Water supplier is meeting coverage requirements for this BMP.**

Reported as of 4/1

## BMP 08 Coverage: School Education Programs

Reporting Unit: **So. California Water Company - Metro District**

Reporting Period: **03-04**

## MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 8.

Condition 1. Implement and maintain a school education program consistent with BMP 8's definition.

**Test for Condition 1**

| Year | Report Period | BMP 8 Implementation Year | RU Has School Education Program? |
|---|---|---|---|
| 1999 | 99-00 | 2 | YES |
| 2000 | 99-00 | 3 | YES |
| 2001 | 01-02 | 4 | YES |
| 2002 | 01-02 | 5 | YES |
| 2003 | 03-04 | 6 | YES |
| 2004 | 03-04 | 7 | YES |

**BMP 8 COVERAGE STATUS SUMMARY:**
**Water supplier is meeting coverage requirements for this BMP.**



APR-18-05 11:29 FROM- T-200 P.12/30 F-044

Reported as of 4/1

# BMP 09 Coverage: Conservation Programs for CII Accounts

Reporting Unit:
**So. California Water Company - Metro District**

Reporting Period
**03-04**

## MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet three conditions to comply with BMP 9.

Condition 1. Agency has identified and ranked by use commercial, industrial, and institutional accounts

Condition 2(a): Agency is on track to survey 10% of commercial accounts, 10% of industrial accounts, and 10% of institutional accounts within 10 years of date implementation to commence
OR
Condition 2(b): Agency is on track to reduce CII water use by an amount equal to 10% of baseline use within 10 years of date implementation to commence
OR
Condition 2(c): Agency is on track to meet the combined target as described in Exhibit 1 BMP 9 documentation

### Test for Condition 1

| Year | Report Period | BMP 9 Implementation Year | Ranked Com Use | Ranked Ind Use | Ranked Inst Use |
|---|---|---|---|---|---|
| 1999 | 99-00 | 1 | YES | YES | YES |
| 2000 | 99-00 | 2 | YES | YES | YES |
| 2001 | 01-02 | 3 | YES | YES | YES |
| 2002 | 01-02 | 4 | YES | YES | YES |
| 2003 | 03-04 | 5 | YES | YES | YES |
| 2004 | 03-04 | 6 | YES | YES | YES |

### Test for Condition 2a

| | Commercial | Industrial | Institutional |
|---|---|---|---|
| Total Completed Surveys Reported through 2004 | | | |
| Credit for Surveys Completed Prior to Implementation of Reporting Databases | 3 | 3 | 2 |
| Total + Credit | 3 | 3 | 2 |
| CII Accounts in Base Year | 3,208 | 2,265 | 1,148 |
| RU Survey Coverage as % of Base Year CII Accounts | 0 1% | 0.1% | 0 2% |
| Coverage Requirement by Year 6 of Implementation per Exhibit 1 | 4.2% | 4 2% | 4.2% |
| RU on Schedule to Meet 10 Year Coverage Requirement | NO | NO | NO |

### Test for Condition 2a

Performance



T-200 P.13/30 F-044

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| Year | Report Period | BMP 9 Implementation Year | Performance Target Savings (AF/yr) | Performance Target Savings Coverage | Target Savings Coverage Requirement | Coverage Requirement Met |
|---|---|---|---|---|---|---|
| 1999 | 99-00 | 1 | | | 0.5% | NO |
| 2000 | 99-00 | 2 | | | 1.0% | NO |
| 2001 | 01-02 | 3 | | | 1.7% | NO |
| 2002 | 01-02 | 4 | | | 2.4% | NO |
| 2003 | 03-04 | 5 | | | 3.3% | NO |
| 2004 | 03-04 | 6 | | | 4.2% | NO |

**Test for Condition 2c**

| | |
|---|---|
| Total BMP 9 Surveys + Credit | 8 |
| BMP 9 Survey Coverage | 0.1% |
| BMP 9 Performance Target Coverage | |
| BMP 9 Survey + Performance Target Coverage | 0.1% |
| Combined Coverage Equals or Exceeds Coverage Requirement? | NO |

**BMP 9 COVERAGE STATUS SUMMARY:**
**Water supplier has not met one or more coverage requirements for this BMP.**

Reported as of 4/1

# BMP 11 Coverage: Conservation Pricing

Reporting Unit:
**So. California Water Company - Metro District**

Reporting Period
**03-04**

## MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 11.

Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing. Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service

a) Non-conserving pricing provides no incentives to customers to reduce use. Such pricing is characterized by one or more of the following components: rates in which the unit price decreases as the quantity used increases (declining block rates),rates that involve charging customers a fixed amount per billing cycle regardless of the quantity used; pricing in which the typical bill is determined by high fixed charges and low commodity charges

b) Conservation pricing provides incentives to customers to reduce average or peak use, or both. Such pricing includes rates designed to recover the cost of providing service, and billing for water and sewer service based on metered water use. Conservation pricing is also characterized by one or more of the following components: rates in which the unit rate is constant regardless of the quantity used (uniform rates) or increases as the quantity used increases (increasing block rates); seasonal rates or excessuse surcharges to reduce peak demands during summer months; rates based upon the longrun marginal cost or the cost of adding the next unit of capacity to the system.

