URBAN WATER MANAGEMENT PLAN

2010 UPDATE

Zone 3

A Wholesale Water Agency

SAN LUIS OBISPO COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Prepared By:
Wallace Group
June 2011

WALLACE GROUP

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EXECUTIVE SUMMARY

Introduction

This Urban Water Management Plan (UWMP) 2010 Update has been prepared in response to the Urban Water Management Planning Act (Act), California Water Code Sections 10610 through 10650. The Act was adopted by the California Legislature as Assembly Bill (AB) 797 during the 1983-84 session and signed into law on January 1, 1984. The Act requires that "every urban water supplier shall prepare and adopt an Urban Water Management Plan". Urban water supplier is defined as "a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly (wholesale agencies) to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually". In addition to AB 797, several other regulations impact the development of the UWMP. They include Senate Bill (SB) 610: Water Supply Assessments, SB 221: Written Verifications of Water Supply, AB 1420: Implementation of Water Demand Management Measures, and SBX7-7: Water Conservation Bill of 2009. To further assist those agencies required to prepare UWMPs, and in response to these recent legislative requirements, the California Department of Water Resources (DWR) has issued the "Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan" (Guidebook). This guidance document was used and referenced in preparation of this UWMP; the formatting and content of this UWMP conforms to the suggested format contained in this guidance document for ease of review by DWR.

The San Luis Obispo County Flood Control and Water Conservation District prepared this UWMP 2010 Update for Flood Zone 3, which operates Lopez Reservoir and provides wholesale water to its contracting retail water agencies (Contract Agencies). The communities served by water from Lopez Reservoir include the communities of Oceano, Grover Beach, Pismo Beach, Arroyo Grande, Avila Beach Community Services District, and County Service Area (CSA) 12 (which includes Port San Luis). The Lopez Dam was built to supplement local groundwater supplies.

The normal UWMP submittal cycle requires that the Urban Water Management Plans be prepared and adopted by each urban water supplier, and then submitted to DWR in years ending in five and zero. However, because of the recent changes in UWMP requirements since 2005, State law has extended the deadline for the 2010 UWMP to July 1, 2011. Although submitted in 2011, the UWMP will still be referred to as the 2010 UWMP. The California Environmental Quality Act (CEQA) does not apply to the preparation and adoption of Urban Water Management Plans (Water Code Section 10652).

Background

This 2010 UWMP Update was prepared by Wallace Group, with input and review by District staff. The 2005 UWMP formed the basis for this 2010 Update, in conjunction with new requirements described in the Guidebook which addresses requirements for retailers and wholesalers, a suggested outline and format for tables, explanation of the various components of the UWMP, and incorporating new regulations and requirements. Shortly after the process for updating this UWMP began, the DWR issued comments (on March 15, 2011) to the Lopez

Zone 3 2005 UWMP deeming the 2005 UWMP as incomplete. Wallace Group and District staff reviewed DWR's comments, the Guidebook and corresponding sections of the California Water Code, to prepare this 2010 UWMP Update, and reviewed DWR comments with DWR staff to seek clarification.

2010 UWMP Notification Requirements

This 2010 UWMP Update required not only updates to information on the Zone 3 water supply itself, but also sought input from various agencies including the Contract Agencies, and local interest groups in the Zone 3 area. The County complied with the coordination and outreach efforts by posting the draft 2010 UWMP on the County's web site, the County library, and by notifying each Contract Agency of the County's intent to update the 2010 UWMP. This notification letter also served as the 60-day noticing required by the Water Code.

The draft UWMP was publicly noticed, agendized and discussed at the May 19, 2011 public meeting of the Zone 3 Advisory Committee (officials and representatives of each of the retail water purveyors served by Zone 3). This 2010 UWMP was also discussed at the May 5, 2011 and the June 2, 2011 Zone 3 Technical Advisory Committee (TAC) (which includes technical representatives of each Zone 3 retail water agency contractor), and on June 2, 2011, the TAC supported bringing the draft UWMP to the County Board of Supervisors for adoption on June 21, 2011.

Plan Adoption

The 2010 UWMP will be considered for adoption by the Board of Supervisors at the June 21, 2011 BOS hearing, and then will be submitted to DWR within 30 days of adoption. In addition to submitting this UWMP to DWR, one plan will be submitted to the California State Library, and an electronic copy will be filed with the County of San Luis Obispo public library. Cities within the Zone 3 service area (City of Pismo Beach, City of Arroyo Grande, City of Grover Beach) will also be provided with an electronic copy of the UWMP. The final 2010 UWMP will also be posted at the District's web site.

Plan Elements

The draft 2010 UWMP includes a significant amount to detail regarding the background of the Zone 3 entity, and information on Contract Agencies, service area physical description, history and climate. Such information did not appreciably change from the 2005 UWMP, and thus was not summarized in this Executive Summary.

<u>Past Drought, Water Demand and Conservation Information</u>. Periodic droughts have occurred in the region since the completion of Lopez Reservoir. However, these droughts have not caused a shortage of water in the Lopez system. Entitlements to Zone 3 water are based on a percentage of the safe yield of the reservoir. The reservoir's safe yield is 8,730 acre-feet per year (AFY). Of that amount, 4,530 AFY are for pipeline deliveries to Contract Agencies, and 4,200 AFY are reserved for downstream releases to maintain flows in Arroyo Grande Creek.

<u>Service Area Population</u>. The current population in the Zone 3 service area is estimated at a total of 47,696 people, and is expected to rise to over 53,000 people in the Year 2030. Irrespective of population growth and changing water demands, the Lopez Zone 3 allocations to Contract Agencies will remain at the current pipeline delivery quantity of 4,530 AFY, unless Contract Agencies implement a project to enhance safe yield of Lopez Reservoir in future years.

Water Demands. The water demands, actual and projected, are provided in Tables 3 and 5, respectively. The water demand in Zone 3 is equivalent to the water entitlements for each Contract Agency, totaling 4,530 AFY. For information regarding water demand, by land use category within each Contract Agency's service area, refer to their individual urban water management plans. The 4,200 AFY dedicated to environmental releases is not expected to change over the years.

Table 3
Water Deliveries – Actual (AFY)

	2005	2010
City of Pismo Beach	645	842
Oceano CSD	306	203
City of Grover Beach	787	773
City of Arroyo Grande	2,289	2,246
CSA 12	119	125
Total	**4,146**	**4,189**

Table 5
Water Deliveries – Projected
Acre-Feet

	2015	2020	2025	2030
City of Pismo Beach	896	896	896	896
Oceano CSD	303	303	303	303
City of Grover Beach	800	800	800	800
City of Arroyo Grande	2,290	2,290	2,290	2,290
CSA 12	241	241	241	241
Total	**4,530**	**4,530**	**4,530**	**4,530**

Water Use Reduction Plan. The District does not have authority to propose or enforce measures, programs, and policies to help achieve the water use reductions required by the California Water Code. Please see individual urban water management plans for each Contract Agency measures, programs, and policies.

Baselines and Targets. As a wholesale water agency, the District does not have per capita baseline data available, and each contract agency will provide this information in their respective UWMP updates.

Water Supply. Lopez Reservoir has a capacity of 49,388 acre-feet (AF) and provides both water supply and recreational uses. Lopez Reservoir consists of about 164,000 acres, and is located primarily within the Arroyo Grande Creek drainage area. The Dam and Reservoir were constructed on Arroyo Grande Creek, approximately 6 miles upstream from the community of Arroyo Grande. Construction on the project started in May 1967, and was completed in January 1969. A seismic retrofit of the dam was completed in 2002. The buried steel transmission

main, ranging in diameter from 20-inch to 30-inch, extends a total length of 16 miles to carry water from the dam to the 844 acre-foot terminal reservoir, and from the 6 million gallon per day (mgd) treatment plant to Contract Agencies in the Five Cities (Arroyo Grande, Grover Beach, Oceano, Pismo Beach and Avila Beach) area and CSA 12.

As previously noted, the Safe Yield of Lopez Reservoir is 8,730 AFY, which reflects the sustainable water supply during a drought. The safe yield is derived from two historical studies: Lopez Project Hydrology Review conducted in June 1962 and Hydrologic Balance of Arroyo Grande Groundwater Basin conducted in November 1962. The reservoir is operated to stay within the safe yield. Over half of the project's safe yield (4,530 AFY) has been apportioned by agreements to Contract Agencies that are primarily municipal water purveyors. The remaining 4,200 AFY is reserved for downstream releases to maintain stream flows and groundwater recharge downstream. Management of the releases has generally resulted in releases less than the 4,200 AFY; this water is periodically offered to the Contract Agencies as surplus water.

Table 16
Water Supplies – Current and Projected (AFY)

	2010	2015	2020	2025	2030
City of Pismo Beach	842	896	896	896	896
Oceano CSD	203	303	303	303	303
City of Grover Beach	773	800	800	800	800
City of Arroyo Grande	2,246	2,290	2,290	2,290	2,290
CSA 12	125	241	241	241	241
Downstream Releases	3,153	4,200	4,200	4,200	4,200
Surplus Water[1]	**1,388**	**0**	**0**	**0**	**0**
Total	**8,730**	**8,730**	**8,730**	**8,730**	**8,730**

[1]As presented in Table 16, it is assumed that in the future, 4,200 AFY will be reserved for downstream releases and no surplus water will be available to Contract Agencies. In actuality, when less water is released from Lopez Reservoir for downstream releases, surplus water may be made available.

Groundwater. The District is a wholesaler of water exclusively from Lopez Reservoir. The District has no plans to develop groundwater supplies as an additional source of water to its Contract Agencies. While the District has no direct control over groundwater resources, it does support the efforts of its contract agencies to reduce overdraft, implement conjunctive use projects and groundwater storage and banking programs to optimize and best manage their groundwater sources.

Transfer Opportunities. The District recently completed two separate hydraulic studies to determine if additional capacity exists in the Central Coast Water Authority (CCWA) State Water

Pipeline for supplemental water deliveries to CCWA subscribers, including Contract Agencies (served via the Lopez Pipeline). The first hydraulic study focused specifically on the Lopez Pipeline, while the second hydraulic study (report was issued draft in April 2011) modeled the entire CCWA pipeline delivery system. This latter report is still under review. Preliminary results indicate the potential for a marginal increase in deliveries of approximately 12% (~300 AFY); however, this study is still under review and not final at this time. Thus, at this time, it is not certain to what extent excess deliveries of State Water (and Lopez Water) might be able to be delivered through the Lopez Pipeline.

Desalinated Water Opportunities. A few agencies within the Zone 3 service area have considered use of desalinated water to meet their growing water needs. As a wholesale entity focused solely on delivery of Lopez water to Contract Agencies, the District is not pursuing such opportunities; however, the District does support Contract Agencies' efforts in this regard.

In 2008, two of the Contract Agencies served by the District (the City of Arroyo Grande, the City of Grover Beach), and the Oceano Community Services District (not a Contract Agency), jointly participated in the detailed evaluation of a potential 2,300 AFY seawater desalination project to supplement their existing potable water sources. After careful consideration of the findings of this report, the Contract Agencies are no longer pursuing desalination as a viable water supply alternative. However, the need for augmenting water supplies for the future is still a key concern, particularly with the City of Arroyo Grande.

Recycled Water Opportunities. There are three wastewater treatment plants serving Zone 3 contract agencies, as follows:

- South San Luis Obispo County Sanitation District (SSLOCSD) WWTP, serving the Cities of Arroyo Grande and Grover Beach, and Oceano CSD.
- City of Pismo Beach WWTP, serving the City of Pismo Beach.
- Avila Beach CSD WWTP, serving the Avila Beach CSD and Port San Luis.

Various recycled water studies have been conducted by the Contract Agencies over the years to evaluate the feasibility of providing recycled water in the Zone 3 area. Although currently there are no recycled water projects operating in Zone 3, Contract Agencies are projecting recycled water to be included in future water supply portfolios. Future recycled water projects may include landscape irrigation for parks, schools, golf courses and other facilities, and possibly agricultural irrigation of local crop lands. Other options may still be viable, such as local groundwater recharge, potential use for seawater barriers and groundwater protection, and other uses. Projected recycled water use by contract agencies in the future is difficult to project at this time. However, it is conceivable that some 4,000 AFY or more of recycled water could be utilized in future years.

Future Water Projects. In 2008/2009, the Contract Agencies commenced with a study and evaluation to consider raising the spillway elevation of Lopez Reservoir, as a means of increasing safe yield in the reservoir and thus increasing water supply entitlements to the Contract Agencies. It is emphasized that this effort is funded by the Contract Agencies, not the District. The initial phase of this study was completed in 2009; however, this study for additional water supply is on-going at this time. This is the only identified potential water supply project directly related to the Lopez Reservoir water supply. Other opportunities, such as recycled water projects and water conservation are discussed in other sections of this 2010 UWMP Update.

The project study is considering raising the spillway of Lopez Dam from 3 to 5 feet. This would increase gross reservoir storage by at least 2,850 AF, and annual yield was estimated to be increased by 671 to 1,371 AF. However, based on evaluation of historic drought years, the safe yield for a 3 foot raise in elevation would be on the order of only 250 AFY. The next phase of this study is currently under way and expected to be completed later this year.

Water Supply Reliability. The Lopez Reservoir is a very reliable source of water. The annual safe yield of the reservoir is 4,200 AFY greater than the entitlements held by Contract Agencies, and thus provides some drought buffer. Demand within Zone 3 is equivalent to the entitlements held by the Contracting Agencies. The entitlements to Lopez Reservoir will remain constant at 4,530 AFY through the year 2030, unless a future water supply project to raise the reservoir spillway is employed. Historically, during the largest drought years on record since the Reservoir has been in operation, the District has been able to deliver full allocations to contract agencies.

In years when surplus water is available from Lopez Reservoir (water is not released downstream), the actual demand may be higher to reflect purchases from the surplus account. In addition to the entitlements held by the Contract Agencies, the District reserves water for downstream releases to maintain flows in the Creek. In a normal year, 4,200 AFY are reserved for downstream releases. The actual amount of water released depends on conditions in the Creek and water available from the Lopez Reservoir.

The District has prepared a draft Habitat Conservation Plan (HCP) (2004) for the Lopez Dam project to comply with the Endangered Species Act, and provide incidental take authorization for steelhead and red-legged frogs resulting from District operations and maintenance activities affecting Arroyo Grande Creek. Through this draft HCP, and current operations to supply water to contract agencies, agricultural interests, and environmental enhancement, the District fulfills its contract obligations to supply potable water allocations and to maintain adequate downstream releases for protection of steelhead, red-legged frogs, and other environmentally sensitive biota.

Water Shortage Contingency Planning. The District recognizes the potential for a catastrophic interruption of supply, which may result from an earthquake, regional power outage or terrorist attack. The water plant is fully automated and equipped with a complete Supervisory Controls and Data Acquisition (SCADA) system to keep the plant processes under control and constantly monitored. However, in the event of a water treatment process disruption at the Lopez Water Treatment Plant, the clearwell is 2.25 million gallons in volume, which equates to about 12 hours of storage. Thus, District staff does need to work diligently to ensure the plant processes come back on line expeditiously. However, it is also noted that each contract agency provides their own emergency water storage within their respective water distribution systems. In addition, the clearwell directly receives State Water which is delivered to State Water Contractors through the Lopez pipeline.

In the event of a wide-spread power outage, the Lopez WTP is equipped with a 900 kW emergency generator, sufficient to power the entire water treatment plant thus ensuring continued operations at the plant. Delivery of Lopez water is by gravity, and thus power is not needed to continue serving water to Contract Agencies.

Earthquakes and other events have the potential to disrupt the Lopez water transmission line. Should such disruption or line breakage occur, the District contracts with local contractors on an

as-needed basis to quickly respond to emergency repairs. Such contractors are fully equipped with labor, equipment and materials to quickly repair damage to pipelines. The District has prepared a 5-year capital improvement plan, which includes funding for future SCADA improvements to the Lopez transmission main. It is expected that this SCADA system will be funded and implemented 2014 to 2015, and once completed, the system will allow for remote monitoring of the pipeline to verify operating conditions and abnormal conditions such as loss of system pressure and leakage from the pipeline. Such improvements will allow for immediate identification of problems in the transmission system, quick response to isolate reaches of pipeline, and provide the ability to notify Contract Agencies should conditions warrant such actions.

Water Quality. The District is responsible for operation and regulatory compliance of the Lopez Water Treatment Plant (WTP). One of the District's goals is to ensure the safety of the public by meeting current and impending regulations established by the State of California. The Lopez WTP meets current standards.

Drought Planning. The District has prepared an Interim Downstream Release Schedule (IDRS) and plan to optimize storage and stream/reservoir management, to meet the needs of municipal, agricultural and environmental demands prior to the approval of the Project's Habitat Conservation Plan (HCP). This Plan includes a Low Reservoir Response Plan (LRRP) consisting of a methodology to assess near-term reservoir levels and a set of actions that could be taken to mitigate the impacts of low reservoir levels (should reservoir levels reach a threshold of 20,000 AF). However, it should be noted that this program, should it prove successful, is not being employed to increase municipal supplies beyond current contractual allocations.

Demand Management Measures (DMMs). The District is the wholesale agency created solely to provide potable water from Lopez Reservoir to five nearby contracting communities in the County. Two of these communities are small and fall below the threshold for preparation of an urban water management plan, though they actively promote water efficiency. Each of these communities has taken different approaches that are most appropriate to their situation. The details of these measures are described within documents prepared by those agencies. For the three larger communities (City of Pismo Beach, City of Grover Beach, City of Arroyo Grande) these measures are also described within their corresponding individual UWMPs.

The District, however, does encourage conservation and cooperates with these individual retailers. The District is also currently investigating new ways to promote conservation and is considering signing the statewide Memorandum of Understanding for Urban Water Conservation and will propose to its member agencies a joint conservation and urban water management planning for the 2010 plan. Conservation efforts in the County are more fully described in the District's Integrated Regional Water Management Plan.

Details of each applicable DMM are included in this 2010 UWMP Update. As a wholesale agency Zone 3 is obligated to address DMMs C, D, G, H, J, L, as follows:

- DMM C – System Water Audits, Leak Detection and Repair
- DMM D – Metering With Commodity Rates for All New Connections and Retrofit of Existing Connections
- DMM G – Public Information Programs
- DMM H – School Education Programs

- DMM J – Wholesale Agency Assistance Programs
- DMM L – Conservation Coordinator

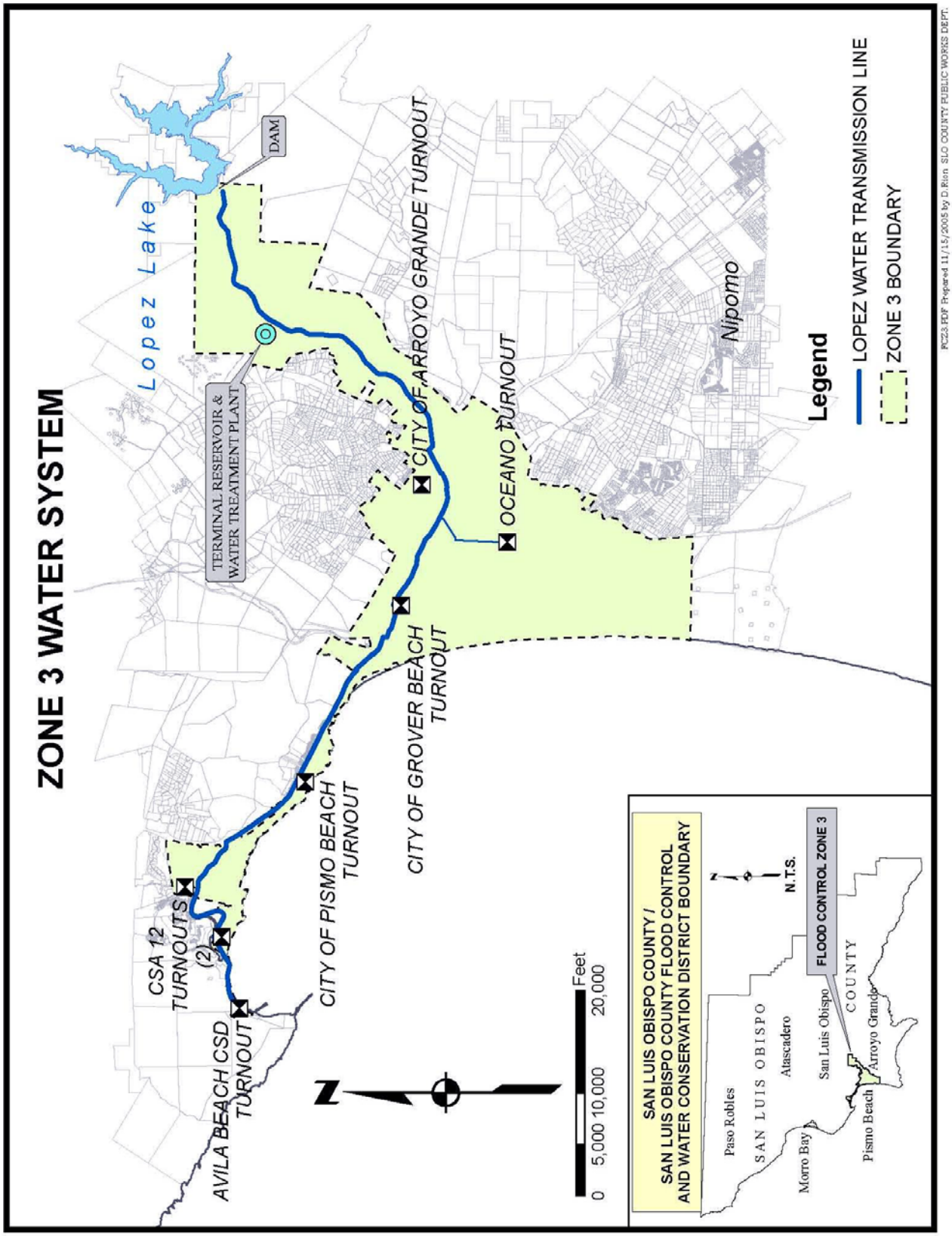
INTRODUCTION

This Urban Water Management Plan (UWMP) has been prepared in response to the Urban Water Management Planning Act (Act), California Water Code Sections 10610 through 10650. The Act was adopted by the California Legislature as Assembly Bill (AB) 797 during the 1983-84 session and signed into law on January 1, 1984. The Act requires that "every urban water supplier shall prepare and adopt an Urban Water Management Plan". Urban water supplier is defined as "a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly (wholesale agencies) to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually". In addition to AB 797, several other regulations impact the development of the UWMP. They include Senate Bill (SB) 610: Water Supply Assessments, SB 221: Written Verifications of Water Supply, AB 1420: Implementation of Water Demand Management Measures, and SBX7-7: Water Conservation Bill of 2009. To further assist those agencies required to prepare UWMPs, and in response to these recent legislative requirements, the California Department of Water Resources (DWR) has issued the "Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan". This guidance document was used and referenced in preparation of this UWMP; the formatting and content of this UWMP conforms to the suggested format contained in this guidance document for ease of review by DWR.

The San Luis Obispo County Flood Control and Water Conservation District (District) prepared this UWMP 2010 Update for Flood Control Zone 3. Zone 3 of the District funds the operations of the Lopez Project, which includes Lopez Lake and Dam, Lopez Terminal Reservoir, Lopez Water Treatment Plant, and the distribution system, and provides wholesale water to its contracting retail water agencies (Contract Agencies). The communities served by water from Lopez Reservoir include the communities of Oceano, Grover Beach, Pismo Beach, Arroyo Grande, Avila Beach Community Services District (CSD)/Port San Luis Harbor, and County Service Area (CSA) 12 (hereinafter referred to as CSA 12) (in the Avila Beach area). The Lopez Dam was built to supplement local groundwater supplies. Figure 1 depicts the boundary of Flood Control Zone 3 (hereinafter referred to as Zone 3), and depicts the Zone 3 water system and Contract Agencies. Staff of the San Luis Obispo County Public Works Department perform the day-to-day operations and maintenance of Zone 3 facilities, and also support other related efforts.

The normal UWMP submittal cycle requires that the Urban Water Management Plans be prepared and adopted by each urban water supplier, and then submitted to DWR in years ending in five (5) and zero (0). However, because of recent changes in UWMP requirements since 2005, the State extended the deadline for the 2010 UWMP to July 1, 2011. Although submitted in 2011, the UWMP will still be referred to as 2010 UWMP. California Water Code specifically states that the California Environmental Quality Act (CEQA) does not apply to the preparation and adoption of Urban Water Management Plans (Water Code Section 10652).

Figure 1.


ZONE 3 WATER SYSTEM
Lopez Lake
DAM
TERMINAL RESERVOIR & WATER TREATMENT PLANT
CITY OF ARROYO GRANDE TURNOUT
OCEANO TURNOUT
Nipomo
CITY OF GROVER BEACH TURNOUT
CITY OF PISMO BEACH TURNOUT
CSA 12 TURNOUTS (2)
AVILA BEACH CSD TURNOUT
Legend
LOPEZ WATER TRANSMISSION LINE
ZONE 3 BOUNDARY
0 5,000 10,000 20,000 Feet
SAN LUIS OBISPO COUNTY / SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT BOUNDARY
N.T.S.
FLOOD CONTROL ZONE 3
Paso Robles
SAN LUIS OBISPO
Atascadero
Morro Bay
San Luis Obispo
COUNTY
Arroyo Grande
Pismo Beach
FCZ3.PDF Prepared 11/15/2005 by D.Rion SLO COUNTY PUBLIC WORKS DEPT.