### Test for Condition 1

| Year | Report Period | RU Employed Non Conserving Rate Structure | RU Meets BMP 11 Coverage Requirement |
|---|---|---|---|
| 1999 | 99-00 | YES | NO |
| 2000 | 99-00 | NO | YES |
| 2001 | 01-02 | NO | YES |
| 2002 | 01-02 | NO | YES |
| 2003 | 03-04 | NO | YES |
| 2004 | 03-04 | NO | YES |

**BMP 11 COVERAGE STATUS SUMMARY:**
**Water supplier is meeting coverage requirements for this BMP.**



APR-18-05 11:30 FROM- T-200 P.15/30 F-044

Reported as of 4/1

## BMP 12 Coverage: Conservation Coordinator

Reporting Unit:
**So. California Water Company - Metro District**

Reporting Period:
**03-04**

### MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Agency shall staff and maintain the position of conservation coordinator and provide support staff as necessary.

**Test for Compliance**

| Report Year | Report Period | Conservation Coordinator Position Staffed? | Total Staff on Team (incl CC) |
|---|---|---|---|
| 1999 | 99-00 | YES | 2 |
| 2000 | 99-00 | YES | 3 |
| 2001 | 01-02 | YES | 3 |
| 2002 | 01-02 | YES | 3 |
| 2003 | 03-04 | YES | 3 |
| 2004 | 03-04 | YES | 3 |

**BMP 12 COVERAGE STATUS SUMMARY:**
**Water supplier is meeting coverage requirements for this BMP.**

Reported as of 4/1

# BMP 13 Coverage: Water Waste Prohibition

Reporting Unit:
**So. California Water Company - Metro District**

Reporting Period:
**03-04**

## MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 13

Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyer car wash and commercial laundry systems, and non-recycling decorative water fountains.

### Test for Condition 1

**Agency or service area prohibits:**

| Year | Gutter Flooding | Single-Pass Cooling Systems | Single-Pass Car Wash | Single-Pass Laundry | Single-Pass Fountains | Other | RU has ordinance that meets coverage requirement |
|---|---|---|---|---|---|---|---|
| 1999 | yes | no | no | no | yes | no | NO |
| 2000 | yes | no | no | no | yes | no | NO |
| 2001 | yes | no | no | no | yes | no | NO |
| 2002 | yes | no | no | no | yes | no | NO |
| 2003 | yes | no | no | no | yes | no | NO |
| 2004 | yes | no | no | no | yes | no | NO |

**BMP 13 COVERAGE STATUS SUMMARY:**
**Water supplier has not met one or more coverage requirements for this BMP.**

Reported as of 4/1

# BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit **So. California Water Company - Metro District**

## MOU Exhibit 1 Coverage Requirement

A Reporting Unit (RU) must meet one of the following conditions to be in compliance with BMP 14.

Condition 1. Retrofit-on-resale (ROR) ordinance in effect in service area.

Condition 2. Water savings from toilet replacement programs equal to 90% of Exhibit 6 coverage requirement.

An agency with an exemption for BMP 14 is not required to meet one of the above conditions. This report treats an agency with missing base year data required to compute the Exhibit 6 coverage requirement as out of compliance with BMP 14.

**Status: Water supplier has not met one or more coverage requirements for this BMP. as of 2004**

| Coverage Year | BMP 14 Data Submitted to CUWCC | Exemption Filed with CUWCC | ROR Ordinance in Effect | Exhibit 6 Coverage Req'mt (AF) | Toilet Replacement Program Water Savings* (AF) |
|---|---|---|---|---|---|
| 1998 | Yes | | | 358.99 | 1707.91 |
| 1999 | Yes | No | No | 1022.58 | 2317.60 |
| 2000 | Yes | No | No | 1943.17 | 3120.65 |
| 2001 | Yes | No | No | 3079.13 | 3961.46 |
| 2002 | Yes | No | No | 4394.09 | 4768.63 |
| 2003 | Yes | No | No | 5856.30 | 5543.52 |
| 2004 | Yes | No | No | 7438.07 | 6287.41 |
| 2005 | No | No | No | 9115.29 | |
| 2006 | No | No | No | 10867.00 | |
| 2007 | No | No | No | 12674.99 | |

*NOTE: Program water savings listed are net of the plumbing code. Savings are cumulative (not annual) between 1991 and the given year. Residential ULFT count data from unsubmitted forms are NOT included in the calculation.

**BMP 14 COVERAGE STATUS SUMMARY:**

**Water supplier has not met one or more coverage requirements for this BMP.**



APR-18-05 11:31 FROM- T-200 P.18/30 F-044

# BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit. **So. California Water Company - Metro District**

## BMP 14 Coverage Calculation Detail: Retrofit on Resale (ROR) Ordinance Water Savings

| | Single Family | Multi-Family |
|---|---|---|
| **1992 Housing Stock** | | |
| **Average rate of natural replacement (% of remaining stock)** | 04 | 04 |
| **Average rate of housing demolition (% of remining stock)** | .005 | .005 |
| **Estimated Housing Units with 3.5+ gpf Toilets in 1997** | 59767 89 | 46211 25 |
| **Average resale rate** | .045 | .09 |
| **Average persons per unit** | | |
| **Average toilets per unit** | | |
| **Average savings per home (gpd; from Exhibit 6)** | 40.8 | 54.3 |