SECTION 1: PLAN PREPARATION

SECTION 1.1: Coordination

As required by the UWMP Act, this section addresses the following items:

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

- *#6. Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision (10621(b)).*

- *#54. The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan (10635(b)).*

- *#55. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan (10642).*

- *#56. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area (10642).*

As part of the preparation of this 2010 UWMP Update, the District coordinated with Zone 3 Contract Agencies. Pertinent sections of this UWMP were provided to the Contract Agencies and also key wastewater agencies (South San Luis Obispo County Sanitation District [SSLOCSD], Avila Beach CSD) for their input, review and comment on the wastewater and recycled water elements contained herein. Contract Agencies were given access to electronic copies of the draft document and were asked to review and comment on the draft UWMP. A summary of coordination activities with Contract Agencies, and other pertinent groups, citizens and agencies, is summarized in Table 1.

On April 7, 2011, the District notified Contract Agencies of their intent to update the 2010 UWMP by July 1, 2011. This letter served as the 60-day noticing required by the Water Code, and also to alert the Contract Agencies the District's consultant (Wallace Group) will be contacting the various agencies for coordination and information sharing. A copy of this letter is included in Appendix A to this UWMP. Furthermore, the District discussed the UWMP update with the Zone 3 Advisory Committee on May 19, 2011.

Table 1
Coordination with Appropriate Agencies

Coordinating Agencies	Participated in Developing UWMP Update	Commented on Draft UWMP	Attended Public Meetings	Was Contacted for Assistance	Was Sent Copy of Draft Plan[3]	Was Sent NOI to Adopt UWMP Update	Not Involved/ No Information
Contract Agencies	City of Pismo Beach	✓	✓	✓	✓	✓	
	City of Arroyo Grande		✓	✓	✓	✓	
	City of Grover Beach	✓	✓	✓	✓	✓	
	Oceano CSD		✓		✓	✓	
	CSA 12		✓	✓	✓	✓	
	Avila Beach CSD		✓	✓	✓	✓	
Other Water Suppliers[1]							
Water Mgt. Agencies[1]						✓	
Relevant Public Agencies[1]		✓				✓	
General Public[1]			✓				
Other (SSLOCSD)[2]				✓	✓		
Other (Zone 3 TAC)[4]		✓	✓	✓	✓	✓	

[1]Outreach to varying interest groups, public and private, were noticed of this UWMP update through the Zone 3 Advisory Committee public meeting held May 19, 2011 meeting.
[2]South San Luis Obispo County Sanitation District, who provides wastewater service to the City of Arroyo Grande, City of Grover Beach, Oceano CSD.
[3]Copy of draft UWMP Update was posted here: www.SLOCountyWater.org/site/Flood Control and Water Conservation District Zones/ZONE 3.
[4]Technical Advisory Committee for Zone 3.

Public Participation:

Per Government Code 6066, publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

The draft Urban Water Management Plan (UWMP) was presented to the Zone 3 Technical Advisory Committee (which includes representatives of each Zone 3 retail water agency contractor) on June 2, 2011 and to the Zone 3 Advisory Committee on May 19, 2011. The Zone 3 Advisory Committee is comprised of officials from each of the retail water purveyors served by Zone 3. The draft UWMP was also posted on the District's web site at this address:

http://www.SLOCountyWater.org/site/Flood Control and Water Conservation District Zones/ZONE 3.

A public hearing to consider adoption of the final UWMP was held by the San Luis Obispo County Board of Supervisors and properly noticed per Government Code 6066. See Appendix A for a copy of the public notice.

SECTION 1.2: Plan Adoption, Submittal, and Implementation

As required by the UWMP Act, this section addresses the following items:

- *#7. The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640) (10621(c)).*

- *#57. After the hearing, the plan shall be adopted as prepared or as modified after the hearing (10642).*

- *#58. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan (10643).*

- *#59. An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption (10644(a)).*

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

Plan Adoption and Submittal:

The District retained Wallace Group to prepare this UWMP. The 2010 UWMP was adopted by the Board of Supervisors on June 21, 2011 and submitted to the California Department of Water Resources (DWR) by July 21, 2011 (within 30 days of adoption). A copy of the Resolution of Plan Adoption signed by the San Luis Obispo County Board of Supervisors and attached to the cover letter addressed to DWR and is included as Appendix A of the UWMP. The UWMP includes all applicable information necessary to meet the requirements of California Water Code Division 6, Part 2.6 (Urban Water Management Planning). In addition to submitting this UWMP to DWR (one hard copy and one electronic copy), one hard copy plan was submitted to the California State Library, and an electronic copy was submitted to the County of San Luis Obispo Planning Department and each Contract Agency with in the Zone 3 service area (City of Arroyo Grande, City of Grover Beach, City of Pismo Beach, Oceano Community Services District, CSA 12, Avila Beach Community Services District and Port San Luis). The Final 2010 UWMP was also posted at the District's web site (listed above), and interested parties were notified of this posting.

Plan Implementation:

The 2010 UWMP will be implemented by the District in accordance with the proposed schedule provided for individual demand management measures identified in Section 6: Demand Management Measures of this UWMP.

SECTION 2: SYSTEM DESCRIPTION

SECTION 2.1: Service Area Physical Description

As required by the UWMP Act, this section addresses the following items:

- *#8. Describe the service area of the supplier (10631(a)).*
- *#9. (Describe the service area) climate (10631(a)).*
-

In addition, this Section provides a brief historical summary of the District.

Service Area

San Luis Obispo County is located on the Central Coast of California between Monterey County, Santa Barbara County and Kern County. The County encompasses 3,300 square miles of land[1], 100-miles of coastline, and has over 260,000 residents. Agriculture, tourism, and recreation are the principal sectors of the local economy. The County was formed in 1850 as one of California's original counties.

Zone 3 was created to operate Lopez Reservoir, and includes the communities of Oceano, Grover Beach, Pismo Beach, Arroyo Grande, and County Service Area (CSA) 12 (including Avila Beach area). Please refer to Figure 2. The Lopez Dam was built to supplement the local groundwater supply. Zone 3 is part of the County's Flood Control and Water Conservation District, which is housed in the County's Department of Public Works.

Zone 3 operates Lopez Reservoir, in the Arroyo Grande Creek watershed (Figure 1), for municipal and agricultural water supplies. Lopez Reservoir provides recreational opportunities including boating, water-skiing, and recreational fishing. The Arroyo Grande Creek watershed provides habitat for fish and wildlife species including anadromous steelhead (*Oncorhynchus mykiss)* and California red-legged frogs *(Rana aurora draytonii)*. Both are listed for protection under the Federal Endangered Species Act. Steelhead habitat is restricted to the reach of Arroyo Grande Creek from Lopez Dam to the Pacific Ocean (Figure 1), a distance of about 13 miles.

Lopez Project operations and maintenance includes:

- Operation of a municipal water treatment plant, including filter backwash water disposal and water sampling activities;
- Routine maintenance of the Lopez Dam, Terminal Reservoir, and distribution system, including debris removal and maintenance of channel road crossings, and sediment removal.
- Seasonally varying water releases to Arroyo Grande Creek for agricultural water supply;
- Operation of the Arroyo Grande Creek stream gauging station; and
- Others

[1] Source: San Luis Obispo Council of Governments, *1999 Regional Profile,* October 1999

County Public Works Department Mission Statement

Provide public facilities and services that ensure health and safety and enhance quality of life for the community.

History

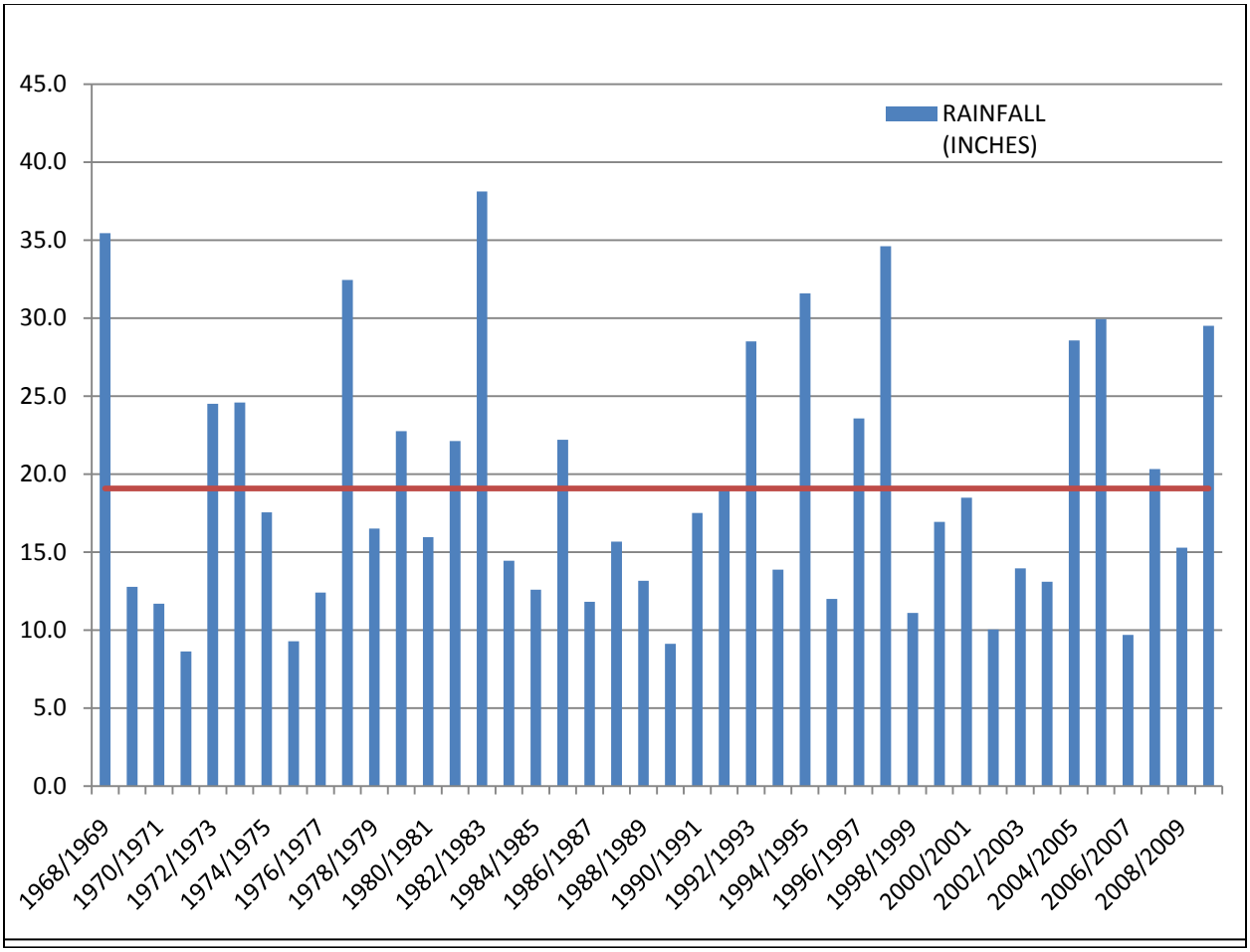
During the 1780's, Mission San Luis Obispo de Tolosa priests farmed vegetables and wheat at the mouth of Lopez Canyon. In the 1870's, Jesus Lopez and his wife homesteaded 320 acres, living off the land as a farmer and woodcutter. The current location of the Lopez Reservoir and Recreation area was part of an old Spanish land grant given to Jose Villavicencia. This property was later sold to the Steele brothers in 1871. A number of ranches and dairies, and a schoolhouse were operated on the property thereafter.

The U.S. Army Corps of Engineers first considered a reservoir and water supply project located in Lopez Canyon in 1917. In 1952, the District entered into an agreement with the California Department of Water Resources to investigate the potential water resources of San Luis Obispo County. The conclusions of the six-year water resources investigation, presented in a 1958 Department of Water Resources report, revived interest in the Lopez Project among the South County water agencies.

Climate

The climate of Zone 3 is coastal with mild and dry summers, cool winters, and an annual average of 19.1 inches of precipitation between 1969 and 2010. Figure 2 depicts the rainfall data collected at Lopez Reservoir (County Rain Station #178.1) at 546 ft elevation between water year (July/June) 1968/1969 and 2009/2010. During the summer months, fog helps reduce irrigation requirements by decreasing evapotranspiration. The normal year evapotranspiration rate (Eto) for the Zone 3 area is approximately 40 inches[2].

Figure 2. Historical Water Year Rainfall Data (Station #178.1)



Past Drought, Water Demand and Conservation Information

Periodic droughts have occurred in the region since the completion of Lopez Reservoir. However, these droughts have not caused a shortage of water in the Lopez system. In the most prolonged drought of 1986-92, all communities within Zone 3 received their full allocation of water from Lopez Reservoir. In addition, in the latest drought, from 2008 to 2011, all communities within Zone 3 also received their full requested allocation of water from Lopez Reservoir. Entitlements to Zone 3 water are based on a percentage of the safe yield of the reservoir. The reservoir's safe yield is 8,730 acre-feet per year (AFY) as discussed in Section 4.1. Of that amount, 4,530 AFY are for pipeline deliveries and up to 4,200 AFY are reserved for downstream releases.

As stated, more than 50% of the safe yield is delivered to communities in Zone 3, and the remaining supply is released downstream as required to maintain flows in Arroyo Grande Creek. Historically, not all of the water set aside for the downstream releases was actually released since excess water would have flowed into the ocean. In years past, allowing flows to the ocean was considered a waste of water and was therefore discouraged throughout the State. Releases were limited to what was needed to maintain flow in the creek to provide adequate groundwater recharge for the agricultural interests along Arroyo Grande Creek. Any surplus water was banked for the following year, when it could be sold to the Zone 3 communities requesting it. During the drought, Zone 3 communities whose deliveries from other sources were short, were able to purchase surplus Zone 3 Water. In addition to Lopez supplies, local communities have used groundwater as a back-up supply.

SECTION 2.2: Service Area Population

As required by the UWMP Act, this section addresses the following items:

- *#10. (Describe the service area) current and projected population. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . . (10631(a)).*

- *#11. (population projections) shall be in five-year increments to 20 years or as far as data is available (10631(a)).*

- *#12. Describe other demographic factors affecting the supplier's water management planning (10631(a)).*

Table 2 shows the population total for Zone 3 Contract Agencies from 2010 through 2030.

The District is a wholesale water provider. Details regarding housing, employment, demographics, etc. will be addressed by the Contract Agencies in their corresponding urban water management plans. Demographic factors do not affect the water management planning for Zone 3.

Table 2 Population – Current and Projected					
Contract Agencies	**Population**				
	2010	**2015**	**2020**	**2025**	**2030**
City of Pismo Beach[1]	8,603	8,752	8,900	9,170	9,505
City of Arroyo Grande[2]	17,252	18,243	19,233	20,224	20,224
City of Grover Beach	13,254	13,519	13,789	14,065	14,347
Oceano CSD[2]	8,137	8,300	8,466	8,635	8,808
CSA 12[3, 4]	NA	NA	NA	NA	NA
Avila Beach CSD[1]	450	467	484	503	523
TOTAL	**47,696**	**49,281**	**50,872**	**52,597**	**53,406**

NA=not available

1. Population based on Draft 2010 County Resource Management System Annual Summary Report.
2. Population based on Draft Master Water Plan, March 2011, and either 2% estimated growth rate or growth rate from 2010 Annual Summary Report.

3. CSA 12 population data is not available at this time. The service area includes approximately 35 single-family homes, a school, several commercial facilities including a spa/club, PGE (utility) and a church.

4. Historically, the Har*b*or Terrace area of Port San Luis Trailer Park included approximately 25 units. However, this Park is being phased out and will no longer host permanent residents in the future.

SECTION 3: SYSTEM DEMANDS

SECTION 3.1: Water Demands

As required by the UWMP Act, this section addresses the following item:

- *#25. Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural (10631(e)(1) and (2)).*
- *#34. The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier (10631.1(a)).*

The water demands, actual and projected, are provided in Tables 3 and 5, respectively. The water demand in Zone 3 is equivalent to the water entitlements for each contracting agency. For information regarding water demand, by land use category within each contracting agency's service area, refer to their individual urban water management plans.

Table 3
Water Deliveries – Actual (AFY)

	2005	2010
City of Pismo Beach	645	842
Oceano CSD	306	203
City of Grover Beach	787	773
City of Arroyo Grande	2,289	2,246
CSA 12	119	125
Total	**4,146**	**4,189**

****Note – Table 4 Not Used, as Year 2010 actual water deliveries are provided in Table 3.**

Table 5 Water Deliveries – Projected (AFY)				
	2015	**2020**	**2025**	**2030**
City of Pismo Beach	896	896	896	896
Oceano CSD	303	303	303	303
City of Grover Beach	800	800	800	800
City of Arroyo Grande	2,290	2,290	2,290	2,290
CSA 12	241	241	241	241
Total	**4,530**	**4,530**	**4,530**	**4,530**

****Note – Tables 6 and 7 Not Used, as Year 2020, 2025 and 2030 projected water deliveries are provided in Table 5.**

Water projections for single family and multifamily residential housing needed for lower income households is provided in each contracting agency's individual urban water management plan; therefore it is not presented in this UWMP.

****Note – Table 8 Not Used, as low income water deliveries are not applicable to Wholesale Agency.**

As noted previously, Zone 3 is comprised of the following Contract Agencies:

- City of Pismo Beach
- Oceano Community Services District
- City of Grover Beach
- City of Arroyo Grande
- CSA 12 (which includes Port San Luis)

Table 9 provides a summary of the entitlements for each Contract Agency. Table 10 provides a summary of the additional commitments for Zone 3 water. Table 11 summarizes the full entitlement to Zone 3 water.

Table 9 Sales to Contract Agencies (AFY)						
	2005	**2010**	**2015**	**2020**	**2025**	**2030**
City of Pismo Beach	645	842	896	896	896	896
Oceano CSD	306	203	303	303	303	303
City of Grover Beach	787	773	800	800	800	800
City of Arroyo Grande	2,289	2,246	2,290	2,290	2,290	2,290
CSA 12	119	125	241	241	241	241
Total	**4,146**	**4,189**	**4,530**	**4,530**	**4,530**	**4,530**

Table 10 Additional Water Uses and Losses (AFY)						
	2005	**2010**	**2015**	**2020**	**2025**	**2030**
Downstream Water Releases	4,584	3,153	4,200	4,200	4,200	4,200
Total	**4,584**	**3,153**	**4,200**	**4,200**	**4,200**	**4,200**

Table 11 Total Water Use (AFY)						
	2005	**2010**	**2015**	**2020**	**2025**	**2030**
Sales to Contract Agencies / Entitlements*	4,146	4,189	4,530	4,530	4,530	4,530
Downstream Water Releases	4,584	3,153	4,200	4,200	4,200	4,200
Total	**8,730**	**7,342**	**8,730**	**8,730**	**8,730**	**8,730**

* Note: Historic Water Use based on actual sales to Contract Agencies and future water use based on contract entitlements.

SECTION 3.2: Water Demand Projections

As required by the UWMP Act, this section addresses the following item:

- *#33. Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c) (10631(k)).*

The contracted volumes of water for each Contract Agency for every year, including 2015, 2020, 2025, and 2030 are as follows:

- City of Pismo Beach 896 AFY
- Oceano CSD 303 AFY
- City of Grover Beach 800 AFY
- City of Arroyo Grande 2,290 AFY
- CSA 12 241 AFY

****Note – Table 12 Not Used, as retail agency demand projections are not applicable to the defined contractual allocations that the Wholesale Agency to provides each Contract Agency.**

SECTION 3.3: Water Use Reduction Plan

As required by the UWMP Act, this section addresses the following item:

- *#2. Urban wholesale water suppliers shall include in the urban water management plans . . . an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part (10608.36). Urban retail water suppliers are to prepare a plan for implementing the Water Conservation Bill of 2009 requirements and conduct a public meeting which includes consideration of economic impacts (CWC §10608.26).*

The District does not have authority to propose or enforce measures, programs, and policies to help achieve the water use reductions required by part 10608.36 of the Water Code. Please see individual urban water management plans for the measures, programs, and policies that each Contract Agency has assessed.

SECTION 3.4: Baselines and Targets

As required by the UWMP Act, this section addresses the following items:

- *#1. An urban retail water supplier shall include in its urban water management plan . . . due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data (10608.20(e)).*

- *#3 Report progress in meeting urban water use targets using standardized form (10608.40).*

As a wholesale water agency, the District supplies water to retail water suppliers (the Contract Agencies), who in turn distribute water to individual customers for consumptive use. The Contract Agencies within Zone 3 that are required to prepare UWMPs (City of Arroyo Grande, City of Pismo Beach, and City of Grover Beach), none of these agencies rely solely on Zone 3 water and all use a combination of Zone 3 water, State Water, and/or groundwater. As such, per capita baseline data for the Zone 3 water is not available to the District. It is the duty of each Contract Agency to provide this information in their respective UWMP updates. Thus, it is not appropriate to include Table 13 through Table 15 in the Zone 3 UWMP update.

****Note – Tables 13 through 15 are Not Used, as developing base per capita water use is not applicable to Wholesale Agencies.**

SECTION 4: SYSTEM SUPPLIES

SECTION 4.1: Water Sources

As required by the UWMP Act, this section addresses the following item:

- *#13. Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a) (10631(b)).*

Zone 3 was established to operate the Zone 3 water supply system, and is a wholesale supplier with no retail water customers. Water from Lopez Reservoir is the sole source of water provided by Zone 3. Some of the Contract Agencies in Zone 3 have additional sources of water such as State Water Project water and/or groundwater, as follows:

- City of Pismo Beach, State Water, groundwater
- City of Arroyo Grande, groundwater
- City of Grover Beach, groundwater
- Oceano CSD, State Water, groundwater
- Avila Beach CSD, State Water

The Contract Agencies in Zone 3 include the communities of Oceano, Grover Beach, Pismo Beach, Arroyo Grande, CSA 12 and the community of Avila Beach and the Port San Luis area).

Lopez Reservoir

Lopez Reservoir has a capacity of approximately 49,388 acre-feet (AF) and provides both water supply and recreational uses. Lopez Reservoir consists of about 164,000 acres, and is located primarily within the Arroyo Grande Creek drainage area. The dam and reservoir were constructed on Arroyo Grande Creek, approximately 8 miles upstream from the community of Arroyo Grande and approximately 13 miles from the mouth of the river. Construction on the project started in May 1967, and was completed in January 1969. The dam is constructed of select fill materials with a length of 1,120 feet, and a vertical height of 166 feet. A seismic retrofit of the dam was completed in 2002. A 20-inch diameter buried steel transmission main with a total length of 16 miles carries water from the dam to the 844 AF terminal reservoir to the treatment plant to Contract Agencies in the Five Cities Area (Arroyo Grande, Grover Beach,

Oceano, Pismo Beach and Avila Beach) and CSA 12. The treatment plant has the capacity to treat up to 6 million gallons per day (mgd).

As previously noted, the safe yield of Lopez Reservoir is 8,730 AFY, which reflects the sustainable water supply during drought conditions. The safe yield is derived from two historical studies: Lopez Project Hydrology Review conducted in June 1962 and Hydrologic Balance of Arroyo Grande Groundwater Basin conducted in November 1962. The reservoir is operated to stay within the safe yield. 4,530 AFY(roughly 52% of the safe yield of the reservoir) has been apportioned by agreements to Contract Agencies that are primarily municipal water purveyors. The remaining 4,200 AFY is reserved for downstream releases to maintain stream flows and groundwater recharge downstream. The District currently manages the downstream releases from Lopez Dam in a manner to ensure adequate flows for groundwater recharge and for the endangered species in Arroyo Grande Creek. The releases are adjusted (increased or decreased) as necessary in response to changing agricultural needs and/or changes in weather conditions or other factors that may influence surface flows within the creek system. This management has generally resulted in annual releases less than 4,200 AF; this water is periodically offered to the Contract Agencies as surplus water.

Table 16
Water Supplies – Current and Projected (AFY)

	2010	2015	2020	2025	2030
City of Pismo Beach	842	896	896	896	896
Oceano CSD	203	303	303	303	303
City of Grover Beach	773	800	800	800	800
City of Arroyo Grande	2,246	2,290	2,290	2,290	2,290
CSA 12	125	241	241	241	241
Downstream Releases	3,153	4,200	4,200	4,200	4,200
Surplus Water[1]	**1,388**	**0**	**0**	**0**	**0**
Total	**8,730**	**8,730**	**8,730**	**8,730**	**8,730**

[1]As presented in Table 16, it is assumed that in the future, 4,200 AFY will be reserved for downstream releases and no surplus water will be available to Contract Agencies. In actuality, when less water is released from Lopez Reservoir for downstream releases, surplus water may be made available.