## Single Family Housing Units

| Coverage Year | Unretrofitted Houses | Houses Sold | Houses Unsold | Sold and Retrofitted | Sold and Already Retrofitted | Unsold and Retrofitted | Gross ROR Savings (AFY) | Nat'l Replacement Only Savings (AFY) | Net ROR Savings (AFY) |
|---|---|---|---|---|---|---|---|---|---|
| 1998 | 54820 08 | 2676.11 | 56792 94 | 2676 11 | | 2271.72 | 841 01 | 723 62 | 117 39 |
| 1999 | 50281.84 | 2662 73 | 56508 97 | 2454.57 | 208 16 | 2083 66 | 1048.39 | 827.99 | 220.40 |
| 2000 | 46119.31 | 2649 41 | 56226.43 | 2251 37 | 398 04 | 1911 16 | 1238.59 | 928.21 | 310.39 |
| 2001 | 42301 36 | 2636.17 | 55945 30 | 2064 89 | 571 17 | 1752.95 | 1413 08 | 1024 44 | 388 62 |
| 2002 | 38799 49 | 2622.98 | 55665 57 | 1894 04 | 728.94 | 1607 83 | 1573 07 | 1116 84 | 456.24 |
| 2003 | 35587.51 | 2609 87 | 55387.24 | 1737.25 | 872 62 | 1474 73 | 1719.84 | 1205.56 | 514.29 |
| 2004 | 32641.43 | 2596 82 | 55110.31 | 1593.43 | 1003 39 | 1352 65 | 1854 47 | 1290 75 | 563 72 |
| 2005 | 29939 25 | 2583.84 | 54834.75 | 1461 52 | 1122 32 | 1240.67 | 1977 94 | 1372 55 | 605 39 |
| 2006 | 27460 76 | 2570.92 | 54560 58 | 1340 53 | 1230.39 | 1137 96 | 2091.20 | 1451 09 | 640.11 |
| 2007 | 25187.44 | 2558 08 | 54287.78 | 1229.56 | 1328 51 | 1043 76 | 2195.08 | 1526.51 | 668.57 |

## Multi Family Housing Units

| Coverage Year | Unretrofitted Houses | Houses Sold | Houses Unsold | Sold and Retrofitted | Sold and Already Retrofitted | Unsold and Retrofitted | Gross ROR Savings (AFY) | Nat'l Replacement Only Savings (AFY) | Net ROR Savings (AFY) |
|---|---|---|---|---|---|---|---|---|---|
| 1998 | 40399 35 | 4138.22 | 41841 97 | 4138 22 | | 1673.68 | 988 21 | 744 61 | 241 60 |
| 1999 | 35318.41 | 4117 53 | 41632.76 | 3617.76 | 499 76 | 1463 18 | 1295.21 | 852 01 | 443.19 |
| 2000 | 30876 48 | 4096.94 | 41424 60 | 3162 76 | 934 18 | 1279.16 | 1585 34 | 955.14 | 610.20 |
| 2001 | 26993.21 | 4076 45 | 41217 48 | 2764.99 | 1311.46 | 1118 28 | 1801 50 | 1054 16 | 747 34 |
| 2002 | 23598 33 | 4056 07 | 41011.39 | 2417.24 | 1638 83 | 977 64 | 2007.96 | 1149 24 | 858 72 |
| 2003 | 20630.41 | 4035 79 | 40806 33 | 2113 23 | 1922.56 | 854.68 | 2188 45 | 1240 53 | 947.92 |
| 2004 | 18035 77 | 4015.61 | 40602 30 | 1847 45 | 2168 16 | 747.19 | 2346.24 | 1328.19 | 1018.05 |
| 2005 | 15767 44 | 3995 53 | 40399.29 | 1615 10 | 2380 43 | 653 22 | 2484 19 | 1412 37 | 1071 83 |
| 2006 | 13784 40 | 3975.56 | 40197 29 | 1411 97 | 2563 58 | 571.07 | 2604 79 | 1493.19 | 1111.60 |



APR-18-05 11:31 FROM- T-200 P.19/30 F-044

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2007 | 12050.77 | 3955 68 | 39986 31 | 1234 39 | 2721.29 | 499 24 | 2710 22 | 1570 79 | 1139.43 |

# Total Water Savings (AF) Report

Reporting Unit:
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| | |
|---|---|
| **BMP01:** Water Survey Programs for Single-Family and Multi-Family Residential Customers | **1,135** |
| **BMP02:** Residential Plumbing Retrofit | **374** |
| **BMP04:** Metering with Commodity Rates for all New Connections and Retrofit of Existing | **0** |
| **BMP05:** Large Landscape Conservation Programs and Incentives | **499** |
| **BMP06:** High-Efficiency Washing Machine Rebate Programs | **0** |
| **BMP09:** Conservation Programs for CII Accounts | **82** |
| **BMP09a:** CII ULFT Water Savings | **143** |
| **BMP14:** Residential ULFT Replacement Programs | **8,314** |
| **Total:** | **10,547** |

# Water Savings (AFY) Detail Report for BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| Year | | Water Savings (AF) |
|---|---|---|
| 1991 | | 0 |
| 1992 | | 0 |
| 1993 | | 0 |
| 1994 | | 0 |
| 1995 | | 0 |
| 1996 | | 56 |
| 1997 | | 48 |
| 1998 | | 41 |
| 1999 | | 35 |
| 2000 | | 167 |
| 2001 | | 213 |
| 2002 | | 181 |
| 2003 | | 154 |
| 2004 | | 131 |
| 2005 | | 111 |
| | **TOTAL:** | **1,135** |

# Water Savings (AFY) Detail Report for BMP 02: Residential Plumbing Retrofit

Reporting Unit
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| Year | Gross Water Savings (AFY) | Water Savings (AFY) Net of Plumbing Code |
|---|---|---|
| 1991 | 0 | 0 |
| 1992 | 0 | 0 |
| 1993 | 0 | 0 |
| 1994 | 0 | 0 |
| 1995 | 0 | 0 |
| 1996 | 0 | 0 |
| 1997 | 0 | 0 |
| 1998 | 0 | 0 |
| 1999 | 17 | 17 |
| 2000 | 34 | 30 |
| 2001 | 53 | 39 |
| 2002 | 54 | 29 |
| 2003 | 63 | 30 |
| 2004 | 76 | 34 |
| 2005 | 76 | 24 |
| **TOTALS:** | **374** | **203** |

# Water Savings (AFY) Detail Report for BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| Year | Water Savings (AF) |
|---|---|
| 1991 | 0 |
| 1992 | 0 |
| 1993 | 0 |
| 1994 | 0 |
| 1995 | 0 |
| 1996 | 0 |
| 1997 | 0 |
| 1998 | 0 |
| 1999 | 0 |
| 2000 | 0 |
| 2001 | 0 |
| 2002 | 0 |
| 2003 | 0 |
| 2004 | 0 |
| 2005 | 0 |
| **TOTAL:** | **0** |

# Water Savings (AFY) Detail Report for BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| Year | | Water Savings (AF) |
|---|---|---|
| 1991 | | 0 |
| 1992 | | 0 |
| 1993 | | 0 |
| 1994 | | 0 |
| 1995 | | 4 |
| 1996 | | 7 |
| 1997 | | 6 |
| 1998 | | 6 |
| 1999 | | 5 |
| 2000 | | 41 |
| 2001 | | 74 |
| 2002 | | 103 |
| 2003 | | 93 |
| 2004 | | 84 |
| 2005 | | 75 |
| | **TOTAL:** | **499** |

# Water Savings (AFY) Detail Report for BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| Year | Gross Water Savings (AFY) | Water Savings (AFY) Net of Program Freeridership Effects |
|---|---|---|
| 1991 | 0 | 0 |
| 1992 | 0 | 0 |
| 1993 | 0 | 0 |
| 1994 | 0 | 0 |
| 1995 | 0 | 0 |
| 1996 | 0 | 0 |
| 1997 | 0 | 0 |
| 1998 | 0 | 0 |
| 1999 | 0 | 0 |
| 2000 | 0 | 0 |
| 2001 | 0 | 0 |
| 2002 | 0 | 0 |
| 2003 | 0 | 0 |
| 2004 | 0 | 0 |
| 2005 | 0 | 0 |
| **TOTAL:** | **0** | **0** |

# Water Savings (AFY) Detail Report for BMP 09: Conservation Programs for CII Accounts

Reporting Unit
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| Year | | Water Savings (AF) |
|---|---|---|
| 1991 | | 0 |
| 1992 | | 0 |
| 1993 | | 0 |
| 1994 | | 0 |
| 1995 | | 0 |
| 1996 | | 0 |
| 1997 | | 4 |
| 1998 | | 5 |
| 1999 | | 11 |
| 2000 | | 13 |
| 2001 | | 12 |
| 2002 | | 11 |
| 2003 | | 10 |
| 2004 | | 9 |
| 2005 | | 8 |
| | **TOTAL:** | **82** |

# Water Savings (AFY) Detail Report for BMP 09a: CII ULFT Water Savings

Reporting Unit
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| Year | Gross Water Savings (AFY) | Water Savings (AFY) Net of Plumbing Code | Water Savings (AFY) Net of Plumbing Code and Program Freeridership Effects |
|---|---|---|---|
| 1991 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 |
| 2004 | 0 | 0 | 0 |
| 2005 | 0 | 0 | 0 |
| **TOTALS:** | **0** | **0** | **0** |

# Water Savings (AFY) Detail Report for BMP 14: Residential ULFT Replacement Programs

Reporting Unit:
**So. California Water Company - Metro District**

**Estimated Water Savings from BMP Annual Report Data**

| Year | Gross Water Savings (AFY) | Water Savings (AFY) Net of Plumbing Code | Water Savings (AFY) Net of Plumbing Code and Program Freeridership Effects |
|---|---|---|---|
| 1991 | 74 | 74 | 55 |
| 1992 | 147 | 144 | 108 |
| 1993 | 221 | 212 | 159 |
| 1994 | 294 | 277 | 208 |
| 1995 | 294 | 266 | 199 |
| 1996 | 294 | 255 | 191 |
| 1997 | 294 | 245 | 184 |
| 1998 | 294 | 235 | 176 |
| 1999 | 678 | 610 | 476 |
| 2000 | 896 | 803 | 632 |
| 2001 | 966 | 841 | 662 |
| 2002 | 966 | 807 | 636 |
| 2003 | 966 | 775 | 610 |
| 2004 | 966 | 744 | 586 |
| 2005 | 966 | 714 | 562 |
| **TOTALS:** | **8,314** | **7,002** | **5,446** |