****Note – Table 17 Not Used, as wholesale water supplies are already included in Table 16 above.**

SECTION 4.2: Groundwater

As required by the UWMP Act, this section addresses the following items:

- *#14. (Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . . (10631(b))?*
- *#15. (Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management(10631(b)(1)).*
- *#16. (Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater (10631(b)(2)).*
- *#17. For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board (10631(b)(2)).*
- *#18. (Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree (10631(b)(2)).*
- *#19. For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition (10631(b)(2)).*
- *#20. (Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(3)).*
- *#21. (Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(4)).*

The source of water for Zone 3 is exclusively from Lopez Reservoir. The District has no plans to develop groundwater supplies as an additional source of water for Zone 3 Contract Agencies. The District supports the efforts of its Contract Agencies to reduce overdraft, implement conjunctive use projects and groundwater storage and banking programs to optimize and best manage their groundwater sources. At the same time, the District cannot control how much groundwater particular agencies extract from the groundwater basin and has limited authority in

this regard. Several Zone 3 Contracting Agencies (Oceano CSD, City of Grover Beach, City of Arroyo Grande, and City of Pismo Beach) use groundwater for municipal supply and the District expects that those agencies (that are required to prepare UWMPs) will provide detailed information regarding groundwater resources in their respective UWMPs. District staff will continue to work with its Contract Agencies to promote effective management of groundwater supplies within the region.

To this end, the Districtis in the process of preparing a comprehensive update to the County Master Water Plan last updated in 1998. The original 1972 Master Water and Sewerage Plan, adopted by the County Board of Supervisors, was updated in 1986 to address water resource issues only. There have been major changes in the water resources picture for the County since the completion of those comprehensive documents, such as the construction of the State Water and Nacimiento pipelines, groundwater basin litigation, new water users, new water regulations, development of the Integrated Regional Water Management Plan, and the completion of various local and sub-regional water management studies and plans. Consequently, development of this updated County Master Water Plan is for ensuring effective management of the County's water resources now and into the future. The draft Master Water Plan, which includes detailed information regarding local member agencies' efforts to manage the local groundwater supplies, can be referenced at the following web site link:

http://www.slocountywater.org/site/Frequent%20Downloads/Master%20Water%20Plan/index.htm

The final Master Water Plan is anticipated to be adopted in the fall of 2011.

****Note – Tables 18 and 19 Not Used, as groundwater quantities pumped and projected to be pumped are not applicable to the District; the District only supplies surface water to Contract Agencies.**

SECTION 4.3: Transfer Opportunities

As required by the UWMP Act, this section addresses the following item:

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

In years that the annual yield of the reservoir exceeds the water deliveries and downstream releases, Contract Agencies have been given the option to purchase surplus water. The District continues to review its policy regarding surplus water which is being considered as part of the draft Arroyo Grande Creek Habitat Conservation Plan (HCP). Currently, the draft HCP is being reviewed by federal and state regulatory agencies. It is anticipated that once approved, this HCP will provide for both a thriving creek habitat and increased supply of surplus water in most years.

The current policy is as follows: "Surplus water shall be calculated for each water year by subtracting from the safe yield of the project an amount equal to the sum of the quantity of water released downstream during the immediately prior water year, which shall not exceed 4,200 AF unless legally required (Article 4(A), September 19, 2000 Water Supply Contracts), and the

quantity of entitlement water delivered to Zone 3 Contract Agencies during the immediately prior water year, excluding downstream releases and entitlement deliveries that occur during the period of time that the District determined that continuous spillway flow was occurring at Lopez Dam."[3]

At the March 8, 2011 County of San Luis Obispo Board of Supervisors Meeting, per the recommendation from District staff, the Board adopted a resolution declaring 805 AF of surplus water in Water Year 2009-10, and crediting such surplus to Zone 3 Contract Agencies in Water Year 2010-11.

Since there is currently ample water available to meet contract obligations, there is no need to enter into an exchange or transfer agreement to bring in additional supplies to Zone 3. The current contract agreement with these agencies does not allow for surplus water to be made available to outside entities. Selling surplus water to agencies that are not Contract Agencies is not practicable because on any given year, there is typically not enough surplus additional water to warrant a sale.

One key aspect of taking advantage of surplus water is the capacity of the Zone 3 pipeline. The District recently completed a hydraulic study to determine if additional capacity exists in this pipeline for supplemental water deliveries to Contract Agencies. Subsequent to this initial study, a hydraulic model and detailed study was conducted by the District, to assess hydraulic capacity in the entire Central Coast Water Authority State Water delivery system. Both studies addressed hydraulic capacity relative to both State Water and Zone 3 Water delivery opportunities in the Lopez pipeline. The most recent CCWA delivery system study and and report was issued draft in April 2011, and is still under review. Preliminary results indicate the potential for a marginal increase in capacity for surplus deliveries of approximately 12% (~300 AFY); however, this study is still a draft document and not final at this time. Thus, at this time, it is not certain to what extent excess deliveries of State Water and Zone 3 water might be able to be delivered to Contract Agencies through the Lopez Pipeline.

****Note – Table 20 Not Used, as long-term transfer and exchange opportunities are not identified at this time.**

SECTION 4.4: Desalinated Water Opportunities

As required by the UWMP Act, this section addresses the following item:

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

The mission of the District is solely to serve water from Lopez Reservoir to its five Contract Agencies. The supply and safe yield in this reservoir is sufficiently adequate to meet contract

[3] Source: Contract Amendment between San Luis Obispo County and Contracting Agencies, Executed on September 19, 2000.

obligations. Two Contract agencies within Zone 3(City of Arroyo Grande, City of Grover Beach) have considered use of desalinated water to meet their growing water needs. Oceano CSD (not a Contract Agency) also participated in this study. At this time, the District has no need for additional supplies, particularly for desalinated brackish or seawater which are very costly to treat and manage brine wastes. The District supports the efforts of local agencies pursuing desalinated water as a possible new source of supply.

In 2008, the City of Arroyo Grande, the City of Grover Beach, and the Oceano Community Services District, jointly participated in the detailed evaluation of a potential seawater desalination project to supplement their existing potable water sources. These agencies receive water from various sources, including: the California State Water Project, Lopez Lake Reservoir, and groundwater from the Arroyo Grande Plain/Tri-Cities Mesa Groundwater Basin. Recent projections of water supply shortfalls in the region have warranted a more detailed study and consideration of desalination (and recycled water) as a supplemental water supply. This Desalination Funding Study was funded from Proposition 50 grant monies, and was advanced further from a prior February 2006 initial desalination study.

Each of these agencies identified their desired allocation of production water from the desalination facility. The total capacity of the desalination plant studied was for 2,300 AFY yield, with each agency's share in the plant capacity as follows:

- City of Arroyo Grande, 750 AFY
- City of Grover Beach, 800 AFY
- Oceano CSD, 750 AFY

The study revealed a number of and challenges associated with the development of a desalination facility:

- How seawater would be collected through a series of on-beach gallery wells;
- Impacts of pipeline construction on the beach and through environmentally sensitive areas (such as the Lagoon);
- Site concerns and competing space requirements at the SSLOCSD WWTP;
- Complex permitting process;
- Extensive energy consumption; and
- High cost of water per AF.

After careful consideration of the findings of the Desalination Funding Study, the participating agencies chose to no longer pursuing desalination as a viable water supply alternative. However, the need for augmenting water supplies for the future is still a key concern, particularly with the City of Arroyo Grande. Discussion of recycled water options is included in other sections of this UWMP 2010 Update.

SECTION 4.5: Recycled Water Opportunities

As required by the UWMP Act, this section addresses the following items:

- *#44. Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater,*

groundwater, and planning agencies that operate within the supplier's service area (10633).

- *#45. (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal (10633(a)).*

- *#46. (Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project (10633(b)).*

- *#47. (Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use (10633(c)).*

- *#48. (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses (10633(d)).*

- *#49. (Describe) the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision (10633(e)).*

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

- *#51. (Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use (10633(g)).*

This section describes recycled water opportunities in the Zone 3 service area, and includes a discussion of each Contract Agencies' wastewater treatment and disposal systems, methods of effluent disposal, current and projected wastewater production, recycled use opportunities including existing and future potential demands.

Wastewater Collection and Treatment Systems

There are three wastewater treatment plants (WWTP) serving Zone 3 Contract Agencies, as follows:

- South San Luis Obispo County Sanitation District (SSLOCSD) WWTP, serving the Cities of Arroyo Grande and Grover Beach, and Oceano CSD.
- City of Pismo Beach WWTP, serving the City of Pismo Beach.
- Avila Beach CSD WWTP, serving the Avila Beach CSD and Port San Luis.

SSLOCSD Collection System and WWTP. The SSLOCSD trunk sewer system collects wastewater from individual sewer collection systems in the Cities of Arroyo Grande and Grover Beach, and Oceano CSD. The SSLOCSD trunk sewers vary between 18" and 30" in diameter. The SSLOCSD Plant is rated at 5 mgd. The plant provides secondary treatment using a fixed film reactor. The plant is also designed for a 9 mgd peak wet weather flow. Effluent is chlorinated and dechlorinated prior to discharge. Plant effluent is discharged through the existing joint outfall line to the Pacific Ocean. Refer to "Methods of Current Wastewater Disposal" discussion later in this Section. This plant currently serves a permanent population of approximately 38,000 persons.

City of Pismo Beach Collection System and WWTP. The collection system consists of 35 miles of gravity sewer ranging in diameter from 4" to 16", over 450 manholes, 4.5 miles of sewer force mains, and 9 lift stations. The Pismo Beach wastewater treatment plant is a relatively new plant with a capacity to treat an average of 1.9 mgd to secondary effluent standards. Currently, all effluent is discharged to the Pacific Ocean via the joint outfall shared with the SSLOCSD. The secondary process includes an oxidation ditch extended aeration process, followed by secondary clarification, chlorination and dechlorination. A permanent population of just over 8,600 persons is served by this plant.

Avila Beach CSD Collection System and WWTP. The collection system consists of approximately 9,300 linear feet of gravity sewer ranging in diameter from 4" to 10", 40 manholes, and one lift station. The treatment plant is a 0.2 mgd rated secondary plant using a fixed film reactor or trickling filter. Secondary effluent is settled in secondary sedimentation basin, then chlorinated and dechlorinated prior to discharge through an ocean outfall. Population currently served by this plant is approximately 500 persons.

Wastewater Treatment Plant Capacities, Current and Future Projected Wastewater Flows

Existing and future wastewater flows were referenced from a variety of existing documents. Table 21 summarizes the existing and future wastewater flows for the three WWTPs in the Zone 3 service area.

Table 21 Recycled Water – Wastewater Collection and Treatment							
WWTP	**Wastewater Flow, mgd**						
	2010	**2015**	**2020**	**2015**	**2020**	**2025**	**2030[1]**
SSLOCSD	2.64[2]	2.78	2.92	3.06	3.20	3.34	3.5[3]
City of Pismo Beach	1.13[4]	1.28	1.42	1.55	1.70	1.84	2.0[5]
Avila Beach CSD	0.048[2]	0.053	0.058	0.063	0.068	0.073	0.078[6]
TOTAL	3.82	4.11	4.40	4.67	4.97	5.25	5.58
Volume Wastewater Meeting Recycled Water Standards							
Secondary	3.82	4.11	4.40	4.67	4.97	5.25	5.58
Tertiary (unrestricted)	0	0	0	0	0	0	0

[1]Anticipated "build out" of community, on an annual average flow basis.
[2]2010 Annual Report (to Regional Board)
[3]Long-Range Development Plan, Wallace Group-Kennedy/Jenks, 2002.
[4]Pismo WWTP Plant Data, 2009.
[5]Sewer Collection System Master Plan, Carollo, 1999.
[6]Sewer Master Plan Update, Wallace Group, 2009.

Methods of Current Wastewater Disposal

Effluent disposal for the three WWTPs in Zone 3 is described in the following paragraphs, and summarized in Table 22.

SSLOCSD WWTP. Treated secondary wastewater is discharged via an ocean outfall. This outfall is a joint outfall shared between SSLOCSD WWTP and Pismo Beach WWTP. According to the agreement between the City of Pismo Beach and SSLOCSD, the total capacity of the outfall line is contractually defined as follows:

Pismo Beach	44%
SSLOCSD	56%
Total	100%

The combined capacity of this outfall is estimated at 16 mgd on a peak flow basis. The outfall extends approximately 4,000 feet offshore into about 60 feet of water depth.

Pismo Beach WWTP. Refer to the discussion above for SSLOCSD WWTP.

Avila Beach CSD WWTP. Treated secondary effluent from the Avila Beach CSD is also via ocean outfall. The outfall is 12" diameter and extends approximately 540 feet beyond the Avila Pier.

Table 22 Recycled Water – Non-Recycled Wastewater Disposal	
WWTP	**Disposal Method**
SSLOCSD	Ocean Outfall
City of Pismo Beach	
Avila Beach CSD	

Current Recycled Water Projects and Efforts Since 2005 UWMP Update

Currently there are no identified recycled water projects utilizing effluent from the three WWTPs in the Zone 3 service area. Thus, there is no identified change in recycled water use between Year 2005 and 2010. Furthermore, the 2005 UWMP did not project or identify any recycled water projects (to be undertaken by Contract Agencies) for Year 2010. Thus, there is no information available in this regard, and thus Table 24 is not used as part of this UWMP Update. However, since 2005, several studies have been undertaken to determine the feasibility of implementing recycled water projects, as discussed in the subsequent Section. Agencies that have conducted recycled water feasibility studies include:

- **SSLOCSD WWTP.** In 2008, a comprehensive study (update to 2001 recycled water feasibility study) was prepared to evaluate the feasibility of various recycled water applications including turf irrigation, stream augmentation/environmental demand, indirect potable reuse/groundwater recharge, and agricultural irrigation. The market assessment covered turf irrigation predominantly in the City of Arroyo Grande and Grover Beach areas and focused on agricultural irrigation potential in Oceano. In 2009, a supplemental study was conducted to evaluate the feasibility of a focused secondary effluent reuse project to irrigate a local City of Arroyo Grande cemetery and freeway median landscaping. The study reviewed options to serve these secondary reuse sites from the SSLOCSD WWTP and/or the City of Pismo Beach WWTP.
- **City of Pismo Beach.** In 2007, a recycled water feasibility study was conducted to consider tertiary recycled water use for turf irrigation in the City of Pismo Beach. In 2008, a supplemental recycled water study was conducted, building upon the 2007 study, to further define potential to serve an initial phase of tertiary water system and possibly serve contemplated developments in the area of the City.
- **Avila Beach CSD WWTP.** In 2008, a WWTP capacity evaluation was conducted, and in conjunction with that study, a recycled water feasibility study was also conducted. The market demand in the Avila Beach CSD area is limited to a single golf course adjacent to the WWTP. No other potential landscape reuse sites were identified. The study evaluated upgrade of the WWTP to provide tertiary recycled water to irrigate the golf course.

Potential Uses of Recycled Water in Service Area

In general, turf irrigation using unrestricted tertiary 22 CCR 2.2 (criteria defined by Title 22, California Code of Regulations for unrestricted recycled water, meeting a coliform bacteriological quality of 2.2 most probable number) recycled water for landscape/turf irrigation is a potential use in all three WWTP service areas. However, studies have shown that the cost

of pipeline and pump station infrastructure relative to irrigation demand is high. In order to provide viable reuse programs, the WWTPs would need to upgrade to tertiary treatment. The following describes in general the recycled water market demands in the three WWTP service areas. Also of note, essentially all of the recycled water theoretically could be available for indirect potable use, but would require a very high degree of treatment to reduce TDS and to meet total organic carbon requirements for groundwater discharge. For the SSLOCSD WWTP recycled water study, such opportunity was reviewed on a cursory level. Due to high costs, concerns over public perception, and other factors, development of recycled water indirect potable use is likely not feasible for the immediate future.

As a wholesale entity, it is difficult to project to what extent a member agency may employ recycled water projects in the coming years. As such, the District is not in a position to forecast the extent and timing of such reuse programs. As stated elsewhere, the District supports and encourages optimization of water resources throughout the County, and would encourage all Contract Agencies to develop recycled water programs where feasible. Recycled water potential demands in future years are referenced as information only, and indicate "ultimate" recycled water quantities that possibly could be utilized. This information should not be interpreted as a specific forecast or commitment by member agencies to achieve the identified recycled water demands indicated in Tables 23.1, 23.2 and 23.3. Please note that Table 23 was separated into three distinct tables, as discussed in the next paragraph.

Feasibility of Serving Recycled Water for Potential Uses

The feasibility of serving recycled water to the three area WWTPs has been studied by various consultants in recent years, as the need for augmenting potable water supplies has become more apparent. All three plants, in order to consider any viable recycled water program, would need to upgrade the WWTP to tertiary 2.2 quality recycled water. Identified potential recycled use is summarized for SSLOCSD WWTP, City of Pismo Beach WWTP, and Avila Beach CSD WWTP, respectively, in Tables 23.1, 23.2 and 23.3. Table 23 was separated into three distinct tables, such that recycled water demands from each area WWTP could be summarized individually.

Table 23.1
Recycled Water – Potential Future Recycled Water From SSLOCSD WWTP (AFY)[4]

User Type	Description	Feasibility[1]	2015	2020	2015	2020	2025	2030[7]
AG Irrigation	Local produce farms, Oceano	Good to Fair[6]						3,750
AG Irrigation	Local produce farms, Arroyo Grande	Poor						7,850
Unrestricted Landscape[2]	Local landscape/turf	Fair						145
Secondary Landscape	Freeway median, cemetery	Poor						58[8]
Environmen-tal[3]	Arroyo Grande Creek stream augmentation	Poor						1,000
IPW/GW Recharge	Local GW Recharge	Fair to Poor						2,300
Seawater Barrier	Near WWTP, Oceano Area	Not studied[5]						
Other Uses	Industrial Cooling	Poor						

IPW=indirect potable water reuse
[1]Technical and economic feasibility.
[2]Includes parks, schools, commercial establishments, cemeteries, golf courses, public facilities.
[3]Includes stream augmentation, wetlands habitat/restoration, other environmental uses.
[4]Projection of recycled water use between 2015 and 2030 is not known, and is up to member agencies to determine. Year 2030 potential future reuse numbers indicate maximum potential recycled water use based on available information from feasibility studies, which may or may not be realized.
[5]Seawater barrier project not included as part of feasibility study, but further study may be warranted should need arise in future years. If studied, this would be undertaken by member agencies.
[6]Also requires recycled water to be a minimum of tertiary 2.2 recycled water (unrestricted use), but may also require further enhanced treatment such as reverse osmosis to make water quality more desirable to farmers.
[7]Water Recycling Update Report (SSLOCSD WWTP), Wallace Group, 2008.
[8]Recycled Water Conceptual Plan (Memo), City of Pismo Beach/Arroyo Grande, Wallace Group, 2010.

SSLOCSD WWTP. It was estimated that a turf irrigation program alone would cost on the order of $8,000 per AF (on a life cycle basis), and up. Stream augmentation in Arroyo Grande Creek was expensive, and infeasible due to environmental/permitting constraints, and water quality issues that would require the addition of a reverse osmosis treatment system to comply with in-stream chlorides and TDS quality. Indirect potable reuse/groundwater recharge was estimated to be expensive, and may have considerable hurdles with public perception, and complex permitting to meet California Department of Public Health requirements. Of the various alternatives considered, one alternative appears to be viable for future implementation if done on a large scale. This would be the implementation of a large-scale tertiary recycled water program for crop irrigation in the nearby Oceano area. This program would be modeled after the successful program in Monterey County. This program cost was still estimated to be quite expensive at $4,900 per AF; however, if implemented in phases over time, the project could prove to be viable.

Pismo Beach WWTP. Tertiary recycled water was estimated to cost approximately $11,000 per AF (on a life cycle basis) to implement. This cost could be reduced, if implemented in conjunction with future Development projects that would contribute a significant portion of the project costs. City staff plans to include in the City UWMP the option of providing a sea water intrusion barrier and possibly augmenting the ground water basin with recycled water. It would appear that option may have promise financially if developed with proposed future development projects as mentioned above.

Table 23.2
Recycled Water – Potential Future Recycled Water From City of Pismo Beach WWTP (AFY)[4]

User Type	Description	Feasibility[1]	2015	2020	2015	2020	2025	2030[5]
AG Irrigation		Not studied						
Unrestricted Landscape[2]	Local landscape/turf	Fair to Poor						246
Secondary Landscape	Freeway median, cemetery	Poor						6[6]
Environmen-tal	See Footnote 3	No identified market						
IPW/GW Recharge		Not studied						
Seawater Barrier	No need identified	Not studied						
Other Uses		None identified						

IPW=indirect potable water reuse
[1]Technical and economic feasibility.
[2]Includes parks, schools, commercial establishments, cemeteries, golf courses, public facilities.
[3]Includes stream augmentation, wetlands habitat/restoration, other environmental uses.
[4]Projection of recycled water use between 2015 and 2025 is not known, and is up to member agencies to determine. Year 2030 potential future reuse is based on recycled water feasibility study "ultimate" demand identified, which may or may not be realized.
[5]Water Reuse Study (City of Pismo Beach WWTP), Carollo Engineers, 2007.
[6]Recycled Water Conceptual Plan (Memo), City of Pismo Beach/Arroyo Grande, Wallace Group, 2010.

Avila Beach CSD WWTP. A single site, the local golf course, could use approximately 250 AFY of recycled water. However, using recycled water would not augment potable water supplied by the Avila Beach CSD since golf course irrigation is accomplished using a local on-site well. The WWTP site is highly constrained, and there is little available room for tertiary filtration facilities. In addition, the cost of using recycled water is considered infeasible compared to the cost of pumping on-site groundwater. It was estimated that the cost to produce and distribute recycled water would be 3 to 4 times the cost of local pumped groundwater.

Table 23.3
Recycled Water – Potential Future Recycled Water From Avila Beach CSD WWTP (AFY)[4]

User Type	Description	Feasibility[1]	2015	2020	2015	2020	2025	2030[5]
AG Irrigation		No market						
Unrestricted Landscape[2]	Local golf course	Poor						250[6]
Secondary Landscape		No market						
Environmen-tal	See Footnote 3	No identified market						
IPW/GW Recharge		Not studied						
Seawater Barrier	No need identified at this time	Not studied						
Other Uses		None identified						

IPW=indirect potable water reuse
[1]Technical and economic feasibility.
[2]Includes parks, schools, commercial establishments, cemeteries, golf courses, public facilities.
[3]Includes stream augmentation, wetlands habitat/restoration, other environmental uses.
[4]Projection of recycled water use between 2015 and 2025 is not known, and is up to member agencies to determine. Year 2030 potential future reuse is based on recycled water feasibility study "ultimate" demand identified, which may or may not be realized.
[5]Avila Beach CSD WWTP Evaluation, Wallace Group, 2010.
[6]Irrigation demand would not augment potable water, as golf course is irrigated with local well water.

****Note – Table 24 Not Used, as there were no active recycled water projects in the Zone 3 service area in 2005 and 2010, and 2010 projections for recycled water use were not included in the 2005 UWMP.**

Recycled Water Financial Incentives

As a wholesaler of potable water to Contract Agencies, Zone 3does not have the authority to provide financial incentives for recycled water programs. Such financial incentives and rates will be determined by each Contract Agency. The Cities of Grover Beach, Pismo Beach, and Arroyo Grande, currently do not have recycled water programs in operation. In the coming years, when recycled water programs are developed, the financial aspects of such recycled water programs will be addressed by the Contract Agencies at that time.

Optimizing Use of Recycled Water

Similar to other statements in regards to the District's role as a wholesale entity, the District does not have any specific plans for optimizing the use of recycled water in the Contract Agencies' service areas. Such details when available, 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, will be addressed by the Contract Agencies. However, as stated earlier, the District is in the process of updating the County-wide master water plan, which promotes and encourages recycled water programs throughout the County where feasible.

****Note – Table 25 Not Used, as the District as a Wholesale Agency does not have a program for financial or other incentives for retail agencies to develop recycled water projects.**

SECTION 4.6: Future Water Projects

As required by the UWMP Act, this section addresses the following item:

- *#30. (Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program (10631(h)).*

As previously stated, Zone 3 was solely created to deliver water from Lopez Reservoir to its five contracting retail water agencies. The safe yield of the reservoir exceeds the entitlements held by Contract Agencies, with ample drought reserves. However, in recent years, several Contract Agencies have identified near-term and future potential shortfalls in water supply. These agencies served by Zone 3 have several water supply sources, including Zone 3 Water, State Water, and local groundwater.

In 2008/2009, the Contract Agencies commenced with a study and evaluation to consider raising the spillway elevation of Lopez Reservoir, as a means of increasing safe yield in the reservoir and thus increasing water supply entitlements to the Contract Agencies. It is emphasized that this effort is funded by the Contract Agencies, not the District. The initial phase of this study was completed in 2009; however, this study for additional water supply is on-going at this time. This is the only identified potential water supply project directly related to the Lopez Lake water supply. Other opportunities, such as recycled water projects and water conservation are discussed in other sections of this 2010 UWMP Update.

The project study considered raising the spillway of Lopez Dam between 3 and 5 feet. This would increase gross reservoir storage by at least 2,850 AF, and annual yield was estimated to be increased by 671 to 1,371 AF. However, based on evaluation of historic drought years, the safe yield for a 3 foot raise in elevation would be on the order of only 250 AFY.

The study concluded that there are no obvious technical flaws with the proposed project. However, the costs for further study, and environmental studies and permitting are expected to be extensive. The project also has the potential to delay or significantly impact the draft HCP for Lopez Reservoir.

In June 2010, the City of Pismo Beach, who took the lead on this effort, issued a Request for Proposals inviting qualified consultants to propose on the next phase of this study to enhance the Lopez Lake water supply. This next phase of the study is currently under way , and is expected to be completed later this calendar year. Participants who will continue to participate and fund this study include the City of Pismo Beach, City of Arroyo Grande, City of Grover Beach, and CSA 12. Oceano CSD is no longer participating in this study. The viability of this project and possible timing of implementation of this project is uncertain at this time.

Table 26
Future Water Supply Projects

Project Name	Project Start	Projected Completion Date	Potential Project Constraints	Water Supply (AFY)[1]				
				Normal Year	Single Dry Year	Multiple Dry Year		
						Year 1	Year 2	Year 3
Raise Spillway of Lopez Dam	2008[2]	Undetermined[3]	Costs, Environmental Impacts, Permitting Constraints	731 To 916	671	259	259	259

[1]Based on raising spillway 3 feet.
[2]Project start date is date feasibility study began. It has not yet been determined if this potential project is feasible.
[3]Should the project be implemented, anticipated time frame from study commencement to construction completion is estimated at 5 years.

SECTION 5: WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

SECTION 5.1: Water Supply Reliability

As required by the UWMP Act, this section addresses the following items:

- *#5. An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions (10620(f)).*

- *#23. For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable (10631(c)(2)).*

Water from Lopez Reservoir is a very reliable source of water. The annual safe yield of the reservoir is 8,530 AFY (comprised of two components - 4530 AFY for pipeline delivery entitlements and 4,200 AFY for downstream releases). During wet years, when less water is released from Lopez Reservoir for downstream uses, the balance of the 4,200 AFY is declared as surplus water. This surplus water is held in the Reservoir and can be sold to Contract Agencies during the following year. This surplus water can provide a substantial drought buffer when it is available. Since the Reservoir began operation in May of 1969, each contracting agency has received its full entitlement, or requested amount if less than the full entitlement, each and every year.

Table 27
Basis of Water Year Data

Water Year Type	Base Year(s)
Average Water Year	1991/92[1]
Single-Dry Water Year	1989/90[2]
Multiple-Dry Water Years	1969/70, 1970/71, and 1971/72[3]

[1] Average precipitation between 1968/69 and 2009/10 is 19.1 inches. The water year that most closely matches the average is 1991/92 with 19.0 inches of rain.
[2] The single driest year is 1989/90 with only 9.1 inches of rain.
3 Multiple dry water years is represented by 1969/70, 1970/71 and 1971/72, which had a combined rainfall of 33.1 inches. See Figure 2 within this UWMP.

Demand within Zone 3 is equivalent to the entitlements held by the contracting agencies. The entitlements to Lopez Reservoir will remain constant at 4,530 AFY through the year 2030 unless a future water supply project to raise the reservoir spillway is employed (see Section 4.6) and agency contracts are revised.

Since this project was completed, the historic low reservoir level occurred during the 1987 to 1992 period, with six consecutive below average inflow years. During this time, storage was reduced to 16,500 AF (about 30% of reservoir capacity). During that time, municipal deliveries averaged 5,426 AFY (896 AFY above contractual allocations), and downstream releases averaged 2,871 AFY, or 1,473 AFY below current release levels. If current contractual allocations, and required environmental releases, had been maintained during that period, the District indicated that the reservoir level would not have reached below 20,000 AF storage. However, the District also recognizes the importance of ensuring reservoir levels are best managed to ensure deliveries for municipal, agricultural and environmental demands, and thus has established the 20,000 AF storage level as the threshold for water shortage contingency action. This is discussed further in the next paragraph regarding Environmental Impacts to Water Supply.

The Contract Agencies are entitled to 4,530 AFY. In years when surplus water is available from Lopez (less than 4,200 AFY is released downstream), the actual demand may be higher to reflect purchases from the surplus account. In addition to the entitlements held by the Contract Agencies, Zone 3 reserves water for downstream releases to maintain flows in the Creek. Each year, up to 4,200 AF are reserved for downstream releases. The actual amount of water released depends on conditions in the Creek and water available from the Lopez Reservoir.

Table 28 compares a single dry water year, and multiple dry water years to the average water year, and how such dry years may impact water deliveries. As noted in Table 28 (and described earlier in this Section), the Contract Agencies have historically always received requested water demands up to their full allocations in both single dry years and multiple dry water years.

Table 28
Supply Reliability – Historic Conditions

Average/Normal Water Year 1991/92	Single Dry Water Year 1989/90	Multiple Dry Water Years[2]		
		Year 1 1969/70	Year 2 1970/71	Year 3 1971/72
4,530 AFY[1]	4,530	4,530	4,530	4,530
Percent of Average/Normal Year	100	100	100	100

[1] The actual delivery for 1991/92 was 5,025 AFY. However, the contracted amount is 4,530 AFY.
[2] As indicated earlier, in the history of operation of Lopez Reservoir, Contract Agencies have always received water demand requested up to full contract allocations.

As mentioned in Section 4.3, the District has prepared a draft Habitat Conservation Plan (HCP) (2004) for the Lopez Dam project to comply with the Endangered Species Act, and provided incidental take authorization for steelhead and red-legged frogs resulting from Zone 3 operations and maintenance activities affecting Arroyo Grande Creek. Due to Zone 3 operations of Lopez Lake, there is a need for incidental take authorization for covered activities while providing enhanced habitat conditions and protection for both red-legged frogs and southern steelhead.

Environmental Impacts to Water Supply

Through this draft HCP, and current operations to supply water to Contract Agencies, agricultural interests, and environmental enhancement, the District fulfills its contract obligations to supply potable water allocations and to maintain adequate downstream releases for protection of steelhead, red-legged frogs, and other environmentally sensitive biota.

In addition, the District has filed a pending re-application for diversion of water rights with the State Water Resources Control Board. This re-application is to allow the District permission to have direct division rights in addition to diversion of storage rights. Securing diversion of water rights will allow the District to have water rights permission to operate Lopez Reservoir as they currently do at this time, consistent with that proposed in the draft HCP and the Interim Downstream Release Schedule (see below).

It is uncertain when the draft HCP or re-application for water rights division will be approved, and thus the District felt it prudent to prepare an Interim Downstream Release Schedule (IDRS) and plan to optimize storage and stream/reservoir management, to meet the needs of municipal, agricultural and environmental demands. This Plan also includes a Low Reservoir Response Plan (LRRP) consisting of a methodology to assess near-term reservoir levels and a set of actions that could be taken to mitigate the impacts of low reservoir levels. This Plan, included as Appendix B, includes a methodology to assess near-term reservoir levels and a set of actions that could be taken to mitigate the impacts of low reservoir levels (should reservoir levels reach a threshold of 20,000 AF). However, it should be noted that this program, should it prove successful, is not being employed to increase municipal supplies beyond current contractual allocations.

Table 29
Factors Resulting in Inconsistency of Supply

Water Supply Sources	Specific Source Name	Limitation Quantification (AFY)	Legal (AFY)	Environ-mental (AFY)	Water Quality (AFY)	Climatic (AFY)
Zone 3	Lopez Reservoir	4,530	4,530	0	0	0
Additional Information		Based on historical records, the only limiting factor to the Contract Agencies' water supply is based on their contracted amounts, which are tied to the safe yield of Lopez Reservoir.				

SECTION 5.2: Water Shortage Contingency Planning

As required by the UWMP Act, this section addresses the following items:

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

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

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

- *#40. Penalties or charges for excessive use, where applicable (10632(f)).*

- *#41. An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments (10632(g)).*

- *#42. A draft water shortage contingency resolution or ordinance (10632(h)).*

Catastrophic Interruption of Water Supply

The District recognizes the potential for a catastrophic interruption of supply, which may result from an earthquake, regional power outage or terrorist attack.

The water plant is fully automated and equipped with a complete Supervisory Controls and Data Acquisition (SCADA) system to keep the plant processes under control and constantly monitored. However, in the event of a water treatment process disruption at the Zone 3 Water Treatment Plant, the clearwell (2.25 million gallons in volume provides about 12 hours of storage. Since water deliveries to Contract Agencies is relatively constant throughout the day and night (each Contract Agency must provide their own water system storage facilities), the estimated 12 hour duration for storage would be similar whether such disruption occurred in the evening or daytime. However, during peak summer days when Contact Agencies are drawing more water, such storage time in the clearwell may be somewhat less. Thus, District staff does need to work diligently to ensure the plant processes come back on line expeditiously. However, it is also noted that each Contract Agency provides their own emergency water storage within their respective water distribution systems. In addition, the clearwell directly receives State Water which is delivered to State Water Contractors through the Lopez pipeline. During short-term disruptions to treatment at the water plant, State Water continues to supply the clearwell thus providing additional continuity of potable water service to Contract Agencies.

In the event of a wide-spread power outage, the Lopez WTP is equipped with a 900 kW emergency generator, sufficient to power the entire water treatment plant thus ensuring continued operations at the plant. Delivery of Zone 3 water is by gravity, and thus power is not needed to continue serving water to Contract Agencies.

Earthquakes and other events have the potential to disrupt the Zone 3 water transmission line. Should such disruption or line breakage occur, the District contracts with local contractors on an as-needed basis to quickly respond to emergency repairs. Such contractors are fully equipped with labor, equipment and materials to quickly repair damage to pipelines. The District has

prepared a 5-year capital improvement plan, which includes funding for future SCADA improvements to the Lopez transmission main. It is expected that this SCADA system will be funded and implemented 2014 to 2015, and once completed, the system will allow for remote monitoring of the pipeline to verify operating conditions and abnormal conditions such as loss of system pressure and leakage from the pipeline. Such improvements will allow for immediate identification of problems in the transmission system, quick response to isolate reaches of pipeline, and provide the ability to notify Contract Agencies should conditions warrant such actions.

Additional Mandatory Prohibitions

During an emergency or major disruption in potable water supply to Contract Agencies, or prolonged shortage due to drought conditions, it will be the responsibility of Contract Agencies (retailers) to notify the public of the water shortage and to mandate such prohibitions. Zone 3 staff notifies all Contract Agencies immediately in the event of an emergency, water quality issue, or water service disruption. Prohibitions during a water supply shortfall may include car washing, street cleaning, landscape irrigation, in addition to other water conservation measures employed. Specific prohibitions by each individual Contract Agency will be described in their corresponding UWMP updates.

Consumption Reduction Methods

As a wholesale entity, the District does not have the authority to impose consumption reduction methods during water supply shortages. However, the contracts between the District and the Contract Agencies contain a drought clause that provides for the possibility of a 50.55% reduction of Zone 3 Water. As the wholesale agency, it is the responsibility of the District to provide adequate notice to the Contract Agencies regarding any projected reductions in deliveries. It is then the responsibility of the Contract Agency to determine appropriate steps to supplement Lopez supplies with alternate sources, or impose water demand restrictions and prohibitions on their customers.

Penalties for Excessive Use

As a water wholesaler, the District does not have the authority to impose monetary penalties on the sale of allocated water to its Contract Agencies. It is up to each Contract Agency to establish tiered rates, or other financial penalties to best manage their potable water supplies.

Analysis of Impacts to Water Supply Reduction

As a wholesale entity, the District has established fixed costs for the Zone 3 water allocations to Contract Agencies. It is up to each Contract Agency (retailer) to assess and manage financial impacts resulting from reduced water sales.

Draft Water Shortage Contingency Resolution

As a wholesale entity, the District provides for an allocation of water to each Contract Agency. Whether each individual Contract Agency receives only Zone 3 water, or receives their water supply from several sources, it is the responsibility of each Contract Agency to develop their respective water supply contingency plans. During a drought, the Zone 3 contract between the District and Contract Agencies defines the expected water delivery reductions and

corresponding notifications to each Contract Agency of the District's intent to reduce allocations during such drought years. Refer to Section 5.4, Drought Planning, for details of actions taken during water shortage situations, as described in the District's Low Reservoir Response Plan (LRRP).

SECTION 5.3: Water Quality

As required by the UWMP Act, this section addresses the following item:

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

The District is responsible for operation and regulatory compliance of the Zone 3 Water Treatment Plant (WTP). One of the District's goals is to ensure the safety of the public by meeting current and impending regulations established by the State of California. The WTP meets current standards. Table 30 expresses to what degree any identified water quality issues associated with the water supply might impact water supply/yield. Since Lopez Reservoir and the WTP treated water quality continue to meet all federal and state water quality standards, no such water supply impacts have been identified.

Table 30
Water Quality – Current and Projected Water Supply Impacts (AFY)

Water Source	Description of Condition	2010	2015	2020	2025	2030
Lopez	Meets State and Federal Water Quality Standards	0	0	0	0	0

SECTION 5.4: Drought Planning

As required by the UWMP Act, this section addresses the following items:

- *#22. Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years (10631(c)(1)).*

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

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

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

- *#53. Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier (10635(a)).*

As noted previously, Lopez Lake is a very reliable water supply source as the water entitlements are half of the safe yield. Zone 3 is under contractual obligation to supply 4,530 AFY of water to its Contract Agencies. As stipulated in Article 6 (Water Shortages) of the Contract between Zone 3 and its contractors[4], cutbacks may occur during droughts or other shortage conditions. Should such shortages occur, it is the responsibility of the contracting agency to reduce demand or secure alternate sources accordingly.

Table 31 summarizes the water supply reliability during average years, and multiple dry year scenarios. Table 32 and Table 33 provide a comparison of water supply and demand during a normal dry year and single dry year, respectively.

During multiple dry years, the District anticipates, based on historical experience and the substantial 4,200 AF annual drought buffer, that it can meet its current contract obligation of 4,530 AFY. Therefore the minimum water supply available for the next three years, to meet obligations to Contract Agencies, is 4,530 AFY.

Table 31
Supply Reliability – Current Water Sources (AFY)

Water Supply Sources	Average/Normal Water Year Supply	Multiple Dry Water Year Supply		
		Year 2011	Year 2012	Year 2013
Lopez	4,530	4,530	4,530	4,530
Percent of Normal Year	100%	100%	100%	100%

[4] Source: Contract Amendment Between San Luis Obispo County and Contracting Agencies, Executed on September 19, 2000.

Table 32 Supply and Demand Comparison – Normal Year (AFY)				
	2015	**2020**	**2025**	**2030**
Supply Totals (from Table 16)	8,730	8,730	8,730	8,730
Demand Totals (from Table 11)	8,730	8,730	8,730	8,730
Difference	0	0	0	0
Difference as % of Supply	0	0	0	0
Difference as % of Demand	0	0	0	0

Table 33 Supply and Demand Comparison – Single Dry Year[1] (AFY)				
	2015	**2020**	**2025**	**2030**
Supply Totals	8,730	8,730	8,730	8,730
Demand Totals	8,730	8,730	8,730	8,730
Difference	0	0	0	0
Difference as % of Supply	0	0	0	0
Difference as % of Demand	0	0	0	0

[1] Single Dry Year water supply volume based on contractual amount and historical records for delivery of water during a single dry year event.

The Low Reservoir Response Plan (LRRP) (see Section 5.3, and Appendix B) describes a set of actions that would be taken if the total storage volume in Lopez Reservoir were to fall below 20,000 AF (as measured on April 1 of any given year). Exhibit 2 (Page 19) of the Zone 3 IDRS is a flowchart depicting the actions to be taken by the District in the event of reservoir levels at or below 20,000 AF storage.

District actions that are triggered at this 20,000 AF storage level are as follows:

- Notify Contract Agencies of lower lake levels, invite participation in setting reduced releases to Arroyo Grande Creek.
- Contract Agencies implementation additional conservation measures to reduce demand.
- Contract Agencies maximize use of alternative source of water, including groundwater and State Water.
- Contract Agencies access or pursue additional water sources, if available.

Lopez Reservoir was constructed to provide a supplemental source to local water agencies dependent on groundwater. Several of the Zone 3 contractors also receive water from the State Water Project, which is delivered through the Coastal Branch Aqueduct. At this time, the District is not authorized to develop additional sources of water. Local agencies receiving water from Zone 3 have the responsibility of determining additional sources of water to meet their needs.

The contracts between Zone 3 and the Contract Agencies contain a drought clause that provides for the possibility of a 50.55% reduction of Zone 3 Water. As the wholesale agency, it is the responsibility of Zone 3 to provide adequate notice to the Contract Agencies regarding any projected reductions in deliveries. It is then the responsibility of the Contract Agency to determine appropriate steps to supplement Lopez supplies with alternate sources, maximize use of alternative water supplies, reduce demand or impose water demand restrictions on their customers.

The contract between Zone 3 and Contract Agencies contains a drought provision that reads as follows:

"At times there may occur a shortage during any year in the quantity of water available for delivery to the Contract Agency by the District pursuant to this contract. In such event no liability shall accrue against the District or any of its officers, agents or employees for any damage, direct or indirect, arising from a shortage on account of drought, or unavoidable causes. In any year in which such a shortage may occur for any cause so that the total quantity of water available to the District for distribution to the Agency and other agencies is less than the total of all quantities contracted for by the Agency and other agencies, the District shall apportion a percentage (the actual percentage is specific to the individual agency) of such total quantity of the water available to it to the Agency. The District shall give the Agency written notice as far in advance as possible of any such reduction in delivery." (Source: Contract between Zone 3 and Contract Agencies, executed on March 28, 1966, adopted by Zone 3, Resolution 141-66).

As described in the Section 1 of this update, previous droughts have not caused a shortage of water in the Lopez system. In previous droughts, all communities within Zone 3 have received their full allocation of water from Lopez Reservoir. During the most recent prolonged drought of 1986 to 1992, Zone 3 communities whose deliveries of water from other sources were reduced were able to purchase surplus Zone 3 Water. In addition to Lopez supplies, local communities also rely on groundwater as a supplemental and back-up supply.

Contract Agency Drought and Water Shortage Consumptive Reduction Methods

To the extent available, this UWMP includes consumptive reduction methods implemented and proposed to be implemented by Contract Agencies.

City of Grover Beach: The draft Water Shortage Contingency Plan and City-adopted Resolution 06-15 (adopted in 2006) include consumptive reduction methods, as follows:

> *Once a water shortage stage has been declared, measures will be implemented to meet water conservation goals. This section describes consumption reduction methods that may be implemented by the City Council in response to water shortage. These measures range from public education to mandatory rationing. Given the City's reliable water supply, only selected reduction measures are recommended.*
>
> *Specific recommended measures to reduce water use in both Stage 1 and 2 are as follows:*
>
> - *Notify all customers of the water shortage.*

- *Mail information to all customers explaining the importance of water conservation.*
- *Provide technical information to customers on means to promote water use efficiency.*
- *Develop a media campaign to promote water conservation.*
- *Develop or expand conservation programs such as low-flow toilet rebates.*

Determination of Water Use Reductions

As a wholesale entity, the District provides allocated water to retail agencies, and as such, will not attempt to quantify actual water use reductions pursuant to Section 10632(8) of the Water Code. Such reductions would be measured by the Contract Agencies. The District will, however, monitor and assess actual metered deliveries relative to each Contract Agency's allocation during drought and normal water years.

SECTION 6: DEMAND MANAGEMENT MEASURES

Section 6.1: Demand Management Measures (DMMs)

As required by the UWMP Act, this section addresses the following items:

- #26. (Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) water survey programs for single-family residential and multifamily residential customers; (B) residential plumbing retrofit; (C) system water audits, leak detection, and repair; (D) metering with commodity rates for all new connections and retrofit of existing connections; (E) large landscape conservation programs and incentives; (F) high-efficiency washing machine rebate programs; (G) public information programs; (H) school education programs; (I) conservation programs for commercial, industrial, and institutional accounts; (J) wholesale agency programs; (K) conservation pricing;(L) water conservation coordinator; (M) water waste prohibition; (N) residential ultra-low-flush toilet replacement programs (10631(f)(1) and (2).

- #27. A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan (10631(f)(3)).

- #28. An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand (10631(f)(4)).

- #29. An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier’s legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation (10631(g)).

Zone 3 is the wholesale agency created solely to provide potable water from Lopez Reservoir to five nearby Contract Agencies within Zone 3. Two of these communities serve less than 3,000 customers and provide 3,000 AF of water and are not required to prepare an urban water management plan. These agencies, however, do actively promote water efficiency. Each Contract Agency has taken different approaches that are most appropriate to their individual situations. The details of these measures are described within documents prepared by those

agencies. For the three larger communities these measures are also described within their corresponding individual UWMPs.

The District does encourage conservation and cooperates with these individual retailers. The District is also currently investigating new ways to promote conservation and is considering signing the statewide Memorandum of Understanding for Urban Water Conservation and will propose to its member agencies a joint conservation and urban water management planning for the 2010 plan. Conservation efforts in Zone 3 are more fully described in the District's Integrated Regional Water Management Plan.

As a wholesale agency, Zone 3 is obligated to address DMMs C, D, G, H, J, L. The DMMs required to be addressed by the District are summarized as follows:

- DMM C – System Water Audits, Leak Detection and Repair
- DMM D – Metering With Commodity Rates for All New Connections and Retrofit of Existing Connections
- DMM G – Public Information Programs
- DMM H – School Education Programs
- DMM J – Wholesale Agency Assistance Programs
- DMM L – Conservation Coordinator

California Urban Water Conservation Council

The California Urban Water Conservation Council (CUWCC) was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. CUWCC's goal is to integrate urban water conservation Best Management Practices (Demand Management Measures) into the planning and management of California's water resources.

CUWCC developed a Memorandum of Understanding (MOU), with the following objectives:

- to expedite implementation of reasonable water conservation measures in urban areas; and
- pursuant to Section 5 of the MOU, to establish assumptions for use in calculating estimates of reliable future water conservation savings resulting from proven and reasonable conservation measures. Estimates of reliable savings are the water conservation savings which can be achieved with a high degree of confidence in a given service area. By entering into the MOU, the signatories will have agreed upon the initial assumptions to be used in calculating estimates of reliable savings. These assumptions are included in Exhibit 1 to this MOU (see Appendix C). It is probable that average savings achieved by water suppliers will exceed the estimates of reliable savings.

The CUWCC will be comprised of all signatories to the MOU, grouped according to definitions in the CUWCC guidelines. The signatories agree to the necessary organization and duties of the CUWCC Council as specified in Exhibit 2 to this MOU. At this time, the County of San Luis Obispo intends to follow all CUWCC guidelines to the extent practicable, but does not anticipate being a signatory to the MOU in the near future.

DMM A – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers (Applies to retail water agencies)

The District does not have any direct customers, and does not have the authority to conduct water audits/surveys for customers within the contracting agencies' service areas.

DMM B – Residential Plumbing Retrofit (Applies to retail water agencies)

The District does not have any direct customers or the authority to conduct plumbing retrofits for customers within the contracting agencies' service areas.

DMM C – System Water Audits, Leak Detection and Repair

The District currently has a preventative maintenance schedule for annual meter testing and weekly inspections for leaks, and a process for responding to and fixing reported leaks and breaks. The inspections are conducted by each reach of pipeline or "Unit" . The "Units" are segments of delivery pipeline that are divided for retail agency accounting and billing purposes. Expenditures for inspecting for and repairing leaks/breaks are covered by the unit budget allocations. An estimate of existing conservation savings on water use within the supplier's service area as a result of implementing the demand management measure, and the effect of the savings on the supplier's ability to further reduce demand is not available, or applicable, since contracts with Contract Agencies specify a certain quantity (allocation) of water to be supplied. The three Contract Agencies who must prepare UWMPs (City of Pismo Beach, City of Grover Beach, City of Arroyo Grande) will address corresponding details in their respective UWMPs. As of 06/08/2011 this information is not available. Should this information be made available by the Contract Agencies in time for inclusion in this UWMP 2010 update, such information will be summarized.

As part of this UWMP 2010 update, the past 3 years of meter reading data was reviewed. As expected, during some months, turnout metered water totals exceeded that produced at the Lopez WTP, and vice versa. Theoretically, the total water metered at the plant must equal that metered to the individual Contract Agencies. Practically speaking, some degree of discrepancies will exist due to inaccuracies in meter readings and calibration, and also discrepancies in the time that such meter readings are recorded. For the three years 2008, 2009 and 2010, the total metered water to customers was within 2 percent of total plant production. In this particular case, the turnout metered totals (to Contract Agencies) were higher than Lopez WTP production by 2% (225 AFY). Based on a review of meter readings from the past three years, there are no apparent signs of major loss of water (through transmission main leaks), and the 2% discrepancy between turnout meter readings and Lopez WTP metered readings is low. According to American Water Works Association (AWWA) M32, un-accounted for water can typically range from 10 to 15 percent.

The District will implement applicable aspects of this DMM consistent with the California Urban Water Conservation Council (CUWCC) guidelines (Paragraph 1.2, Water Loss Control). Actions will include:

1) Standard Water Audit and Water Balance. The District will quantify their current volume of apparent and real water loss. Such loss will be calculated as the difference between potable water metered as it enters the transmission main, as compared to the total of potable

water metered and sold to Contract Agencies. The District will complete the standard water audit and balance using the AWWA Water Loss software to determine their current volume of apparent and real water loss and the cost impact of these losses on utility operations on an annual basis.