# Appendix F
# Rule No. 14.1: Mandatory Water Conservation, Restrictions, and Rationing Program

Rule No. 14.1

MANDATORY WATER CONSERVATION, RESTRICTIONS AND RATIONING PROGRAM (N)



A. GENERAL INFORMATION:

If water supplies are projected to be insufficient to meet normal customer demand, and are beyond the control of the Company, the Company may elect to implement voluntary conservation using the portion of this plan set forth in Section C of this rule after notifying the Commission's Water Division of its intent. If, in the opinion of the Company, more stringent water measures are required, the Company shall request Commission authorization to implement the mandatory conservation and rationing measures set forth in Section D.

The Commission shall authorize mandatory conservation and rationing by approving Schedule No. 14.1, Mandatory Water Conservation and Rationing. When Schedule No. 14.1 has expired or is not in effect, mandatory conservation and rationing measures will not be in force. Schedule No. 14.1 will set forth water use violation fines, charges for removal of flow restrictors, and the period during which mandatory conservation and rationing measures will be in effect.

When the applicable Schedule No. 14.1 is in effect and the Company determines that water supplies are again sufficient to meet normal demands, and mandatory conservation and rationing measures are no longer necessary, the Company shall seek Commission approval to rescind Schedule No. 14.1 to discontinue rationing.

In the event of a water supply shortage requiring a voluntary or mandatory program, the Company shall make available to its customers water conservation kits as required by Rule No. 20. The Company shall notify all customers of the availability of conservation kits.

B. DEFINITIONS

As used in this water rationing plan, the word:

1. "Company" means the Southern California Water Company, California Cities Water, and Arden-Cordova Water Service;
2. "Persons" means an individual customer, resident, business, organizations including commercial, industrial, nonprofit, and government organizations or associations;
3. "Customer" means any person who uses water supplied by the Company;
4. "Water" means water supplied by the Company;

(N)

Rule No. 14.1

(N)

MANDATORY WATER CONSERVATION, RESTRICTIONS AND RATIONING PROGRAM
(Continued)



B. DEFINITIONS (Continued)

5. "Water shortage emergency" means the conditions which constitute a determination that deliveries of potable water supplies have reached a level such that continued unrestricted water use would be detrimental to the public welfare.

C. CONSERVATION – NON-ESSENTIAL OR UNAUTHORIZED WATER USE

No customer shall use Company–supplied water for non-essential or unauthorized uses as defined as follows:

1. Use of water through any connection when the Company has notified the customer in writing to repair a broken or defective plumbing, sprinkler, watering or irrigation system and the customer has failed to make such repairs within 5 days after receipt of such notice.
2. Use of water which results in flooding or run-off in gutters, waterways, patios, driveway, or streets.
3. Use of water for washing aircraft, cars, buses, boats, trailers or other vehicles without a positive shut-off nozzle on the outlet end of the hose. Exceptions include washing vehicles at commercial or fleet vehicle washing facilities operated at fixed locations where equipment using water is properly maintained to avoid wasteful use.
4. Use of water through a hose for washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas in a manner which results in excessive run-off or waste.
5. Use of water for watering streets with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.
6. Use of water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
7. Use of water for more than minimal landscaping in connection with any new construction.
8. Use of water for outside plants, lawn, landscape, and turf areas more often than every other day, with even numbered addresses watering on even numbered days of the month and odd numbered addresses watering on the odd numbered days of the month, except that this provision shall not apply to commercial nurseries, golf courses and other water-dependent industries.
9. Use of water for watering outside plants, lawn, landscape and turf areas during certain hours if and when specified in the applicable Schedule No. 14.1 when the schedule is in effect.
10. Use of water for watering outside plants and turf areas using a hand-held hose without a positive shut-off valve.
11. Use of water for decorative fountains or the filling or topping off of decorative lakes or ponds. Exceptions are made for those decorative fountains, lakes, or ponds which utilize recycled water. (N)

(Continued)

Rule No. 14.1

(N)

MANDATORY WATER CONSERVATION, RESTRICTIONS AND RATIONING PROGRAM
(Continued)



C. CONSERVATION – NON-ESSENTIAL OR UNAUTHORIZED WATER USE (Continued)

12. Use of water for the filling or refilling of swimming pools.
13. Service of water by any restaurant except upon the request of the patron.

D. RATIONING OF WATER USE

In the event the conservation measures required by Section C are insufficient to control the water shortage, the Company shall, upon Commission approval, impose mandatory conservation and rationing. Rationing shall be in accordance with the conditions set forth in the applicable Schedule No. 14.1 as filed at the time such rationing is approved by the Commission.

Before mandatory conservation and rationing is authorized by the Commission, the Company shall hold public meetings and take all other applicable steps required by Sections 350 through 358 of the California Water Code.