2) Validation. The District will review for the next four years, data to develop a validated data set for all entries of their water audit and balance. Data validation will follow the methods suggested by the AWWA Software to improve the accuracy of the quantities for real and apparent losses.

3) Economic Values. For purposes of this DMM, the economic value of real loss recovery is based upon the District's avoided cost of water treatment as calculated by the Council's adopted Avoided Cost Model or other agency model consistent with the Council's Avoided Cost Model.

4) Component Analysis. A component analysis will be conducted as required at least once every four years. The analysis is defined as a means to analyze apparent and real losses and their causes by quantity and type. The goal is to identify volumes of water loss, the cause of the water loss and the value of the water loss for each component. The component analysis model then provides information needed to support the economic analysis and selection of intervention tools. An example is the Breaks and Background Estimates Model (BABE) which segregates leakage into three components: background losses, reported leaks and unreported leaks.

5) Interventions. The District will reduce real losses to the extent cost-effective, by means of implementing needed repairs and proper maintenance of the water transmission system. The District will refer to the AWWA's 3rd Edition M36 Publication, *Water Audits and Loss Control Programs* (2009) for specific methods to reduce system losses.

6) Customer Leaks. The District does not have authority to address Contract Agencies' customer leaks. Such actions will be addressed by the Contract Agencies. It is expected that Contract Agencies will advise customers whenever it appears possible that leaks exist on the customer's side of the meter.

<u>Implementation Steps</u>
Steps to implement this DMM fully include, in year 1, training operations and other staff on the CUWCC guidelines, assigning roles and responsibilities for reporting, and refining the Zone 3 budget as needed for year 2 and beyond to comply with the guidelines for implementing this DMM.

<u>Schedule</u>
While the existing preventative maintenance program has been in place for some time, work will begin in Fiscal Year 2011-12 to implement this DMM in accordance with CUWCC guidelines. Milestones include annual reporting, a benchmark for the performance indicator in terms of water loss standards determined after the first 4 years data collected, annual use of AWWA software, continued annual testing of meters starting in year 2, data accuracy and data completeness improvement by the end of years 4 and 5, a component analysis of real losses every 4 years, and progress in water loss control performance in years 5 through 10.

<u>Effectiveness</u>
Effectiveness of implementing this DMM will be evaluated in accordance with CUWCC guidelines, as summarized below:

> Beginning in the fifth year of implementation, through the tenth year of implementation, the District will demonstrate progress in water loss control performance as measured by the AWWA software real loss performance indicator "gallons per service connection

(turnout) per day;" "gallons per mile of mains per day;" or other appropriate indicator by one of the following:

a) Achieving a performance indicator score less than the District's score the previous year;
b) Achieving a performance indicator score less than the average of the District's scores for the previous three years; or
c) Achieving a performance indicator score in the top quintile (20%) of all signatory agencies reporting such performance indicator with a Data Validity Level IV; or ;
d) In year 6 and beyond reducing real losses to or below the benchmark value determined, as described above (establishing benchmark after first 4 years data collected).

The District will repair all reported leaks and breaks to the extent cost effective and as promptly as practicable. By the end of the second year, the District will establish and maintain a record-keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. By the end of the fourth year, the District will include estimated leakage volume from report to repair, and cost of repair (including pavement restoration costs and paid-out damage claims, if any).

DMM D – Metering With Commodity Rates for All New Connections and Retrofit of Existing Connections

All connections between Zone 3and the Contract Agencies are metered. The Zone 3 Contract Agencies also fully meter their customers as well. As a wholesale agency, the District does not have the authority to set commodity rates for the purposes of promoting water efficiency and conservation. Zone 3 water rates are flat rates established on the basis of actual capital and operating/maintenance costs associated with Lopez Reservoir, the Water Treatment Plant, and potable water distribution facilities. Also, the water supply to Contract Agencies is fully allocated, and as such, no new connections will be allowed (unless an existing Contract Agency relinquishes a portion of their allocation to a new Contract Agency). Details of this DMM for the Contract Agencies required to prepare UWMPs will be addressed in their corresponding UWMPs.

DMM E – Large Landscape Conservation Programs and Incentives

This measure is the responsibility of the individual retail water agencies.

DMM F – High Efficiency Washing Machine Rebate Programs (Applies to retail water agencies)

This measure is the responsibility of the individual retail water agencies. Zone 3 staff will work with its Contract Agencies to encourage implementation of a program to promote high efficiency washing machines, and implementation of rebate programs where applicable.

DMM G – Public Information Programs

In cooperation with water retailers in San Luis Obispo County, the District funds and supports many public information programs. Such programs include the spring newsletter prepared by the Partners in Water Conservation and the distribution of pamphlets in various public events. Programs also include participation in low water landscape exhibits at the annual Home Show and Mid-State Fair. The District also participates in a public information program to distribute soil moisture meters to home owners. Additional public information on conservation is given as part of the "Sammy the Steelhead" water quality programs.

Existing Efforts

The County recently adopted an updated version of its Conservation Element of the General Plan which includes various policies and implementation strategies related to water conservation (see pages 1-28 of Exhibit C). Various County departments have been identified as responsible for implementing the identified strategies over time (see pages 29-34 of Exhibit C).

The County has a budget for conservation efforts in its Flood Control General fund (see Exhibit D, pdf page 8). The Utilities Division of the Public Works Department is assigned to monitor and participate in the activities of an informal group called Partners in Water Conservation (PIWC), which consists of the conservation coordinators from various water purveyors throughout the County. PIWC jointly sponsors education and outreach programs regarding conservation for the general public including "Waterfest", radio ads and various demonstration programs like sustainable landscaping tours and fair exhibits. Exhibit E includes the roster for PIWC, an example meeting agenda and documentation of the group's bi-monthly meeting schedule. Also included is a screen shot of the conservation website hosted by the County.

For Zone 3, conservation information is included with the annual consumer confidence reports sent to customers, an example of which is included as Exhibit F. The Water Quality Lab for the County also provides materials to school aged children when the opportunity presents itself.

Implementation Steps

The District will implement this DMM, to the extent practicable, following the CUWCC guidelines, which include the implementation of a public information program (program). Implementation will consist of at least the following actions:

1. The program should include, when possible, but is not limited to, providing speakers to employees, community groups and the media; using paid and public service advertising; using bill inserts; providing information on customers' bills showing use for the last billing period compared to the same period the year before; providing public information to promote water conservation measures; and coordinating with other government agencies, industry groups, public interest groups, and the media.

2. The program should include, when possible, social marketing elements which are designed to change attitudes to influence behavior. This includes seeking input from the public to shape the water conservation message; training stakeholders outside the utility

staff in water conservation priorities and techniques; and developing partnerships with stakeholders who carry the conservation message to their target markets.

3. When mutually agreeable and beneficial, the wholesale agency or another lead regional agency may operate all or part of the public information program. If the wholesale agency operates the entire program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting for this BMP. Under this arrangement, a wholesale agency may aggregate all or portions of the reporting and coverage requirements of the retail agencies joining into the mutual consent.

Schedule

The Conservation Coordinator will use the Flood Control General Water Conservation Management Budget to budget for and implement the requirements for the Public Information and School Education BMPs beginning July 1, 2011. The Zone 3 budget will include a designation for conservation efforts by July 1, 2011 in order to, among other things, coordinate with the retail agencies supplied by Zone 3 and the County's Conservation Coordinator on conservation efforts.

Effectiveness

The Conservation Coordinator will maintain this active public information program to assist Contract Agencies in promoting and educating water customers about water conservation.

DMM H – School Education Programs

The District does not currently conduct school education programs regarding water resources or conservation. These programs are conducted at the local level by contract water agencies. Several local agencies have exemplary programs which reach many, perhaps all, of our local schools. These materials include programs developed by the state DWR, the American Water Works Association, Water Education Foundation, WateReuse Association and some locally developed programs. Zone 3 staff will continue to work with Contract Agencies to encourage ongoing education programs for local students.

Implementation Steps

Full implementation of this DMM will be consistent with the CUWCC guidelines including:

1. Implement a school education program to promote water conservation and water conservation-related benefits.

2. Programs shall include working with school districts and private schools in the water suppliers' service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Educational materials shall meet the state education framework requirements and grade-appropriate materials shall be distributed.

3. When mutually agreeable and beneficial, the wholesale agency or another lead regional agency will operate all or part of the education program; if the wholesale agency operates all or part of the retail agency's school education program, then it may, by

mutual consent with the retail agency, assume responsibility for CUWCC reporting of this BMP; under this arrangement, a wholesale agency may aggregate all or portions of the reporting and coverage requirements of the retail agencies joining into the mutual consent.

Schedule

Contract Agencies will continue to provide school education programs educating students on water conservation and efficient water use. The District will continue to promote and encourage Contract Agencies in these efforts.

DMM I – Conservation Programs for Commercial, Industrial and Institutional Accounts (Applies to retail water agencies)

As a wholesaler, the District does not have the authority to conduct commercial and industrial water conservation programs within the service areas of its contracting agencies. These audits are provided by the individual retail agencies. In the future, District staff will work with its Contract Agencies to provide information that will assist them in conducting programs for their commercial, industrial and institutional accounts.

DMM J – Wholesale Agency Assistance Programs

The District is considering signing the statewide MOU for urban water conservation and initiating a joint conservation and urban water management planning effort with its Contract Agencies. Through upcoming discussions regarding a joint program, the District will determine the appropriate role for the District to play in helping local agencies implement the demand management measures. Implementation of demand management measures is discussed at the Zone 3 advisory committee and information is shared among the agencies. In the future, the District will work with local agencies to assess the water savings potential of these efforts.

Existing Efforts

Zone 3 has an Advisory Committee, which meets publicly on a quarterly basis, and is comprised of representatives from the retail agencies receiving water from Zone 3. Zone 3 Advisory Committee advises the County staff regarding management and operations of Zone 3. The implementation requirement regarding a water shortage allocation is addressed in this Zone 3 Urban Water Management Plan, which outlines the relevant contract provisions with retail agencies. Specific consideration of the other DMM coverage requirements has not been addressed by the Advisory Committee and the County.

Implementation Steps

The Zone 3 budget will include a designation for conservation efforts by July 1, 2011 in order to, among other things, coordinate with the retail agencies supplied by Zone 3 and the County's Conservation Coordinator on whether or not and how to implement the wholesale agency assistance programs outlined for the DMM.

DMM K – Conservation Pricing

As a wholesaler, the District does not have the authority to set rates for retail water customers. This authority lies with the individual retail water agencies and cities. During the next year the District will be survey its contracting water agencies regarding their rate structures and will share information about model conserving rate structures with its member agencies.

Conservation Measures by Other Contract Agencies

To the extent that information is available from other Contract Agencies, this UWMP includes an overview of conservation pricing measures implemented or planned to be implemented by Contract Agencies.

- City of Grover Beach: The City of Grover Beach has developed penalties and conservation pricing as part of the draft Water Shortage Contingency Plan (WSCP) as follows:

  The WSCP proposes penalties at various shortage stages including house call warnings, installation of flow restrictors, penalties, fines, and disconnection. For the Water Shortage Contingency Plan, violators should be warned in writing, including time, date, and place of violation; general description of violation, means to correct violation, and date by which the correction is required. The first and subsequent warnings should specify a potential penalty, namely fine and disconnection, with fines increasing with each new violation. A fee also should be charged for restoring service.

DMM L – Conservation Coordinator

Various Utilities Division staff are assigned to cover various conservation efforts as their schedules allow. The primary contact at this time is identified below. In order to comply with the implementation requirements of the MOU (included as Appendix C) and ensure reports on DMM implementation are submitted, the Public Works Director will sign a Public Works Department Procedural Memorandum identifying a Department Conservation Coordinator and outlining their DMM reporting responsibilities, which will include coordination on conservation activities with Zone 3, by July 1, 2012.

Current County Conservation Coordinator Contact:
Courtney Howard
805-781-1016
choward@co.slo.ca.us

DMM M – Water Waste Prohibition

While, as a wholesaler, the District does not have the authority to implement water waste prohibitions for retail water customers, the District will work with Contract Agencies to develop a

model water waste prohibition ordinance if requested by the Contract Agencies. This model ordinance will include standard uses to be prohibited during identified shortage stages and will be shared with all member agencies.

Other Contract Agencies have developed measures to prohibit water waste. To the extent available, Contract Agency measures have been included in this UWMP.

- City of Grover Beach: In 2006 the City adopted Resolution 06-15 adopting the Water Shortage Contingency Plan (WSCP) that includes all recommended mandatory prohibitions against wasteful water use practices. The Draft UWMP for 2010 includes a draft WSCP with the same prohibitions. This draft WSCP is summarized as follows:

The Urban Water Management Planning Act requires provision of mandatory prohibitions against specific water use practices during water shortages. The prohibitions include:

- *Use of potable water for street cleaning.*
- *Unauthorized use of water from any fire hydrant.*
- *Use of potable water to wash sidewalks or roadways where air-blowers or sweeping provides a reasonable alternative.*
- *Use of potable water for construction purposes, such as consolidation of backfill unless no other source of water or method can be used.*
- *Restaurant water service to patrons unless upon request.*
- *Hydrant flushing except where required for public health and safety.*
- *Refilling existing private pools except to maintain water levels.*
- *Use of potable water for planting of turf and other new landscaping unless it consists of low water using, drought tolerant plants.*
- *Use of water for washing cars, boats, sidewalks, driveways or other exterior surfaces without a quick-acting shut-off nozzle on the hose.*
- *Operation of any ornamental fountain or car wash unless the water is re-circulated.*

Depending on the nature of the water shortage and at the discretion of the City Council, the above measures can be modified. Often-used variations include banning water use for planting any new landscaping, limiting landscape watering to specific days of the week, and discontinuing operation of all fountains.

DMM N – Residential Ultra-low Flush Toilet Replacement Program (Applies to retail agencies)

Ultra-low flush toilet replacement programs are being implemented by the individual retail water agencies. As a result of past droughts and limits on local water supplies, as well as changes to the plumbing code, many residential toilets have already been replaced. In other parts of the county, the County Planning Department has implemented ordinances including retrofit-at-time-of-sale, and requirements for new development to retrofit existing homes and businesses to offset new water demands. When appropriate, the District will work with its Contract Agencies to help assure effective implementation of this measure.

Additional information on demand management measures can be found in retailer UWMPs and in the District's IRWM.

Evaluation of Demand Management Measures Not Implemented

The District is either implementing or planning to implement applicable demand management measures. As described in the previous section, the District plans to pursue development of a joint water conservation program with its Contract Agencies in order to increase the effectiveness of its efforts in the future. DMMs that are not being implemented are the result of such measures being outside of the responsibility of the District (such DMMs are not the responsibility of the District as a wholesale agency).

SECTION 7: CLIMATE CHANGE (OPTIONAL, NOT INCLUDED)

SECTION 8: COMPLETED UWMP CHECKLIST

Table I-2 Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		Section 1.1: Coordination
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Section 1.1: Coordination
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Section 1.2: Plan Adoption, Submittal, and Implementation
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		Section 1.1: Coordination
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		Section 1.1: Coordination

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Section 1.1: Coordination
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Section 1.2: Plan Adoption, Submittal, and Implementation
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Section 1.2: Plan Adoption, Submittal, and Implementation
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to 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. This also includes amendments or changes.	10644(a)		Section 1.2: Plan Adoption, Submittal, and Implementation
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Section 1.2: Plan Adoption, Submittal, and Implementation
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Section 2.1: Service Area Physical Description (Service Area)
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Section 2.1: Service Area Physical Description (Climate)

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
10	Indicate the current population of the service area	10631(a)		Section 2.2: Service Area Population
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)		Section 2.2: Service Area Population
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Section 2.2: Service Area Population
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)	Not applicable to Wholesaler.	Section 3.4: Baselines and Targets
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Not applicable to Wholesaler.	Section 3.1: Water Demands
3	Report progress in meeting urban water use targets using the standardized form.	10608.40	Not applicable to Wholesaler.	Section 3.4: Baselines and Targets

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (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, conjunctive use, and (I) agriculture.	10631(e)(1)		Section 3.1: Water Demands
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)		Section 3.2: Water Demand Projections
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)	Not applicable to wholesaler.	Section 3.1: Water Demands
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)		Section 4.1: Water Sources
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate “not applicable” in lines 15 through 21 under the UWMP location column.	10631(b)	Not applicable to wholesaler.	Section 4.2: Groundwater
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)	Not applicable to wholesaler.	Section 4.2: Groundwater
16	Describe the groundwater basin.	10631(b)(2)	Not applicable to wholesaler.	Section 4.2: Groundwater
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)	Not applicable to wholesaler.	Section 4.2: Groundwater

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)	Not applicable to wholesaler.	Section 4.2: Groundwater
19	For groundwater basins that are not adjudicated, provide information as to whether DWR 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. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)	Not applicable to wholesaler.	Section 4.2: Groundwater
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)	Not applicable to wholesaler.	Section 4.2: Groundwater
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	See 14 above. See projections for 2015, 2020, 2025, and 2030.	Section 4.2: Groundwater
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Section 4.3: Transfer Opportunities
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Section 4.6: Future Water Projects
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Section 4.4: Desalinated Water Opportunities
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Section 4.5: Recycled Water Opportunities
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		Section 4.5: Recycled Water Opportunities

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		Section 4.5: Recycled Water Opportunities
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Section 4.5: Recycled Water Opportunities
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Section 4.5: Recycled Water Opportunities
49	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.	10633(e)		Section 4.5: Recycled Water Opportunities
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		Section 4.5: Recycled Water Opportunities
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		Section 4.5: Recycled Water Opportunities
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Section 5.1: Water Supply Reliability
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Section 5.4: Drought Planning
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Section 5.1: Water Supply Reliability

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Section 5.4: Drought Planning
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)		Section 5.4: Drought Planning
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		Section 5.2: Water Shortage Contingency Planning
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		Section 5.2: Water Shortage Contingency Planning
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		Section 5.2: Water Shortage Contingency Planning
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Section 5.2: Water Shortage Contingency Planning
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)	Not applicable to Wholesaler.	Section 5.2: Water Shortage Contingency Planning
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Section 5.2: Water Shortage Contingency Planning
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)	Not applicable to wholesale entity.	Section 5.4: Drought Planning

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634		Section 5.3: Water Quality
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Section 5.4: Drought Planning
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)		Section 6.1: DMMs
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Section 6.1: DMMs
28	Provide 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 ability to further reduce demand.	10631(f)(4)	Not applicable to Wholesaler.	Section 6.1: DMMs
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	Not applicable.	Section 6.1: DMMs
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	District is not a member of CUWCC. Not applicable.	

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

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

REFERENCES AND LINKS

Agency Web Sites:

City of Arroyo Grande Public Works
http://www.arroyogrande.org/public_works/index.php

City of Grover Beach Community Development Department
http://www.grover.org/commdev.htm

City of Pismo Beach Engineering Department
http://www.pismobeach.org/SITE/index/index.html

Avila Beach Community Services District
http://www.slocountywater.org/will-serve/other-providers/avilacsd.htm

Oceano Community Services District
http://www.oceanocsd.org

San Luis Obispo County Flood Control and Water Conservation District Zone 3
http://www.SLOCountyWater.org/site/Flood Control and Water Conservation District Zones/ZONE 3

References:

Arroyo Grande Creek Habitat Conservation Plan
http://www.slocountywater.org/csa-zones/zone3/agcreek.htm

San Luis Obispo County Integrated Regional Water Management Plan
http://www.slocountywater.org/reports/irwm/index.htm

State of California Natural Resources Agency Department of Water Resources. (2011, March). *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan.* Sacramento, CA: Author.

Contract Between San Luis Obispo County Flood Control and Water Conservation District and the City of Arroyo Grande for a Water Supply. (2000, August). San Luis Obispo, CA.

Contract Between San Luis Obispo County Flood Control and Water Conservation District and San Luis Obispo County Service Area #12 for a Water Supply. (2000, August). San Luis Obispo, CA.

Contract Between San Luis Obispo County Flood Control and Water Conservation District and the City of Grover Beach for a Water Supply. (2000, August). San Luis Obispo, CA.

Contract Between San Luis Obispo County Flood Control and Water Conservation District and Oceano Community Services District for a Water Supply. (2000, August). San Luis Obispo, CA.

Contract Between San Luis Obispo County Flood Control and Water Conservation District and the City of Pismo Beach for a Water Supply. (2000, August). San Luis Obispo, CA.

County of San Luis Obispo. (2000, September). State of California, *Resolution No. 2000-390*. San Luis Obispo, CA: Author.

County of San Luis Obispo Board of Supervisors. (2011, March). *Staff Report and Resolution Regarding Zone 3 Surplus Water*. San Luis Obispo, CA: Author.

County of San Luis Obispo. (2010, May). *General Plan: Conservation and Open Space Element* (pp. 243-274). San Luis Obispo, CA: Author.

Stetson Engineers, Hanson Environmental, Ibis Environmental Services. (2004, February). *Arroyo Grande Creek Habitat Conservation Plan (HCP) and Environmental Assessment/Initial Study (EA/IS) for the Protection of Steelhead and California Red-Legged Frogs.* San Rafael, CA: Author.

Carollo Engineers. (2011, March). *San Luis Obispo County Master Water Plan- Draft* (pp. 3-1-3-363). Walnut Creek, CA: Author.

Goldsmith, J.K., (2009, February 23). *Memorandum: Issues Related to Rising Lopez Dam*, 1-2.

County of San Luis Obispo Department of Public Works. (2007, July). *San Luis Region Integrated Regional Water Management Plan.* CA: Author.

Benedix, D. (2010, May 26). *Memorandum: Lopez Plant Efficiency Assessment – Status and Completion Report*, 1-21.

Black & Veatch Corporation. (2002, June). *Zone 3 of the Flood Control and Water Conservation District of San Luis Obispo County: Lopez Water Treatment Plant Audit.* CA: Author.

County of San Luis Obispo Department of Public Works. (2010). *Lopez Project: 2009 Water Quality Report.* CA: Author.

County of San Luis Obispo Department of Public Works. (2009). *Lopez Project: 2008 Water Quality Report.* CA: Author.

County of San Luis Obispo Department of Public Works. (2008). *Lopez Project: 2007 Water Quality Report.* CA: Author.

Midcoast Safety. (2004, August). *Risk Management Plan for County of San Luis Obispo Lopez Water Treatment Plant and CSA No. 18 – Wastewater Treatment Plant.* Templeton, CA: Author.

Benedix, D. (2009, January 7). *Memorandum: Lopez Reservoir Expansion – Spillway Raise Project Advisory Group Recommendations*, 1-4.

Tough, S., Wong, N. (2008, November 11). *Preliminary Program – Level Budget and Schedule for Lopez Reservoir Expansion,* 1-30.

County of San Luis Obispo. (2007, February). *San Luis Obispo County Flood Control and Water Conservation District Zone 3 Lopez Project: Interim Downstream Release Schedule,* 2-23.

City of Pismo Beach. (2010, August). *Request for Proposals Lopez Reservoir Spillway Project*, 4-18.

Heimel, D. (2010, September 9). *Memorandum: Capacity Evaluation of the Lopez Pipeline for Delivery of Additional State Water Project Supplies to the Northern Cities*, 1-86.

San Luis Obispo County Water Resources. (2008). *San Luis Obispo County State Water Project.* Retrieved March 17, 2011 from http://www.slocountywater.org/site/index.htm

California Urban Water Conservation Council. (2011). *Education Programs: Public Information Programs.* Retrieved March 25, 2011 from http://www.cuwcc.org/mou/bmp2-education-programs.aspx

Water Systems Consulting, Inc. (2011, April). *Capacity Assessment of the Coastal Branch, Chorro Valley and Lopez Pipelines - Draft.* San Luis Obispo, CA: Author.

Port San Luis Harbor District. (1994, May). *Port Master Plan 1994 Update*, Port San Luis, CA: Author.

Carollo Engineers. (2007, May). *City of Pismo Beach Water Reuse Study*. Walnut Creek, CA: Author

LAFCO. (2008, December). *Municipal Service Review Draft: Avila Beach Community Services District*. San Luis Obispo, CA: Author.

County of San Luis Obispo General Services Agency. (2010, April 23). *Request for Proposal PS-#1084*. San Luis Obispo, CA: Author.

Water Systems Consulting, Inc. (2010, April 15). *Capacity Assessment of the Coastal Branch, Chorro Valley and Lopez Pipelines – Draft.* San Luis Obispo, CA: Author.

Wallace Group. (2010, June). *Recycled Water Distribution System Conceptual Plan – South San Luis Obispo County Sanitation District WWTP*. San Luis Obispo, CA: Author.

Wallace Group. (2010, June). *Recycled Water Distribution System Conceptual Plan – City of Pismo Beach WWTP*. San Luis Obispo, CA: Author.

Wallace Group. (2009, February), *Water Recycling Update Report – South San Luis Obispo County Sanitation District.* San Luis Obispo, CA: Author.

Wallace Group et.al. (2008, October*). South San Luis Obispo County Desalination Funding Study*. San Luis Obispo, CA: Author.

Appendix A

Public Notices, Proof of Public Hearing and Resolution of Plan Adoption

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS
Paavo Ogren, Director
County Government Center, Room 207 • San Luis Obispo, CA 93408 • (805) 781-5252
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April 7, 2011

Public Works Director/City Engineer Dwayne Chisam
City of Pismo Beach
760 Mattie Rd
Pismo Beach, CA 93449

Subject: 2010 Urban Water Management Plan Update for Zone 3 (Lopez)

Dear Mr. Chisam:

Zone 3 of the Flood Control and Water Conservation District (District) is in the process of preparing its 2010 Urban Water Management Plan (UWMP) Update as required by State of California Law through the Urban Water Management Planning Act. The UWMP Act requires that retail water suppliers document water supply, supply reliability, demand, and other issues through the year 2030. The UWMP process is intended to be a collaborative effort between all project stakeholders to the extent practicable.

As you may be aware, Zone 3 of the Flood Control and Water Conservation District encompasses all of the area served by the Lopez water system and includes the Cities of Arroyo Grande, Grover Beach, and Pismo Beach, and the unincorporated communities of Oceano and Avila Beach.

You are being contacted because the District is required to notify cities and agencies within its service area of the preparation of the 2010 UWMP Update at least 60 days before the public hearing and adoption take place. We will provide you with subsequent notice that the 2010 UWMP draft us available for review upon release of the public review draft.

The District would like your comments and feedback for incorporation into the Final Draft and adopted Final UWMP, which is due to the Department of Water Resources by July 1, 2011. The Public Review Draft will be available on the District's website:

www.SLOCountyWater.org/site/Flood Control and Water Conservation District Zones/ZONE 3

This letter serves as your official notice of preparation and intent to adopt the Zone 3 2010 UWMP Update. We encourage you to review the draft document and offer your

feedback and comments. If you have questions or comments, please contact Wallace Group, the consultant preparing the 2010 UWMP update under contract with the District (contact info below).

Steven G. Tanaka, PE
Director of Water Resources
Wallace Group
612 Clarion Court
San Luis Obispo, CA 93401
(805) 544-4011
stevent@wallacegroup.us

Sincerely,

DEAN BENEDIX
Utilities Division Manager

File: CF 340.142.01

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Easy Peel® Labels
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BEFORE THE BOARD OF SUPERVISORS

of the

SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

Tuesday, June 21, 2011

PRESENT: Supervisors Frank Mecham, Bruce S. Gibson, Paul A. Teixeira, James R. Patterson and Chairperson Adam Hill

ABSENT: None

RESOLUTION NO. 2011-183

RESOLUTION ADOPTING THE 2010 URBAN WATER MANAGEMENT PLAN FOR THE SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT ZONE 3 (LOPEZ RESERVOIR) AS REQUIRED BY THE CALIFORNIA URBAN WATER MANAGEMENT PLANNING ACT, CALIFORNIA WATER CODE DIVISION 6, PART 2.6

The following resolution is hereby offered and read:

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Planning Act) during the 1983-84 Regular Session, and as amended subsequently, which mandates that every retail and wholesale water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (UWMP), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the San Luis Obispo County Flood Control and Water Conservation District (District) Zone 3 is an urban water wholesaler providing water to more than 3,000 customers or supplying more than 3,000 acre feet of water annually; and

WHEREAS, the UWMP must be adopted by July 1, 2011, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS, the District has therefore contracted with a consultant to prepare a draft UWMP for the Flood Control and Water Conservation District, Zone 3; and

WHEREAS, the District circulated said UWMP among local retail water suppliers contracted to receive water from Lopez Reservoir; and

WHEREAS, the District conducted a properly noticed public hearing regarding said UWMP on Tuesday, June 21, 2011; and

WHEREAS, the District shall file said UWMP with the California Department of Water Resources by July 21, 2011;

NOW, THEREFORE, BE IT RESOLVED AND ORDERED that the Flood Control and Water Conservation District of the County of San Luis Obispo, State of California, hereby:

1. Approves the 2010 Urban Water Management Plan; and

2. Authorizes and directs the Manager of the Utilities Division of the San Luis Obispo County Public Works Department to submit the 2010 Urban Water Management Plan to the Department of Water Resources within 30 days of execution of this Resolution.

Upon motion of Supervisor Gibson, seconded by Supervisor Mecham, and on the following roll call vote, to wit:

AYES: Supervisors Gibson, Mecham, Teixeira, Patterson and Chairperson Hill

NOES: None

ABSENT: None

ABSTAINING: None

the foregoing Resolution is hereby adopted.

Adam Hill
Chairperson of the Board of Supervisors

ATTEST:

Julie L. Rodewald
Clerk of the Board of Supervisors

By: /s/Sandy Currens
Deputy Clerk

APPROVED AS TO FORM AND LEGAL EFFECT:

WARREN R. JENSEN
County Counsel

By: /s/Patrick J. Foran
Deputy County Counsel

Dated: 06/07/2011

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STATE OF CALIFORNIA,
County of San Luis Obispo, } ss.

I, Julie L. Rodewald, County Clerk and ex-officio Clerk of the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District, do hereby certify the foregoing to be a full, true and correct copy of an order made by the Board of Supervisors, as the same appears spread upon their minute book.

WITNESS my hand and the seal of said Board of Supervisors, affixed this 29th day of June, 2011.

Julie L. Rodewald
County Clerk and Ex-Officio Clerk of the Board of Supervisors

(SEAL)

By: Sandy Currens Deputy Clerk.

Appendix B

INTERIM DOWNSTREAM RELEASE SCHEDULE (LOPEZ RESERVOIR)

SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
ZONE 3
LOPEZ PROJECT

Interim Downstream Release Schedule

February 2, 2007

San Luis Obispo County Flood Control
and
Water Conservation District Zone 3 (Lopez Project)

Interim Downstream Release Schedule

February 2, 2007

I. Executive Summary

II. Purpose

III. Goals and Objectives

IV. Approach

V. Low Reservoir Response Plan

VI. Monitoring

VII. In-Stream Improvements

VIII. Costs

IX. Schedule

X. Environmental Requirements

XI. Exhibits

I. Executive Summary

The purpose of this Interim Downstream Release Schedule (IDRS) is to provide a plan for managing downstream releases from Lopez Dam prior to the approval of the project's Habitat Conservation Plan (HCP). Included in the IDRS is a Low Reservoir Response Plan (LRRP) consisting of a methodology to assess near-term reservoir levels and a set of actions that could be taken to mitigate the impacts of low reservoir levels.

The Lopez Project currently delivers an annual total of 8,934 acre feet of water for municipal, environmental, and agricultural uses. This amount exceeds the traditional safe annual yield of the reservoir by 204 acre feet/year. Analysis of stream flows suggests that reducing downstream releases during the wet season (January 1 through March 31) has the potential to increase storage in the reservoir by amounts that exceed 204 acre feet, without resulting in impacts to agricultural or environmental resources. However, to ensure that no impacts to federally listed species occurs, it is necessary to add two additional stream flow monitoring stations, improve the equipment used at the two existing stations, and establish additional visual monitoring points on the creek. In addition, the ability to affect increases in storage over the longer term may be enhanced by implementing in-stream fish passage barrier improvements, consistent with those envisioned by the draft Habitat Conservation Plan. Annual costs associated with increasing storage range from $410 to a low of $22 per acre foot, depending on the degree of effort needed to effectively monitor the stream and the actual amount of increased storage that is achieved.

Analysis of current release rates shows that, if these rates had been in place during the driest period on record since completion of the Lopez Dam, the project would be capable of meeting all current expectations (municipal, environmental, agricultural) without falling below 23,000 acre feet in storage, or approximately 46% of the capacity of the reservoir. However, a conservative approach to reservoir management is prudent due to the critical nature of the project in providing for municipal water supplies, as well as the variable nature of long term climate changes. Consequently, a Low Reservoir Response Plan (LRRP) has been developed in order to pre-plan a set of potential actions that could be taken if the reservoir were to fall below 20,000 acre feet in storage (two years of deliveries above minimum pool). Implementation of the LRRP would involve incremental reductions in both downstream releases and municipal deliveries. The degree of reductions would be dependent on the length of the drought event, reservoir levels, and long term climate predictions.

II. Purpose

The purpose of this Interim Downstream Release Schedule (IDRS) is to provide a plan for managing downstream releases from Lopez Dam prior to the approval of the project's Habitat Conservation Plan (HCP). Although the HCP contains a preferred alternative that includes a detailed downstream release schedule, certain elements of that schedule may result in incidental take of steelhead or other listed species during prolonged dry periods that result in low reservoir levels. Therefore, the HCP preferred alternative will not be proposed for implementation unless and until the necessary approvals have been granted pursuant to the federal Endangered Species Act. This Interim Downstream Release Schedule describes Zone 3's plan and approach to ensuring that interim releases into Arroyo Grande Creek continue without impacting environmental, agricultural or municipal water supplies.

III. Goals and Objectives

The Lopez Project, organized as Zone 3 of the San Luis Obispo County Flood Control and Water Conservation District, was constructed in the late 1960's to provide a reliable water supply for urban users in southern San Luis Obispo County. Municipal water contract deliveries total 4,530 acre feet per year (AFY). The project also makes downstream releases to Arroyo Grande Creek to ensure adequate recharge of riparian aquifers to support agricultural wells. Agricultural releases have historically averaged 2,335 AFY, although at the time the dam was constructed downstream releases were anticipated at 4,200 AFY. Flood Control Zone 3 also currently releases 4 million gallons per day (6.19 cfs) into Arroyo Grande Creek from the outlet works at Lopez Dam pursuant to informal agreements with state and federal resource agencies pending approval of the project's HCP. These annual downstream releases total 4,344 AFY. Additional summertime agricultural releases total 60 AFY. It should be noted that agricultural and habitat releases are conjunctive; therefore, during most months the habitat release is sufficient to supply agricultural needs.

Municipal contract obligations plus downstream releases total 8,934 AFY. However, the safe yield of the reservoir is established at 8,730 AFY. Current uses exceed the safe yield by 204 AFY. Given that the project has experienced dryer than normal periods lasting up to seven consecutive years, there is a concern that continuation of releases that exceed the safe yield may result in an inability for the project to meet its current and historic obligations, should a prolonged dry period develop.

Three key concepts support an approach that increases storage in the reservoir in order to meet annual demands:

1. The Lopez Project provides a significant percentage of the municipal water supply for Zone 3 entities; to the degree that reductions in deliveries

at this time could result in a substantial hardship to a number of residents. While efforts to enhance the amount of supply and the efficient use of current supplies are ongoing, those efforts have not yet matured to the point where reductions in deliveries from the Lopez Project could be absorbed into the communities' water budget.

2. The current "level" release rate of 4 million gallons per day (6.19cfs) into Arroyo Grande Creek was established to ensure that no "take" of steelhead would occur *under dry season conditions*. Closer monitoring of stream flows should provide opportunities to reduce releases to the stream without incurring impacts to sensitive species during periods when agricultural pumping is reduced and inflows to the creek from adjacent streamside aquifers is the greatest.

3. Continued operation of the system above safe yield could, in extreme situations, result in conditions where downstream releases could not be made without resulting in significant impacts to water users. Absent alternative municipal water sources, Zone 3 would be placed in an untenable situation. Further, avoidance of any condition that would result in severe impacts to sensitive species, municipal users, or agricultural interests prior to completion of the HCP process is key to successful completion of the HCP.

Therefore, the objectives of the IDRS are to operate the dam in a manner that:

1. Allows the project to continue to meet its contractual responsibilities

2. Maximizes the potential for interim "surplus" water generation

3. Results in no discernable impacts to steelhead.

4. Meets agricultural needs

5. Generates data and information that can be used to supplement the HCP and/or assist in implementing the HCP once it's approved.

IV. Approach

This Interim Downstream Release Schedule approaches the task of matching project deliveries to safe yield by reducing the total annual downstream release. This will be accomplished by enhancing the ability to monitor stream flow at various points along the stream and reducing reservoir releases during and/or immediately following periods of heavy precipitation in the wet season. Should efforts to increase reservoir storage during winter months be successful, consideration will be given to reducing releases during spring and fall months.

Phase I focuses on reducing releases during the wettest period of the year to take advantage of both reduced agricultural pumping and inflows from both surface and subsurface sources.

Based on the level of success achieved by phase I efforts, reductions in fall and spring releases, consistent with the release calculations established in the HCP, may be implemented. "Success", with respect to phase I efforts, is based on:

1. A demonstrated ability to accurately predict stream response to release reductions,

2. Confidence that changes in the release rate can be made without incurring stream flow changes that negatively impact sensitive species, and

3. Increases in storage achieved in phase I result in a favorable cost/benefit ratio.

Based on direct observations of stream flow during the 2004/2005 wet season, and during the initial 2005/2006 wet season, it is evident that wet season flow volumes in Arroyo Grande Creek increase as the stream flows from Lopez Dam to the ocean at Oceano. From an initial flow of 6cfs at the outlet works, observed wet season stream flow typically exceeds 20cfs at the 22nd Street Bridge in Oceano, just upstream from the stream's ocean outlet. During storm events, flows at 22nd Street can increase by several magnitudes owing to the flow contributions from developed areas as well as from tributary streams. Given that flows at 22nd Street are influenced more by the watershed's response to winter rains than by releases from Lopez Dam, some degree of reductions in release from the dam could be made without resulting in more than minimal impacts on stream flow throughout the majority of the system.

According to the "Arroyo Grande Creek Permeability Study San Luis Obispo County, CA" prepared by Questa Engineering Corporation in April of 2001, the "critical" segment of the creek (from a flow maintenance perspective) is the reach from the dam to below Biddle Park near the Talley Bridge, a distance of approximately 2.5 miles. There are no significant tributary channels that feed into Arroyo Grande Creek in this segment, the watershed rocks adjacent to this reach are predominately poor to non-water bearing units, and groundwater inflow from the margins of the valley is limited. Flow and water depth in this reach of the creek are influenced primarily by releases from the dam except during heavy winter rains when agricultural water use is reduced and the small tributary watershed below the dam contributes to stream flow. Below this reach during the wet season the creek gains flow from tributaries and groundwater inflow, and the impacts of agricultural pumping are reduced or eliminated due to the effects of rainfall.

Phase I efforts will match the timing of reductions in reservoir releases to wet season storm events, using the 2.5 miles of stream below the dam as the key measurement segment. The volume of reductions will be based on the response of the initial stream segment to reduced releases. Ramping rates will be consistent with those established by the draft HCP, that is, changes in release rates will not exceed 1cfs/day.

The following table illustrates the current volumes of wet season downstream release compared to a range of modified release rates, averaged over the 90-day period from January 1 to April 1:

TABLE 1

Modified Release Rate Calculations 90-day Wet Season								
Rate/ % Reduction:	**Current**	**17%**	**19%**	**33%**	**47%**	**50%**	**67%**	**83%**
CFS:	6.00	5.00	4.86	4.00	3.20	3.00	2.00	1.00
Acre Feet/Day:	11.90	9.92	9.63	7.93	6.35	5.95	3.97	1.98
90 Day Total (AF):	1,071.07	892.56	867.07	714.05	571.07	535.54	357.02	178.51
Total Additional Storage:	0.00	178.51	204.00	357.02	500.00	535.53	714.05	892.56

As shown in table 1, the 204 average annual AFY increase in storage necessary to match reservoir demands to the safe yield could be accomplished by reducing wet season releases to an average of 4.86cfs, 19% below current levels, for a period of 90 days. Similarly, a 500 AFY reduction would require a 47% reduction in releases during the wet season, to 3.2cfs.

Implementation/Operation

Initial release reductions would begin in January after winter rains have saturated the valley and stream flow measurements show the stream to be gaining flow from the dam to the ocean. At that point a release reduction of 0.5cfs would be made, with any consequent effects on stream flow noted. Absent any substantial negative stream effects after 24 hours, additional reductions in 0.5cfs increments would be made, following the same measurement protocol (one step in each 24 hour period). If flow reductions reach 4.8cfs without negative stream effects, the release rate will be "held" for a period of at least five days, with ongoing stream monitoring, to ensure that the program remains in compliance with its stated objectives. Further release reductions would be similarly stepped down, dependent on monitoring results as well as on observed and predicted weather

patterns. It is not anticipated that release rates would fall below 3cfs in the first winter period, regardless of monitoring results. For comparison purposes, Exhibit 1 illustrates the IDRS release rates together with the current and HCP proposed rates.

Baring unusual weather patterns, at the end of the wet season (April 1) release rates would be stepped up in 1cfs/day increments to 6cfs. Analysis of data would continue through the summer season and necessary adjustments to the next winter's release rates would be made. Also, based on the results of the monitoring, decisions regarding the potential for spring/fall reductions consistent with the HCP preferred alternative would be made.

V. Low Reservoir Response Plan

This Low Reservoir Response Plan (LRRP) describes a set of actions that would be taken if the total volume of storage in the Lopez Reservoir were to fall below 20,000AF, as measured on April 1st of any given year. Because of the number of variables that could precipitate a low reservoir level, this LRRP does not establish specific release rates that would be adopted in the event of a low reservoir condition, rather, this LRRP provides a methodology that would be used to develop an appropriate release rate. Exhibit 2 is a flowchart that illustrates the implementation of the LRRP.

Since its construction in the late 1960's the most significant consecutive years of low reservoir inflow was in the 1987-1992 period (See Exhibit 3, Historical Lopez Reservoir Storage). Six consecutive below average inflow years reduced the reservoir storage to 16,500 acre-feet (measured on September 30), which is about 30 percent of the total storage capacity. During that same period, the annual average deliveries to municipal use was 5,426AFY, an average of 896 AFY above contract amounts, for a nine year total of 32,555 AF. Also during that same period, downstream releases were an average of 2,871 AFY, 1,473 AFY below current release levels, for a nine year total of 17,227 AF (Table 2).

When current municipal contract amounts (4530 AFY) and current downstream release amounts were "plugged in" to the data developed from 1987 to 1992, the results indicate that reservoir levels would have been higher than historic levels, and would have never fallen below 20,000 AF (Table 3). This analysis indicates that the potential to experience a critically low reservoir is low; never-the-less, given the importance of the reservoir to meeting environmental, agricultural, and municipal needs, it is considered appropriate to adopt a plan of action to respond to low reservoir levels.

TABLE 2

Recorded Reservoir Data, 1987-1992							
Year	Inflow	Evap.	Rainfall	Municipal	Release	Change Storage	Total Storage
1987	4965	2664	911	5544	2517	-4849	48463
1988	3779	2994	845	5265	2514	-6149	37465
1989	4176	2959	1057	6065	2812	-6603	30860
1990	3155	2533	478	5863	3673	-8436	22425
1991	6290	2016	798	4934	2761	-2623	19802
1992	6577	1846	823	4884	2950	-2280	17521

TABLE 3

Estimated Reservoir Data, 1987-1992, Using Current Release Rates							
Year	Inflow	Evap.	Rainfall	Municipal	Release	Change Storage	Total Storage
1	4965	2664	911	4530	4404	-4880	48463
2	3779	2994	845	4530	4404	-6000	42463
3	4176	2959	1057	4530	4404	-5815	36648
4	3155	2533	478	4530	4404	-6257	30391
5	6290	2016	798	4530	4404	-3442	26949
6	6577	1846	823	4530	4404	-3180	23769

20,000 AF was selected as the appropriate level to implement the LRRP because, at current release and municipal delivery rates, it provides a two year cushion above minimum pool, assuming worst case recorded rainfall and inflow (as experienced in the 1990 water year). Table 4 illustrates the "worst case" scenario, resetting the reservoir level at 20,000 AF and using the 1990 data and current municipal and downstream releases.

TABLE 4

Worst Case Reservoir Drawdown							
Year	Inflow	Evap.	Rainfall	Municipal	Release	Change Storage	Total Storage
0							20000
1	3155	2533	478	4530	4404	-6257	13743
2	3155	2533	478	4530	4404	-6257	7486
3	3155	2533	478	4530	4404	-6257	1229

Note that minimum pool (4,000AF) is reached sometime after year 2, assuming no change in release and municipal delivery rates. Table 5 shows the results of

reducing municipal deliveries by 10%, reducing habitat releases by 500AFY, and eliminating agricultural supplements above habitat releases:

TABLE 5

Sample Modified Reservoir Drawdown Scenario Municipal10% Reduction, Habitat 500AFY Reduction, No Agricultural Supplement Above Habitat Release							
Year	**Inflow**	**Evap.**	**Rainfall**	**Municipal**	**Release**	**Change Storage**	**Total Storage**
0							20000
1	3155	2533	478	4077	3844	-5244	14756
2	3155	2533	478	4077	3844	-5244	9512
3	3155	2533	478	4077	3844	-5244	4268

In the example shown in Table 5, minimum pool is reached after year 3. Using data collected since the construction of the reservoir, decisions about potential changes in release and municipal delivery rates when (and if) the reservoir falls to 20,000 AF on April 1 would be made using the methodology shown in Tables 4 and 5, following the steps shown in Exhibit 2. As shown in Exhibit 2, modifications to release rates and municipal deliveries would be made in concert with actions by each of the Zone 3 contractors to employ conservation steps and access alternative supplies, as detailed in each agency's Urban Water Management Plan.

VI. Monitoring

The ability to accurately monitor the stream flow response in Arroyo Grande Creek to increases and decreases in release rates at Lopez Dam during different climate and weather conditions is critical to the success of the IDRS. Current monitoring efforts consist of stream gages on Arroyo Grande Creek at Arroyo Grande (the Arroyo Grande gage) and at the Cecchetti Road crossing of Arroyo Grande Creek (the Cecchetti gage), along with the release rate flow monitors at the dam outlet works.

Modifications of the current stream monitoring system consist of:

- The addition of automated[1] stream gages on Arroyo Grande Creek at the Rodriguez Bridge (the first road crossing of the creek below Lopez dam) and at 22nd Street in Oceano (the last road crossing of the creek before it discharges into the ocean).

- Automation of the existing gages at Arroyo Grande and Cecchetti Road.

[1] "Automated" means that the information can be read remotely in real time, readings are taken and reported at not less than 1 hour intervals, and all information is electronically recorded and retrievable.

- Additional automation of release rate information at the dam outlet works.

Modifications to existing gages and the installation of the new gage at Rodriquez Bridge are programmed for the summer/fall of 2006, with installation of the new gage at 22nd Street scheduled for the summer of 2007, as shown in Table 6 below. The installation of remote reading capability at the dam outlet works is dependent on technical and cost considerations (which are as yet unknown), given that this information is already be remotely read and recorded at the treatment plant.

TABLE 6

Stream Monitoring Program Improvements Priority & Cost Estimate March 2006					
Priority	**Gage Name Proposed Changes**	**Item Cost**	**Site Costs**	**Cumulative Costs**	**Annual Costs**
1	Modify Arroyo Grande Gage				
	Add alert multi-module	2,211			
	Installation costs	1,000	3,211	3,211	
2	Modify Cecchetti Gage				
	Change to H-350XL Data Collector	2,350			
	H-264 Alert Serial Interface	1,105			
	Installation costs	1,000	4,455	7,666	
3	New Gage at Rodriquez Bridge				
	H-3611 Radar Gage Equipment	3,260			
	Sensor Housing	350			
	H-500XL data logger	1,395			
	H-264 Alert Transmitter	1,105			
	10-watt solar panel	350			
	Model 7154-2 Antenna	140			
	Model 720 Lightening Protect Device	95			**Year 1:**
	Installation costs	5,000	11,695	19,361	19,361
4	New Gage at 22nd Street Bridge				
	H-3611 Radar Gage Equipment	3,260			
	Sensor Housing	350			
	H-500XL data logger	1,395			
	H-264 Alert Transmitter	1,105			
	10-watt solar panel	350			
	Model 7154-2 Antenna	140			
	Model 720 Lightening Protect Device	95			**Year 2:**
	Installation costs	5,000	11,695	31,056	11,695
5	Transmit Discharge Rate to SLO				**Year 3:**
		1,000			1,000
		TOTAL	**COSTS:**	**$32,056.00**	

Automation of all gages, that is,

1. Installing equipment to provide that the information can be read remotely in real time

2. Readings are taken and reported at not less than 1 hour intervals, and

3. All information is electronically recorded and retrievable,

will ensure that changes in stream flow will be noted as they occur and that the results of changes in release rates can be analyzed and correlated in order to guide subsequent decision making.

Additionally, at least during the first season of implementation of the IDRS, visual monitoring points (including staff gages) will be established at the following locations:

- The "gravel pits" just below the dam (Arroyo Grande Creek)
- Biddle Park (Arroyo Grande Creek)
- Mill Road Bridge (Tar Springs Creek)
- Fair Oaks Avenue (Arroyo Grande Creek)
- Valley Road (Los Berros Creek)
- 22nd Street (Arroyo Grande Creek – year 1)

Visual observations will be recorded within 8 hours after changes in release rates are made, with subsequent observations made at 24 and 48 hour intervals after each "set point" is reached. Additional visual observations would be made dependent on weather conditions.

The system of stream gages and visual monitoring locations has been developed in order to provide a complete picture of the response of Arroyo Grande Creek, as follows:

1. ***Gravel Pits*** The visual monitoring point at the gravel pits will show flow levels in the initial reach of Arroyo Grande Creek, and ensure that strandings or trapping of fish in the gravel pits does not occur.