E. ENFORCEMENT OF MANDATORY CONSERVATION AND RATIONING

1. The water use restrictions of the conservation program, in Section C of this rule, become mandatory when the rationing program goes into effect. These restrictions are applicable whether or not the customer exceeds the monthly water allocation.

2. The Company may, after one verbal and one written warning, install a flow-restricting device on the service line of any customer observed by Company personnel to be using water for any non-essential or unauthorized use as defined in Section C above.

3. A flow restrictor shall not restrict water delivery by greater than 50% of normal flow and shall provide the premise with a minimum of 6 Ccf/month. The restricting device may be removed only by the Company, only after a three-day period has elapsed, and only upon payment of the appropriate removal charge as set forth in the applicable Schedule No 14.1.

4. After the removal of the restricting device, if any non-essential or unauthorized use of water shall continue, the Company may install another flow-restricting device. This device shall remain in place until water supply conditions warrant its removal and until the appropriate charge for removal has been paid to the Company.

5. Each customer's water allocation shall be shown on the water bill. Water allocations may be appealed in writing as provided in Section F of this Rule. If a customer uses water in excess of the allocated amount, the utility may charge the excess usage penalty shown in the applicable Schedule No. 14.1.

(N)

(Continued)

Rule No. 14.1

(N)

MANDATORY WATER CONSERVATION, RESTRICTIONS AND RATIONING PROGRAM
(Continued)



E. ENFORCEMENT OF MANDATORY CONSERVATION AND RATIONING (Continued)

6. Any money collected by the Company through water use violation fines shall not be accounted for as income, but shall be accumulated by the Company in a separate account for disposition as directed or authorized from time to time by the Commission.

7. The charge for removal of a flow-restricting device shall be in accordance with the applicable Schedule No. 14.1.

F. APPEAL PROCEDURE

Any customer who seeks a variance from any of the provisions of this water conservation and rationing plan shall notify the Company in writing, explaining in detail the reason for such a variation. The Company shall respond to each such request.

Any customer not satisfied with the Company's response may file an appeal with the staff of the Commission. The customer and the Company will be notified of the disposition of such appeal by letter from the Executive Director of the Commission.

If the customer disagrees with such disposition, the customer shall have the right to file a formal complaint with the Commission. Except as set forth in this Section, no person shall have any right or claim in law or in equity, against the Company because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of this water conservation and rationing plan.

G. PUBLICITY

In the event the Company finds it necessary to implement this plan, it shall notify customers and hold public hearings concerning the water supply situation, in accordance with Chapter 3, Water Shortage Emergencies, Section 350 through 358, of the California Water Code. The Company shall also provide each customer with a copy of this plan by means of billing inserts or special mailings; notifications shall take place prior to imposing any fines associated with this plan. In addition, the Company shall provide customers with periodic updates regarding its water supply status and the results of customers' conservation efforts. Updates may be by bill insert, special mailing, poster, flyer, newspaper, television or radio spot/advertisement, community bulletin board, or other appropriate methods.

(N)

# Appendix G
# Rate Schedule

Schedule No. ME-1

Metropolitan District

GENERAL METERED SERVICE

APPLICABILITY

Applicable to all metered water service.

TERRITORY

Portions of the Cities of Artesia, Bell, Bell Gardens, Carson, Cerritos, Compton, Cudahy, Culver City, Downey, El Segundo, Gardena, Hawaiian Gardens, Hawthorne, Huntington Park, Inglewood, Lakewood, La Mirada, Lawndale, Long Beach, Norwalk, Paramount, Santa Fe Springs, South Gate, and the communities of Athens, Lennox, and Moneta and vicinity, Los Angeles County, and portions of the City of Los Alamitos, Orange County.

RATES

Quantity Rates:

For all water delivered, per 100 cu. ft..... $ 1.9790

| Service Charge: | Per Month | Surcredit | |
|---|---|---|---|
| For 5/8 x 3/4-inch meter..... | $ 15.70 | $0.80 | (N) |
| For 3/4-inch meter..... | 23.55 | $1.15 | (N) |
| For 1-inch meter..... | 39.25 | $1.90 | (N) |
| For 1 1/2 inch meter..... | 78.45 | $4.00 | (N) |
| For 2-inch meter..... | 126.00 | $6.35 | (N) |
| For 3-inch meter..... | 235.00 | $11.85 | (N) |
| For 4-inch meter..... | 392.00 | $19.80 | (N) |
| For 6-inch meter..... | 785.00 | $39.60 | (N) |
| For 8-inch meter..... | 1,255.00 | $63.90 | (N) |
| For 10-inch meter..... | 1,804.00 | $96.00 | (N) |

The service charge is a readiness-to-serve charge applicable to all metered service and to which is added the charge for water used computed at the Quantity Rates.

SPECIAL CONDITIONS

**1.** All bills are subject to the reimbursement fee set forth on Schedule No. UF. (D)

2. Pursuant to Decision 04-08-053, a surcharge of $0.0690 per Ccf is to be added to the Quantity Rate for a 12-month period, beginning with the effective date of Advice Letter 1182-W, which is (T) January 1, 2005, to recover the difference between the interim rates and actual rates for the (T) period of February 14, 2004 through September 2, 2004.