2. ***Rodriquez Bridge*** The new gage at the Rodriquez Bridge will reflect flow conditions in the reach of the Creek extending downstream to the Talley Bridge (per the Permeability Study).

3. ***Biddle Park*** The visual monitoring point at Biddle Park will verify the findings of the permeability study relative to the Rodriquez-Talley reach of Arroyo Grande Creek.

4. ***Cecchetti Road*** The existing gage at Cecchetti Road will show the condition of the creek at a point where it has already had substantial interaction with the streamside aquifer, providing inflow information for the reach above the gage.

5. ***Mill Road Bridge*** The visual monitoring point on Tar Springs Creek at the Mill Road Bridge will provide inflow information from tar Springs Creek.

6. ***Arroyo Grande*** The existing gage at Arroyo Grande will provide combined flow information for Arroyo Grande Creek , Tar Springs Creek, and the streamside aquifers above the City. It will also allow correlation of flow information with historical measurements at this location.

7. ***Fair Oaks Avenue*** The visual monitoring point at the Fair Oaks Avenue bridge will provide information about urban flows out of the City of Arroyo Grande plus show flows entering the flood control channel reach.

8. ***Valley Road*** The visual monitoring point at the Valley Road bridge will provide information about flows in Los Berros Creek before they enter Arroyo Grande Creek.

9. ***22nd Street*** A visual monitoring point in the first year with a gage installed in year two, flow monitoring at 22nd Street will provide information about the total discharge of Arroyo Grande Creek (Flow over the bar also includes contributions from Meadow Creek and the historic Los Berros Channel. Visual monitoring points may be added at these locations if conditions warrant.

All information gathered from gages and visual monitoring will be correlated in a single database, which will be made available to agencies and the public upon request.

VII. In-Stream Improvements

In-stream improvements conducted under this IDRS will be focused solely on improving fish passage past various partial barriers that currently exist in Arroyo Grande Creek. General habitat improvements as described in the HCP will be deferred until the HCP is approved. Because the goals of this IDRS include both an increase in storage in the reservoir and no impacts to steelhead, passage improvements that allow steelhead and other species to move naturally up and down the stream under lower stream flow conditions will be prioritized and implemented as budgets and regulatory requirements allow. The following list of

known barriers (From the Arroyo Grande Creek Watershed Management Plan, March 2005, CA Dept of Fish and Game & Central Coast Salmon Enhancement) will be the basis for the prioritization and implementation of improvements. This list is presented in no particular prioritization order:

1. ***Two Concrete Dams*** Identified in the Stream Inventory Report by the CCC. The dams seem to be nonfunctional as the creek flow has undermined the dams. A structure was identified in a 1972 Stream Survey from CDFG, which had the location at about ¼ mile downstream of the Fair Oaks Crossing. The CCC survey had placed the location of this structure at mile 2.88 from the confluence with the ocean and just over ½ mile downstream of the Fair Oaks Crossing.

2. ***Arroyo Grande Stream Gage*** Identified in numerous reports as probably the most significant barrier downstream of Lopez Dam in the watershed. It is identified in the California Fish Passage Assessment Database as I.D.# 8409. During the CCC stream survey, the structure was measured to be 34.2' wide x 17.5' thick x 4.7' high. It is located at stream mile 4.98 from the confluence with the ocean. There is a low-flow notch in the structure but it may add to the intensity of the barriers by not only being a height barrier but also a velocity barrier. This structure poses a complete barrier for juvenile steelhead as they have been seen jumping at the base of the structure. Adults should be able to pass the structure during migration periods, when there is more water coming over the spillway and back-flooding of the pool downstream of the gage. The pool below the gage is over 5 feet deep and will aid in the migratory effort to pass the gage.

3. ***Rip-Rap Dam*** Identified in the Stream Inventory Report by the CCC. This dam is located about 2000 feet upstream of the stream gage at mile 5.35 from the confluence with the ocean. The structure is 14' wide x 2' thick x 1' high.

4. ***Concrete Dam*** Identified in the Stream Inventory Report by the CCC. This dam is located at stream mile 5.82 from the confluence. The structure is 23' wide x 4' thick x 4.5' high. There is no low flow notch so the water sheets across the top. There is a significant plunge pool below the dam but unless there is enough flow, negotiating the sheet flow could limit fish. It is a barrier to juveniles migrating upstream.

5. ***Cecchetti Road Culvert*** This crossing is identified in numerous reports. It is identified in the California Fish Passage Assessment Database as I.D.# 142. The structure was designed as an Arizona type crossing with a 5-foot Corrugated Metal Pipe (CMP) culvert. It is designed to overtop the crossing during high flows and has swept cars into the creek. This structure might pose a velocity barrier during heightened flows and passage might be an issue on the upstream side where sediment has

been deposited. A thin steep channel is cut as the creek approaches the culvert.

6. ***"S" Rip-Rap Dam*** Identified in the Stream Inventory Report by the CCC. The dam is located at stream mile 9.31 from the confluence with the ocean. The structure is a dam shaped in a form of an "S". It is 17' wide x 13' thick x 1' high.

7. ***Abandoned Dam/Diversion Footings*** Identified in numerous reports and also identified in the California Fish Passage Assessment Database as I.D.# 141 and located at stream mile 11.22 from the confluence with the ocean. This structure appears to be an old flash-board dam footing. Wood slats could be placed spanning the channel to impound water for irrigation or municipal use. The structure has not been used in many years and is one structure with three steps. The flow over the structure is sheet in form and does not allow for a plunge or scour pool to form. The structure is 48' wide x 10' thick x 2.2' high with two tiers. The middle section is filled with gravel and this structure is a very important grade control structure now. Modification rather than removal might be the best option to aid in fish passage for both adults and juveniles.

8. ***Concrete Grade Control Weir*** Identified by CCSE staff, this structure is located at a water-monitoring site and is located at stream mile 13.29, the Rodriguez Road crossing. It may be a partial barrier to juvenile fish but there is good flow since it is in proximity to Lopez Dam. There is a deep plunge pool, so with good acceleration, passage could be achieved. There is some sheet flow across the structure but it is semi-concentrated over half the structure. The structure is 20' wide x 5' thick x 2' high. Removal for uninterrupted passage is not an option as it encases the primary water supply line from Lopez Dam.

VIII. Costs

Funding for new gage installation, stream monitoring, and data management and analysis will be provided by Zone 3. The capital costs of the modification of existing gages and installation of two new gages is projected to cost $19,361 in year 1, $11,695 in year two and $1,000 in year 3, as shown in Table 6. Operation of the dam (i.e., manipulating flows) is contained within existing operational costs. Monitoring costs, consisting of reading remotely transmitted data, visiting visual observation points, and recording data and observations is expected to range between $10,000 - $15,000 for the 90-day period between January 1 and April 1. Costs related to passage barrier removal projects are estimated at $25,000 annually, beginning in year 3. Assuming the IDRS increased storage by between 100 and 500 acre feet each year, long-term acre foot costs range from a high of $410 to a low of $72, as shown in Table 7 (Exhibit 4 provides additional cost calculations]. Note that without implementing passage

barrier removal projects annual long-term costs drop to between $22 and $160 per acre foot annually. These costs do not include staff costs related to developing the IDRS, reporting to Zone 3, or reporting the results of IDRS monitoring to resources agencies (if required). These additional costs are accounted for in the HCP budget.

TABLE 7

Per Acre Foot Cost Comparisons (With Ranges, 2006 Dollars))			
	Year 1	**Year 2**	**Year 3 - - -**
Passage Barrier Removal Cost			25,000
Monitoring Effort Capital Cost	19,361	11,695	1,000
Operational (Low)	10,000	10,000	10,000
Operational (High)	15,000	15,000	15,000
Additional Storage - Range	100 - 500 AFY	100 - 500 AFY	100 - 500 AFY
Cost/Acre Foot - Range	$59 - $344	$44 - $267	$72 - $410
Cost/Acre Foot – W/O Barrier Removal			$22 - $160

IX. Schedule

Table 8 identifies the key IDRS milestones. The overall goal is to have all actions necessary to implement the IDRS in time to take advantage of the 2007 wet season (January – March).

TABLE 8

IDRS KEY MILESTONES	
Milestone	**Date**
TAC Approves IDRS:	May 2006
Advisory Committee Approves IDRS:	May 2006
Zone 3 Agencies Approve Contract Amendments:	September 2006
Board of Supervisors Approves IDRS:	September 2006
Year 1 Gage Work Completed:	November 2006
Year 1 IDRS Implementation:	January 2007
Year 2 Gage Work Completed:	September 2007
Year 2 IDRS Implementation:	January 2008

X. Environmental Requirements

Actions and projects that have the potential to impact sensitive wildlife species or that effect waterways in California may require approvals from several different

regulatory agencies pursuant to several different State and Federal environmental statutes, as described below.

CEQA

In general, the California Environmental Quality Act (CEQA) applies to all discretionary actions taken by a public agency. However, the State CEQA Guidelines, section 15261 provides an exemption for ongoing projects as follows:

> (a) If a project being carried out by a public agency was approved prior to November 23, 1970, the project shall be exempt from CEQA unless either of the following conditions exists:
>
> > (1) A substantial portion of public funds allocated for the project have not been spent, and it is still feasible to modify the project to mitigate potentially adverse environmental effects, or to choose feasible alternatives to the project, including the alternative of 'no project' or halting the project ....
> >
> > (2) A public agency proposes to modify the project in such a way that the project might have a new significant effect on the environment.

Based on the California Appellate Court's decision regarding the operation of dams in similar situations, implementation of the IDRS qualifies as a "normal, intrinsic part of the ongoing operation of the reservoir project which does not constitute any modification thereof."[2] Consequently, it is exempt from environmental review under CEQA as described in section 15261.

Endangered Species Act

Although the Lopez Project has prepared an HCP and is currently working with the National Marine Fisheries Service and the US Fish and Wildlife Service to perfect that document, no permits to "take"[3], "harm"[4], or "harass"[5] any federally

---

[2] Nacimiento Regional Water Management Advisory Com. v. Monterey County Water Resources Agency (1993) 15 Cal.App.4th 200 , 19 Cal.Rptr.2d 1

[3] "Take", as defined in the Federal Endangered Species Act means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

[4] "Harm" is defined in Fish and Wildlife regulations as: "To perform an act that kills or injures wildlife; may include significant habitat modification or degradation when it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering."

[5] "Harass", as defined in the Federal Endangered Species Act, means ""To intentionally or negligently, through act or omission, create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, and sheltering."

listed species have been granted. Further, prior to approval of the HCP, no such authorization can be granted by either federal agency. Therefore, it is incumbent on Zone 3 to ensure that implementation of this IDRS does not result in "take" in any form.

California Fish and Game Code

Implementation of the IDRS does not constitute "substantial modification of a river, stream, or lake"; therefore, authorization from the California Department of Fish and game pursuant to section 1602 of the California Fish and Game Code is not required.

Fish Passage Improvement Projects

Depending on the details of a particular project, implementation of fish passage improvement projects may require authorization by several state and federal resource agencies, as indicated in Table 9 below:

TABLE 9

Passage Improvement Project Regulatory Requirements	
Regulatory Requirement	**Agency**
CA Environmental Quality Act (CEQA)	County of San Luis Obispo
National Environmental Policy Act (NEPA)	US Army Corps of Engineers
Section 404 Clean Water Act	US Army Corps of Engineers
Section 401 Clean Water Act	Regional Water Quality Control Board
Endangered Species Act (Steelhead)	National Marine Fisheries Service
Endangered Species Act (Other Species)	US Fish and Wildlife Service
Section 1600 CA Fish and Game Code	California Department of Fish and Game
California Coastal Act	County of San Luis Obispo
California Coastal Act (Original Jurisdiction)	California Coastal Commission

Exhibit 5 illustrates the typical regulatory permit process for passage improvement projects.

XI. Exhibits

1. Lopez Project: Comparative Release Rates
2. LRRP Flowchart
3. Historical Lopez Reservoir Storage
4. Per Acre Foot Cost Comparisons
5. Typical Regulatory Permit Process for Passage Improvement Projects

Exhibit 1

Lopez Project: Comparative Release Rates

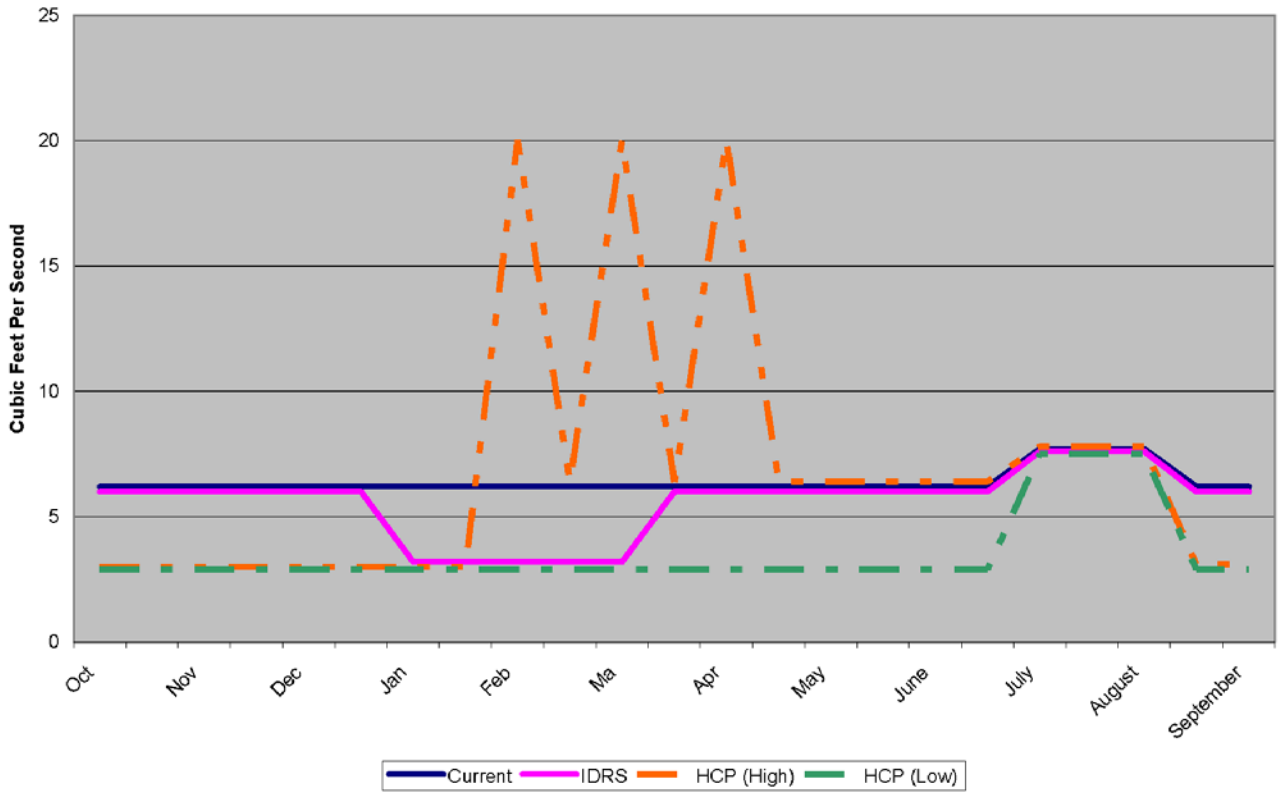


Exhibit 2
Low Reservoir Response Plan (LRRP)
Key Decision Flowchart

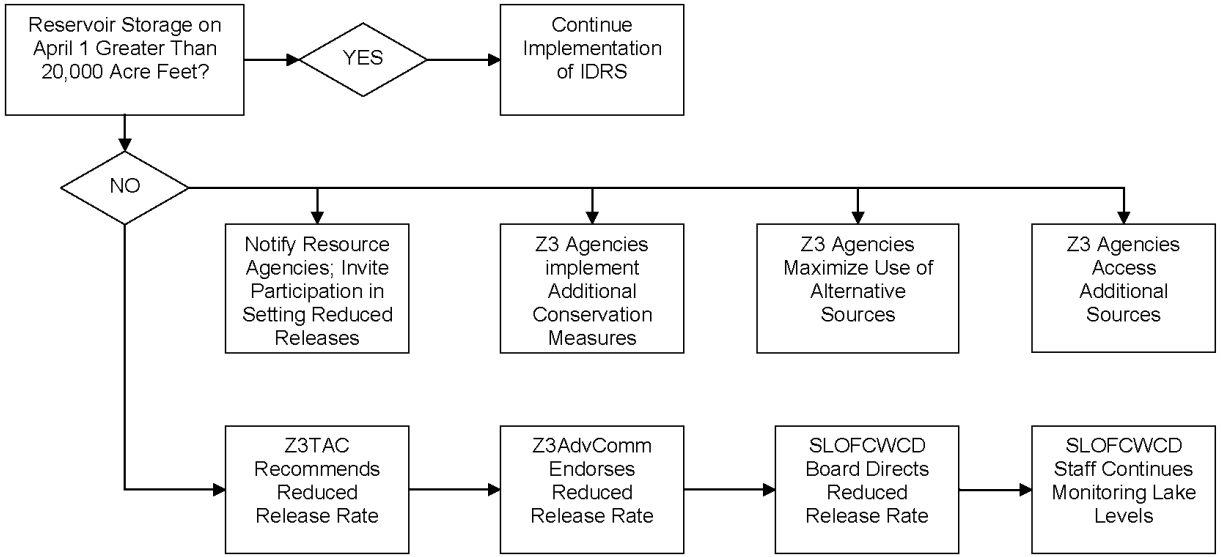


Exhibit 3
Historical Lopez Reservoir Storage

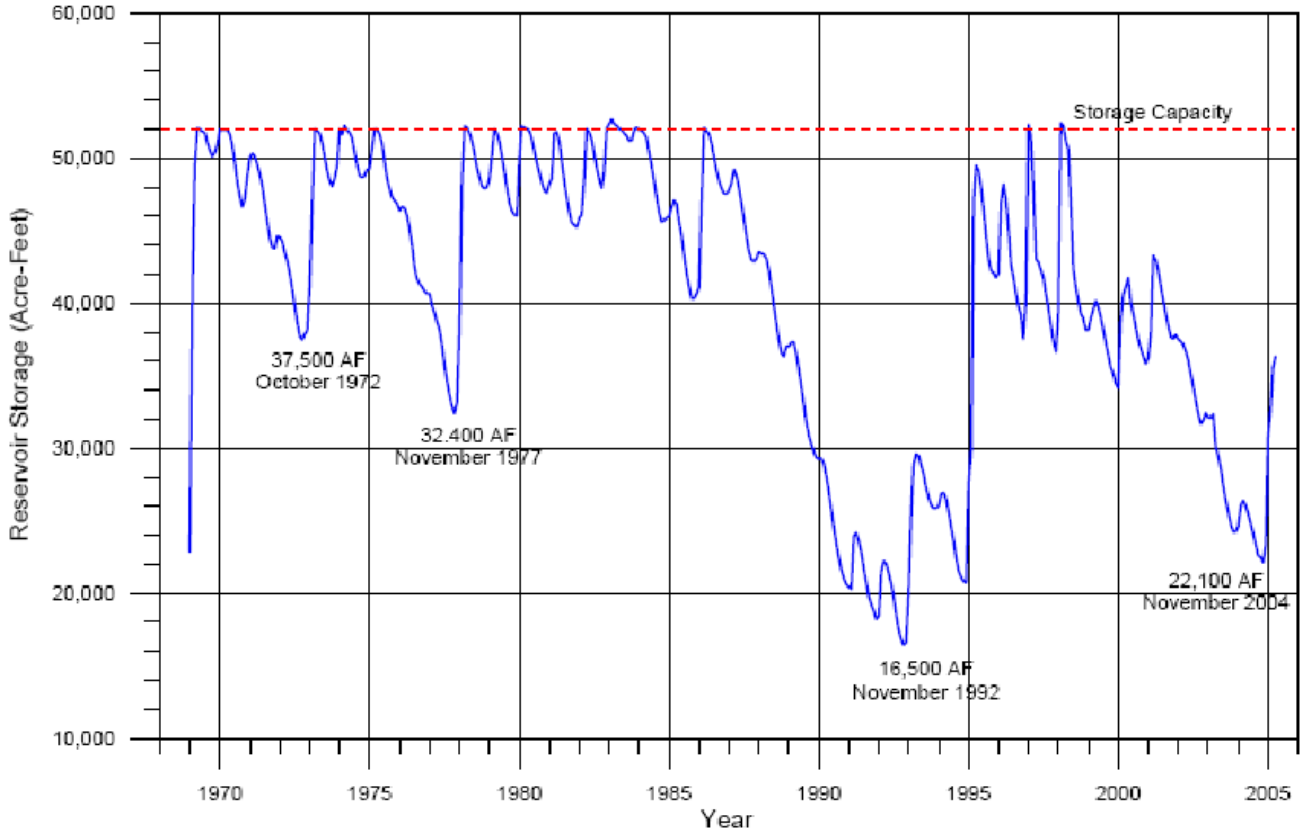
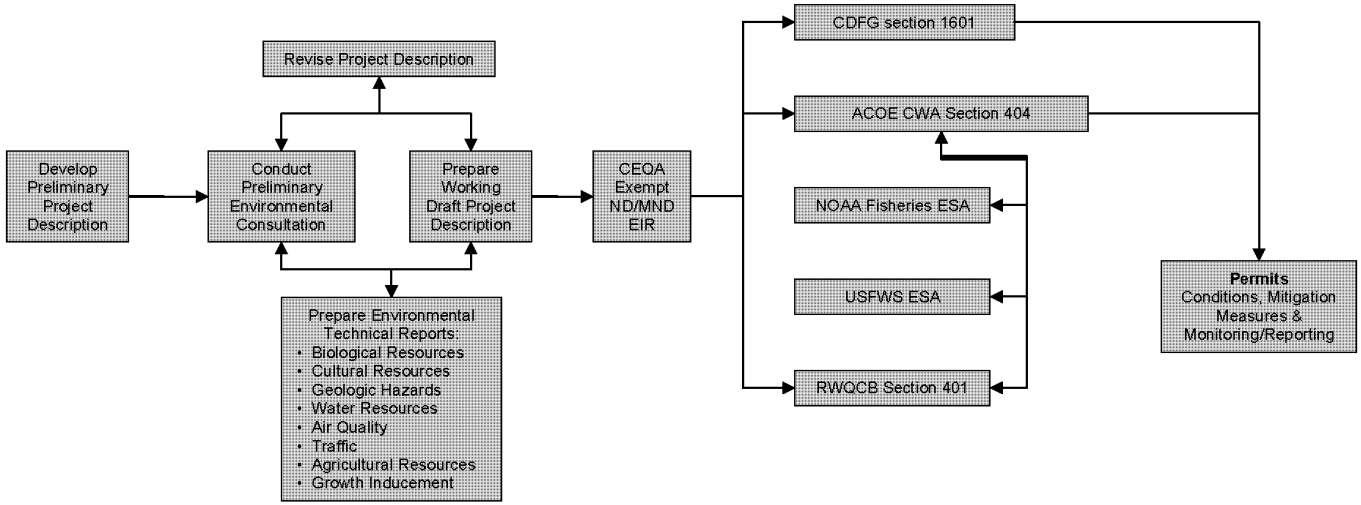


Exhibit 4 Per Acre Foot Cost Comparisons (With Ranges, 2006 Dollars))				
	Year 1	**Year 2**	**Year 3 ►►►**	
Passage Barrier Removal Cost	0	0	25,000	
Monitoring Effort Capital Cost	19,361	11,695	1,000	
Operational (Low)	10,000	10,000	10,000	
Operational (High)	15,000	15,000	15,000	
Example Storage Volumes:				
Additional Storage (Low)	100	100	100	
Additional Storage (Mod)	204	204	204	
Additional Storage (High)	500	500	500	
Annual Costs Per Acre Foot:			With Barrier Removal	W/O Barrier Removal
Low Ops/Low Storage	$293.61	$216.95	$360.00	$110.00
Low Ops/Moderate Storage	$143.93	$106.35	$176.47	$53.92
Low Ops/High Storage	$58.72	$43.39	$72.00	$22.00
High Ops/Low Storage	$343.61	$266.95	$410.00	$160.00
High Ops/Moderate Storage	$168.44	$130.86	$200.98	$78.43
High Ops/High Storage	$68.72	$53.39	$82.00	$32.00

Exhibit 5
Typical Stream Passage Improvement Project Permit Flowchart



Appendix C

California Urban Water Conservation Council Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING

REGARDING

URBAN WATER CONSERVATION

IN CALIFORNIA

As Amended June 9, 2010

MEMORANDUM OF UNDERSTANDING REGARDING URBAN WATER CONSERVATION IN CALIFORNIA

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MEMORANDUM OF UNDERSTANDING
REGARDING
URBAN WATER CONSERVATION
IN CALIFORNIA

The **Memorandum of Understanding Regarding Urban Water Conservation in California** (MOU) is made and entered into on the dates set forth below among the undersigned parties (signatories). The signatories represent urban water suppliers, public advocacy organizations and other interested groups as defined in Section 1.3 of this MOU.