3 Due to the overcollection in the Balancing-Type Memorandum Account for the period of January 1, (N) 2004 through December 31, 2004, a surcredit will be applied to the service charges for a 36-month (N) period, beginning on the effective date of Advice Letter 1188-WA. (N)

Schedule No. ME-3

Metropolitan District

RECLAIMED WATER SERVICE

APPLICABILITY

Applicable to all metered reclaimed (non-potable) water service for irrigation and/or industrial use.

TERRITORY

Portions of the Cities of Artesia, Bell, Bell Gardens, Carson, Cerritos, Compton, Cudahy, Culver City, Downey, El Segundo, Gardena, Hawaiian Gardens, Hawthorne, Huntington Park, Inglewood, Lakewood, La Mirada, Lawndale, Long Beach, Norwalk, Paramount, Santa Fe Springs, South Gate, and the communities of Athens, Lennox, and Moneta and vicinity, Los Angeles County, and portions of the City of Los Alamitos, Orange County.

RATES

Quantity Rates:

For all water delivered, per 100 cu. ft..... $ 1.2380

| | Per Month | Surcredit |
|---|---|---|
| Service Charge: | | |
| For 5/8 x 3/4-inch meter..... | $ 3.90 | $0.60 (N) |
| For 3/4-inch meter..... | 5.20 | $0.90 (N) |
| For 1-inch meter..... | 6.95 | $1.55 (N) |
| For 1 1/2 inch meter..... | 13.10 | $3.10 (N) |
| For 2-inch meter..... | 17.95 | $4.95 (N) |
| For 3-inch meter..... | 84.50 | $9.25 (N) |
| For 4-inch meter..... | 129.00 | $15.45 (N) |
| For 6-inch meter..... | 189.00 | $30.85 (N) |
| For 8-inch meter..... | 258.00 | $49.20 (N) |
| For 10-inch meter..... | 337.00 | $70.95 (N) |

The Service Charge is a readiness-to-serve charge applicable to all metered service and to which is added the charge for water used computed at the Quantity Rates.

SPECIAL CONDITIONS

1. All bills are subject to the reimbursement fee set forth on Schedule No. UF. (D)

2. Pursuant to Decision 04-08-053, a surcharge of $0.0690 per Ccf is to be added to the Quantity Rate for a 12-month period, beginning with the effective date of Advice Letter 1182-W which is (T) January 1, 2005, to recover the difference between the interim rates and actual rates for the period (T) of February 14, 2004 through September 2, 2004.

3. Due to the overcollection in the Balancing-Type Memorandum Account for the period of December 1, (N) 2004 through December 31, 2004, a surcredit will be applied to the service charges for a 36-month (N) period, beginning on the effective date of Advice Letter 1188-WA. (N)

# Appendix H
# Responses to Public Comments

No Public Comments received during Public Review Period.

# Appendix I
# Groundwater Basin Water Rights Stipulation/Judgment

Appendix I

Groundwater Basin Water Rights Stipulation/Judgment

For Culver City System

A copy of the complete document is available for public review during normal business hours at the following location:

Culver City Customer Service Office
Golden State Water Company
10758 Washington Boulevard
Culver City, CA

# Appendix J
# Summary of Population Based on Census Data

**Appendix J: Demographic Information for Culver City System CSA**

**Table J-1: Census Tracts within the Culver City System**

| County | Subregion | City Code | City | Census Tract Number | Percentage of Census Tract in System |
|---|---|---|---|---|---|
| Los Angeles | Westside Cities | 17568 | Culver City city | 702400 | 100% |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702700 | 100% |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702801 | 100% |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702802 | 100% |
| Los Angeles | Westside Cities | 17568 | Culver City city | 703001 | 100% |
| Los Angeles | Westside Cities | 99999 | Unincorporated | 703001 | 10% and 30%[1] |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702501 | 100% |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702502 | 100% |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702600 | 100% |
| Los Angeles | LA City | 44000 | Los Angeles city | 275601 | 13% |

Note[1]: School bulding, 0% was taken for population, 10% for household and 30% for employment

**Table J-2: Population, Household and Employment Projections for Year 2000, 2005, 2010, 2015, 2020, 2025 and 2030 for Culver City System CSA**
**Culver City System CSA Population, Household and Employment Estimates for 2000**

| County | Subregion | City Code | City | Census Tract Number | Total Population | Number of Households | Total Employees |
|---|---|---|---|---|---|---|---|
| Los Angeles | Westside Cities | 17568 | Culver City city | 702400 | 4818 | 1908 | 10046 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702700 | 3308 | 1281 | 1535 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702801 | 5154 | 1918 | 10311 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702802 | 2268 | 886 | 1316 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 703001 | 5496 | 3079 | 9653 |
| Los Angeles | Westside Cities | 99999 | Unincorporated | 703001 | 0 | 0 | 394 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702501 | 4694 | 2123 | 2309 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702502 | 4106 | 2070 | 4628 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702600 | 6079 | 2280 | 4532 |
| Los Angeles | LA City | 44000 | Los Angeles city | 275601 | 410 | 170 | 841 |

**Culver City System CSA Population, Household and Employment Estimates for 2005**

| County | Subregion | City Code | City | Census Tract Number | Total Population | Number of Households | Total Employees |
|---|---|---|---|---|---|---|---|
| Los Angeles | Westside Cities | 17568 | Culver City city | 702400 | 5035 | 1918 | 10149 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702700 | 3486 | 1289 | 1590 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702801 | 5154 | 1922 | 10368 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702802 | 2542 | 889 | 1368 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 703001 | 5810 | 3110 | 9830 |
| Los Angeles | Westside Cities | 99999 | Unincorporated | 703001 | 0 | 0 | 395 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702501 | 4796 | 2142 | 2339 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702502 | 4169 | 2091 | 4680 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702600 | 6148 | 2285 | 4604 |
| Los Angeles | LA City | 44000 | Los Angeles city | 275601 | 437 | 171 | 899 |

**Culver City System CSA Population, Household and Employment Estimates for 2010**

| County | Subregion | City Code | City | Census Tract Number | Total Population | Number of Households | Total Employees |
|---|---|---|---|---|---|---|---|
| Los Angeles | Westside Cities | 17568 | Culver City city | 702400 | 5082 | 1948 | 11207 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702700 | 3486 | 1299 | 2157 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702801 | 5208 | 1960 | 10951 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702802 | 2542 | 904 | 1876 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 703001 | 5870 | 3160 | 11645 |
| Los Angeles | Westside Cities | 99999 | Unincorporated | 703001 | 0 | 0 | 406 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702501 | 4838 | 2161 | 2651 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702502 | 4207 | 2124 | 5207 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702600 | 6218 | 2315 | 5340 |
| Los Angeles | LA City | 44000 | Los Angeles city | 275601 | 437 | 175 | 1480 |

**Culver City System CSA Population, Household and Employment Estimates for 2015**

| County | Subregion | City Code | City | Census Tract Number | Total Population | Number of Households | Total Employees |
|---|---|---|---|---|---|---|---|
| Los Angeles | Westside Cities | 17568 | Culver City city | 702400 | 5110 | 1994 | 11655 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702700 | 3504 | 1326 | 2259 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702801 | 5238 | 2006 | 11466 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702802 | 2555 | 923 | 2068 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 703001 | 5901 | 3225 | 12015 |
| Los Angeles | Westside Cities | 99999 | Unincorporated | 703001 | 0 | 0 | 413 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702501 | 4864 | 2198 | 2747 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702502 | 4230 | 2176 | 5382 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702600 | 6252 | 2363 | 5501 |
| Los Angeles | LA City | 44000 | Los Angeles city | 275601 | 448 | 194 | 1499 |

**Culver City System CSA Population, Household and Employment Estimates for 2020**

| County | Subregion | City Code | City | Census Tract Number | Total Population | Number of Households | Total Employees |
|---|---|---|---|---|---|---|---|
| Los Angeles | Westside Cities | 17568 | Culver City city | 702400 | 5138 | 2041 | 12084 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702700 | 3523 | 1353 | 2357 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702801 | 5267 | 2052 | 11960 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702802 | 2567 | 943 | 2253 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 703001 | 5931 | 3292 | 12369 |
| Los Angeles | Westside Cities | 99999 | Unincorporated | 703001 | 0 | 0 | 420 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702501 | 4890 | 2236 | 2840 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702502 | 4252 | 2230 | 5550 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702600 | 6285 | 2412 | 5654 |
| Los Angeles | LA City | 44000 | Los Angeles city | 275601 | 458 | 214 | 1517 |

**Culver City System CSA Population, Household and Employment Estimates for 2025**

| County | Subregion | City Code | City | Census Tract Number | Total Population | Number of Households | Total Employees |
|---|---|---|---|---|---|---|---|
| Los Angeles | Westside Cities | 17568 | Culver City city | 702400 | 5165 | 2092 | 12482 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702700 | 3540 | 1380 | 2448 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702801 | 5296 | 2101 | 12418 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702802 | 2580 | 965 | 2425 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 703001 | 5959 | 3356 | 12697 |
| Los Angeles | Westside Cities | 99999 | Unincorporated | 703001 | 0 | 0 | 426 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702501 | 4914 | 2273 | 2926 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702502 | 4274 | 2281 | 5705 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702600 | 6317 | 2459 | 5796 |
| Los Angeles | LA City | 44000 | Los Angeles city | 275601 | 472 | 242 | 1534 |

**Culver City System CSA Population, Household and Employment Estimates for 2030**

| County | Subregion | City Code | City | Census Tract Number | Total Population | Number of Households | Total Employees |
|---|---|---|---|---|---|---|---|
| Los Angeles | Westside Cities | 17568 | Culver City city | 702400 | 5191 | 2143 | 12854 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702700 | 3556 | 1406 | 2534 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702801 | 5324 | 2151 | 12845 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702802 | 2591 | 985 | 2584 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 703001 | 5987 | 3421 | 13003 |
| Los Angeles | Westside Cities | 99999 | Unincorporated | 703001 | 0 | 0 | 431 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702501 | 4938 | 2310 | 3006 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702502 | 4294 | 2334 | 5850 |
| Los Angeles | Westside Cities | 17568 | Culver City city | 702600 | 6347 | 2506 | 5929 |
| Los Angeles | LA City | 44000 | Los Angeles city | 275601 | 486 | 270 | 1549 |