ADOPTED
September 1991

AMENDED
February 10, 1993
March 9, 1994
September 30, 1997
April 8, 1998
December 9, 1998
September 16, 1999
September 21, 2000
March 14, 2001
December 11, 2002
March 10, 2004
March 9, 2005
March 14, 2007
June 13, 2007
December 10, 2008
June 11, 2009
September 16, 2009
June 9, 2010

Note: *The MOU was substantially revised on September 30, 1997 and again on December 10, 2008. Subsequent revisions are indicated accordingly throughout the MOU.*

RECITALS

A. The signatories to this MOU recognize that California's economy, quality of life and environment depend in large part upon the water resources of the State. The signatories also recognize the need to provide reliable urban water supplies and to protect the environment. Increasing demands for urban, agricultural and environmental water uses call for conservation and the elimination of waste as important elements in the overall management of water resources. Many organizations and groups in California have an interest in urban water conservation, and this MOU is intended to gain much needed consensus on a complex issue.

B. The urban water conservation practices included in this MOU (referred to as "Best Management Practices" or "BMPs") are intended to reduce long-term urban demands from what they would have been without implementation of these practices and are in addition to programs which may be instituted during occasional water supply shortages.

C. The combination of BMPs and urban growth, unless properly accounted for in water management planning, could make reductions in urban demands during short-term emergencies such as droughts or earthquakes more difficult to achieve. However, notwithstanding such difficulties, the signatory water suppliers will carry out the urban water conservation BMP process as described in this MOU.

D. The signatories recognize that means other than urban water conservation may be needed to provide long-term reliability for urban water suppliers and long-term protection of the environment. However, the signatories may have differing views on what additional measures might be appropriate to provide for these needs. Accordingly, this MOU is not intended to address these issues.

E. A major benefit of this MOU is to conserve water which could be used for the protection of streams, wetlands and estuaries and/or urban water supply reliability. This MOU leaves to other forums the issue of how conserved water will be used.

F. It is the intent of this MOU that individual signatory water suppliers (1) develop comprehensive conservation BMP programs using sound economic criteria and (2) consider water conservation on an equal basis with other water management options.

G. It is recognized that present urban water use throughout the State varies according to many factors including, but not limited to, climate, types of housing and landscaping, amounts and kinds of commercial, industrial and recreational development, and the extent to which conservation measures have already been implemented. It is further recognized that many of the BMPs identified in Exhibit 1 to this MOU have already been implemented in some areas and that even with broader employment of BMPs, future urban water use will continue to vary from area to area. Therefore, this MOU is not intended to establish uniform per capita water use allotments throughout the urban areas of the State. This MOU is also not intended to limit the amount or types of conservation a water supplier can pursue or to limit a water supplier's more rapid implementation of BMPs.

H. It is recognized that projections of future water demand should include estimates of anticipated demand reductions due to changes in the real price of water.

TERMS

Amended December 10, 2008; Amended March 9, 2005; Amended April 8, 1998

SECTION 1. DEFINITIONS

For purposes of this MOU, the following definitions apply:

1.1 **Best Management Practices.** A Best Management Practice ("BMP") means a policy, program, practice, rule, regulation or ordinance or the use of devices, equipment or facilities which meets either of the following criteria:

(a) An established and generally accepted practice among water suppliers that results in more efficient use or conservation of water;

(b) A practice for which sufficient data are available from existing water conservation projects to indicate that significant conservation or conservation related benefits can be achieved; that the practice is technically and economically reasonable and not environmentally or socially unacceptable; and that the practice is not otherwise unreasonable for most water suppliers to carry out.

Although the term "Best Management Practices" has been used in various statutes and regulations, the definitions and interpretations of that term in those statutes and regulations do not apply to this MOU. The term "Best Management Practices" or "BMPs" has an independent and special meaning in this MOU and is to be applied for purposes of this MOU only as defined above.

1.2 **Implementation.** "Implementation" means achieving and maintaining the staffing, funding, and in general, the priority levels necessary to achieve the level of activity called for in the descriptions of the various BMPs and to satisfy the commitment by the signatories to use good faith efforts to optimize savings from implementing BMPs as described in Section 4.4 of this MOU. Section B of Exhibit 1 to this MOU establishes the schedule for initial implementation of BMPs.

1.3 **Signatory Groups.** For purposes of this MOU, signatories will be divided into three groups as follows:

(a) Group 1 will consist of water suppliers. A "water supplier" is defined as any entity, including a city, which delivers or supplies water for urban use at the wholesale or retail level.

(b) Group 2 will consist of public advocacy organizations. A "public advocacy organization" is defined as a non profit organization:

(i) whose primary function is not the representation of trade, industrial, or utility entities, and

(ii) whose prime mission is the protection of the environment or who has a clear interest in advancing the BMP process.

(c) Group 3 will consist of other interested groups. "Other interested groups" is defined as any other group which does not fall into one of the two groups above.

1.4 **California Urban Water Conservation Council.** The California Urban Water Conservation Council or "Council" will have responsibility for monitoring the implementation of this MOU and will be comprised of signatories to this MOU grouped according to the definitions in Section 1.3 above. The duties of the Council are set forth in Section 6 and in Exhibit 2 to this MOU.

SECTION 2. PURPOSES

2.1 **This MOU has Two Primary Purposes:**

(1) to expedite implementation of reasonable water conservation measures in urban areas; and

(2) pursuant to Section 5 of this MOU, to establish assumptions for use in calculating estimates of reliable future water conservation savings resulting from proven and reasonable conservation measures. Estimates of reliable savings are the water conservation savings which can be achieved with a high degree of confidence in a given service area. The signatories have agreed upon the initial assumptions to be used in calculating estimates of reliable savings. These assumptions are included in Exhibit 1 to this MOU. It is probable that average savings achieved by water suppliers will exceed the estimates of reliable savings.

SECTION 3. LIMITS TO APPLICABILITY OF MOU

3.1 **Relationship Between Water Suppliers.** No rights, obligations or authorities between wholesale suppliers, retail agencies, cities or other water suppliers are created or expanded by this MOU. Moreover, wholesale water suppliers are not obligated to implement BMPs at the retail customer level except within their own retail service area, if any.

3.2 **Agriculture.** This MOU is intended to apply only to the delivery of water for domestic, municipal and industrial uses. This MOU is not intended to apply directly or indirectly to the use of water for irrigated agriculture with one exception. A signatory water supplier that serves agricultural customers may decide to include agricultural water deliveries in its calculation of water demand and compliance using the GPCD metric. If such agricultural deliveries are included, the supplier shall include relevant agricultural water demand in its Water Supply & Reuse and Accounts & Water Use standard reports.

3.3 **Reclamation.** The signatory water suppliers support the reclamation and reuse of wastewater wherever technically and economically reasonable and not environmentally or socially unacceptable, and agree to prepare feasibility studies on water reclamation for their respective service areas. However, this MOU does not apply to that aspect of water management, except where the use of reclaimed water may otherwise qualify as a BMP as defined above.

3.4 **Land Use Planning.** This MOU does not deal with the question of growth management. However, each signatory water supplier will inform all relevant land planning agencies at least annually of the impacts that planning decisions involving projected growth would have

upon the reliability of its water supplies for the water supplier's service area and other areas being considered for annexation.

3.5 **Use of Conserved Water.** A major benefit of this MOU is to conserve water which could be used for the protection of streams, wetlands and estuaries and/or urban water supply reliability. This MOU leaves to other forums the issue of how conserved water will be used.

SECTION 4. IMPLEMENTATION OF BEST MANAGEMENT PRACTICES

4.1 **The Best Management Practices List, Schedule of Implementation and Assumptions.** Exhibit 1 to this MOU contains:

(a) In Section A: A list identifying those practices which the signatories believe presently meet the definition of a BMP as set forth in Section 1.1 of this MOU.

(b) In Section B: A schedule for implementing the BMPs to be followed by signatory water suppliers unless exempted under Section 4.5 of this MOU or an alternative schedule is prepared pursuant to Section 4.6 of this MOU.

(c) In Section C: Coverage requirements for implementing BMPs. Coverage requirements are the expected level of implementation necessary to achieve full implementation of BMPs. Coverage requirements may be expressed either in terms of activity levels by water suppliers or as water savings achieved.

(d) In Section D: Reporting Requirements for Documenting BMP Implementation. These requirements vary by BMP, are considered the minimum record keeping and reporting requirements for water suppliers to document BMP implementation levels, and will provide the basic data used evaluate BMP implementation progress by water suppliers.

(e) In Section E: Criteria to determine BMP implementation status of water suppliers. These criteria will be used to evaluate BMP implementation progress. Evaluation criteria vary by BMP, and are derived from the implementation guidelines and schedules presented in Sections A, B, and C.

(f) In Section F: Assumptions for use in developing estimates of reliable savings from the implementation of BMPs. Estimates of reliable savings are the water conservation savings which can be achieved with a high degree of confidence in a given service area. The estimate of reliable savings for each BMP depends upon the nature of the BMP and upon the amount of data available to evaluate potential savings. For some BMPs (e.g., public information) estimates of reliable savings may never be generated. For others, additional data may lead to significant changes in the estimate of reliable savings. It is probable that average savings achieved by water suppliers will exceed the estimates of reliable savings.

(g) In Section G: In the programmatic BMPs, the Flex Tack Menu, a list of potential alternative water savings measures is available for agencies which wish to promote new initiatives in water conservation. In order to qualify as in compliance with the BMP requirements, a utility using this menu, or a part of it, shall show water savings equal to or greater than of those which would have been achieved by following the BMP list.

There is no section G in the Foundational BMPs.

4.2 **Initial BMPs, PBMPs, Schedules, and Estimates of Reliable Savings.** The initial position of conservation practices on the BMP and PBMP lists, the initial schedule of implementation and study for the BMP list, the initial schedule of study for the PBMP list, and the initial estimates of reliable savings represent compromises by the signatories to move the process

forward both for purposes of the present Bay/Delta proceedings as defined in Section 5 and to promote water conservation generally. The signatories agree that as more and better data are collected in the future, the lists, the schedules, and the estimates of reliable savings will be refined and revised based upon the most objective criteria available. However, the signatories agree that the measures included as initial BMPs in Section A of Exhibit 1 are economically justified on a statewide basis.

4.3 **Future Revision of BMPs, PBMPs, Schedules, and Estimates of Reliable Savings.** After the beginning of the initial term of the MOU as provided in Section 7.1, the California Urban Water Conservation Council ("Council") will, pursuant to Section 6 of this MOU and Exhibit 2, alter the composition of the BMP and PBMP lists, redefine individual BMPs, alter the schedules of implementation, and update the assumptions of reliable savings as more data becomes available. This dynamic BMP assessment process includes the following specific commitments:

(a) The assumptions of reliable savings will be updated at least every 3 years.

(b) The economic reasonableness of a BMP or PBMP will be assessed by the Council using the economic principles in Sections 3 and 4 of Exhibit 3.

(c) A BMP will be removed from the BMP list if, after review of data developed during implementation, the Council determines that the BMP cannot be made economically reasonable or determines that the BMP otherwise fails to conform to the definition of BMPs in Section 1.1.

(d) A PBMP will be moved to the BMP list and assigned a schedule of implementation if, after review of data developed during research, and/or demonstration projects, the Council determines that the PBMP is economically reasonable and otherwise conforms to the definition of BMPs in Section 1.1.

[Note: In 1997, the Council substantially revised the BMP list, definitions, and schedules contained in Exhibit 1. These revisions were adopted by the Council September 30, 1997.]

4.4 **Good Faith Effort.** While specific BMPs and results may differ because of varying local conditions among the areas served by the signatory water suppliers, a good faith effort to implement BMPs will be required of all signatory water suppliers. The following are included within the meaning of "good faith effort to implement BMPs":

(a) The proactive use by a signatory water supplier of legal authorities and administrative prerogatives available to the water supplier as necessary and reasonable for the implementation of BMPs.

(b) Where implementation of a particular BMP is not within the legal authority of a signatory water supplier, encouraging timely implementation of the BMP by other entities that have the legal authority to carry out the BMP within that water supplier's service area pursuant to existing legal authority. This encouragement may include, but is not limited to, financial incentives as appropriate.

(c) Cooperating with and encouraging cooperation between other water suppliers and other relevant entities whenever possible and within existing legal authority to promote the implementation of BMPS.

(d) Optimizing savings from implementing BMPs.

(e) For each signatory water supplier and all signatory public advocacy organizations, encouraging the removal of institutional barriers to the implementation of BMPs within that water supplier's service area. Examples of good faith efforts to remove institutional barriers include formal presentations and/or written requests to entities requesting approval of, or amendment to, local ordinances, administrative policies or legislation which will promote BMP implementation.

4.5 **Exemptions.** *As Amended on March 9, 2005.* A signatory water supplier will be exempt from the implementation of specific BMPs for as long as the supplier substantiates each reporting period that based upon then prevailing local conditions, one or more of the following findings applies:

(a) A full cost-benefit analysis, performed in accordance with the principles set forth in Exhibit 3, demonstrates that either the program (i) would not be cost-effective overall when total program benefits and costs are considered; OR (ii) would not be cost-effective to the individual water supplier even after the water supplier has made a good faith effort to share costs with other program beneficiaries.

(b) Adequate funds are not and cannot reasonably be made available from sources accessible to the water supplier including funds from other entities. However, this exemption cannot be used if a new, less cost-effective water management option would be implemented instead of the BMP for which the water supplier is seeking this exemption.

(c) Implementation of the BMP is (i) not within the legal authority of the water supplier; and (ii) the water supplier has made a good faith effort to work with other entities that have the legal authority to carry out the BMP; and (iii) the water supplier has made a good faith effort to work with other relevant entities to encourage the removal of institutional barriers to the implementation of BMPs within its service area.

4.6 **Schedule of Implementation.** *As Amended on March 9, 2005.* The schedule of implementation for BMPs is set forth in Section B of Exhibit 1 to this MOU. However, it is recognized by the signatories that deviations from this schedule by water suppliers may be necessary. Therefore, a water supplier may modify, to the minimum extent necessary, the schedule for implementation of BMPs if the water supplier substantiates one or more of the following findings:

(a) That after a good faith effort to implement the BMP within the time prescribed, implementation is not feasible pursuant to the schedule. However, implementation of this BMP is still required as soon as feasible within the initial term of this MOU as defined in Section 7.1.

(b) That implementation of one or more BMPs prior to other BMPs will have a more positive effect on conservation or water supplies than will adherence to the schedule.

(c) That implementation of one or more Potential BMPs or other conservation measures prior to one or more BMPs will have a more positive effect on conservation or water supplies than will adherence to the schedule.

(d) That the BMP was not implemented previously because the water supplier was exempt from its implementation as provided for in Section 4.5 above during prior years of required activity. When a water supplier has been exempt from implementing a BMP in the past, but is subsequently no longer exempt, the water supplier shall receive an extension of time to implement the BMP. The extension of time shall be equal to 100% of the time period for which fully documented exemptions were submitted to the Council, not to exceed the time allotted for completing the activities set forth within the BMP itself.

SECTION 5. CONSERVATION GOALS

[Note: The original section 5. BAY/DELTA PROCEEDINGS was adopted with the initial MOU and referred to the State Water Resources Control Board water rights process underway in late 1980s and early 1990s to implement new Bay-Delta flow and export standards. Subsequent to those proceedings, further work under different auspices has proceeded with the same goals, in addition, Council membership has expanded to include agencies whose focus is on other watersheds and broader support for water use efficiency and conservation. Therefore, while including the original intent of this section, in December 2008 it has been amended to reflect these new circumstances.]

5.1 **Use of MOU to address Bay/Delta protection and water use efficiency**. The BMPs, the estimates of reliable savings and the processes established by this MOU are agreed to by the signatories for purposes of protection of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary ("Bay/Delta"); in order to move the water conservation process forward; and/or to develop a cost effective alternative to new water supplies. The willingness of the signatories to enter into this MOU for purposes of the protection of the Bay/Delta in no way limits the signatories' ability to propose different conservation practices, different estimates of savings, or different processes, or for non-urban water suppliers or for other water management issues. The signatories may present other assumptions of reliable conservation savings, provided that such assumptions could not have adverse impacts upon the water supplies of any signatory water supplier. Furthermore, the signatories retain the right to advocate any particular level of protection for the Bay/Delta Estuary, including levels of freshwater flows, and do not necessarily agree on population projections for California. This MOU is not intended to address any authority or obligation of the State Board to establish freshwater flow protections or set water quality objectives for the Estuary, or to address any authority of the Department of Water Resources or United States Bureau of Reclamation.

5.2 **Recommendations for Water Conservation.** The signatories will make the following recommendations to the State Board, Department of Water Resources or US Bureau of Reclamation to support BMPs and the advancement of water conservation practices:

(a) That implementation of the BMP process set forth in this MOU represents a sufficient long-term water conservation program by the signatory water suppliers, recognizing that additional programs may be required during occasional water supply shortages;

(b) That the State Board should include a policy statement in the water rights considerations of the Bay/Delta protection supporting the BMP process described in this MOU and that the BMP process should be considered in any documents prepared by the State Board pursuant to the California Environmental Quality Act as part of the Bay/Delta proceedings.

(c) That the Department of Water Resources and Bureau of Reclamation consider an agency's implementation of the BMPs set for the in the MOU as evidence of good faith efforts by the signatory agency to achieve water use efficiency and conservation.

5.3 **Letter to State or Federal Water Agencies.** Within 30 days of signing this MOU, each signatory will jointly or individually convey the principles set forth in Sections 5.1 and 5.2 above by sending a letter to the State Board, Department of Water Resources and/or Bureau of Reclamation copied to the California Urban Water Conservation Council.

5.4 **Withdrawal from MOU.** If the State Board or EPA uses future urban water conservation savings that are inconsistent with the use of BMPs as provided in this MOU, any signatory shall have the right to withdraw from the MOU by providing written notice to the Council as described in Section 7.4(a)(I) below.

SECTION 6. CALIFORNIA URBAN WATER CONSERVATION COUNCIL

6.1 **Organization.** The California Urban Water Conservation Council ("Council") will be comprised of all signatories to this MOU grouped according to the definition in Section 1. The signatories agree to the necessary organization and duties of the Council as specified in Exhibit 2 to this MOU. Within 30 days of the effective date of this MOU, the Council will hold its first meeting.

6.2 **BMP Implementation Reports.** The signatory water suppliers will submit standardized reports every other year to the Council providing sufficient information to inform the Council on the progress being made towards implementing the BMP process. The Council will make annual reports to the State Board. An outline for the Council's annual report to the State Board is attached as Exhibit 5 to this MOU.

SECTION 7. GENERAL PROVISIONS

7.1 **Initial Term of MOU.** The initial term of this MOU shall be for a period of 10 years. This initial term shall commence on September 1, 1991.

7.2 **Signatories.** Signatories shall consist of three groups: water suppliers, public advocacy organizations and other interested groups, arranged according to the definition in Section 1.3. Such arrangement will be made by a Council membership committee comprised of three representatives from the water suppliers' group and three representatives from the public advocacy organizations' group.

7.3 **Renewal of MOU.** The MOU shall be automatically renewed after the initial term of 10 years on an annual basis as to all signatories unless a signatory withdraws as described below in Section 7.4.

7.4 **Withdrawal from MOU.** Signatories to the MOU may withdraw from the MOU in three separate ways as described in sections (a), (b) and 8 below.

(a) **Withdrawal prior to expiration of initial term.** Before the expiration of the initial term of 10 years, a signatory may withdraw by providing written notice to the Council declaring its intent to withdraw. This written notice must include a substantiated finding that one of the two provisions (i) or (ii) below applies:

(i) During the present Bay/Delta proceedings, the State Board or EPA used future urban water conservation savings that are inconsistent with the use of BMPs as provided in this MOU; OR

(ii) After a period of 5 years from the commencement of the initial term of the MOU:

(1) Specific signatory water suppliers representing more than 10 percent of the population included within the combined service areas of the signatory water suppliers have failed to act in good faith pursuant to Section 4.4 of the MOU; and

(2) The signatory wishing to withdraw has attached findings to its past two annual reports to the Council beginning no earlier than the fourth annual report identifying these same signatory water suppliers and giving evidence based upon the information required to be submitted in the annual reports to the Council to support the allegations of failure to act in good faith; and

(3) The State Board has failed to require conservation efforts by the specific water suppliers adequate to satisfy the requirements of this MOU; and

(4) Discussions between the signatory wishing to withdraw and the specific signatories named have failed to satisfy the objections of the signatory wishing to withdraw.

After a signatory declares intent to withdraw under Section 7.4(a), the MOU shall remain in effect as to that signatory for 180 days.

(b) **Withdrawal after expiration of initial term.** After the initial term of 10 years, any signatory may declare its intent to withdraw from the MOU unconditionally by providing written notice to the Council. After a signatory has declared its intent to

withdraw as provided in this section, the MOU will remain in effect as to that signatory for 180 days.

(c) **Immediate withdrawal.** Any signatory who does not sign a modification to the MOU requiring a 2/3 vote as described in Exhibit 2 of this MOU may withdraw from the MOU by providing written notice to the Council. The withdrawing signatory's duties under this MOU will be terminated effective immediately upon providing such written notice.

If a signatory withdraws from the MOU under any of the above methods, the MOU shall remain in effect as to all other signatories.

7.5 **Additional Parties.** Additional parties may sign the MOU after September 1, 1991 by providing written notice to and upon approval by the Council. Additional parties will be assigned by the Council to one of the three signatory groups defined in Section 1.3 before entry into the Council. All additional signatory water suppliers shall be subject to the schedule of implementation provided in Exhibit 1.

7.6 **Legal Authority.** Nothing in this MOU is intended to give any signatory, agency, entity or organization expansion of any existing authority. No organization formed pursuant to this MOU has authority beyond that specified in this MOU.

7.7 **Non-Contractual Agreement.** This MOU is intended to embody general principles agreed upon between and among the signatories and is not intended to create contractual relationships, rights, obligations, duties or remedies in a court of law between or among the signatories.

7.8 **Modifications.** The signatories agree that this writing constitutes the entire understanding between and among the signatories. The general manager, chief executive officer or executive director of each signatory or their designee shall have the authority to vote on any modifications to this MOU and its exhibits. Any modifications to the MOU itself and to its exhibits shall be made by the Council as described in Exhibit 2.

EXHIBIT 1. BMP DEFINITIONS, SCHEDULES AND REQUIREMENTS

As Amended December 10, 2008; As Formatted March 9, 2005; As Amended re: Base Year on September 21, 2000

This Exhibit contains Best Management Practices (BMPs) that signatory water suppliers commit to implementing. Suppliers' water needs estimates will be adjusted to reflect estimates of reliable savings from these BMPs. For some BMPs, no estimate of savings is made.

It is recognized by all parties that a single implementation method for a BMP would not be appropriate for all water suppliers. In fact, it is likely that in the future, water suppliers will find new implementation methods even more effective than those described. Any implementation method used should be at least as effective as the methods described below.

The Council's 14 BMPs are now organized into five categories. Two categories, Utility Operations and Education, are "Foundational BMPs", because they are considered to be essential water conservation activities by any utility and are adopted for implementation by all signatories to the MOU as ongoing practices with no time limits. The remaining BMPs are "Programmatic BMPs" and are organized into Residential, Commercial, Industrial, and Institutional (CII), and Landscape categories. The minimal activities required of each signatory are encompassed within each list, except for activities from which a utility is exempt from completing under section 4.5 of the MOU and for which the utility has filed an exemption with the Council.

BMP Naming Changes

Old BMP Number & Name	New BMP category
1. Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers	Programmatic: Residential
2. Residential Plumbing Retrofit	Programmatic: Residential
3. System Water Audits, Leak Detection and Repair	Foundational: Utility Operations – Water Loss Control
4. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	Foundational: Utility Operations – Metering
5. Large Landscape Conservation Programs and Incentives	Programmatic: Landscape
6. High-Efficiency Clothes Washing Machine Financial Incentive Programs	Programmatic: Residential

7. Public Information Programs	Foundational: Education – Public Information Programs
8. School Education Programs	Foundational: Education – School Education Programs
9. Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts	Programmatic: Commercial, Industrial, and Institutional
10. Wholesale Agency Assistance Programs	Foundational: Utility Operations – Operations
11. Retail Conservation Pricing	Foundational: Utility Operations – Pricing
12. Conservation Coordinator	Foundational: Utility Operations – Operations
13. Water Waste Prohibition	Foundational: Utility Operations – Operations
14. Residential ULFT Replacement Programs	Programmatic: Residential

Compliance with the BMP water savings goals can be accomplished in one of three ways including: accomplishing the specific measures as listed in Section A of each BMP; accomplishing a set of measures which achieves equal or greater water savings, referred to in this document as the Flex Track Menu; and accomplishing set water savings goals as measured in gallons per capita per day consumption.

A signatory may elect to adopt additional or alternative measures, in part or in any combination, as described in the Flex Track Menus, provided that the demonstrated water savings in the Flex Track Menu activities are equal to or greater than the water savings that would be achieved by the BMP measures.

“Demonstrated water savings” represent unit water savings for individual BMP or Flex Track Menu conservation technologies and activities as established by either: (a) a water utility; (b) independent research studies; or (c) CUWCC- adopted savings as reviewed by the Research and Evaluation Committee and approved by the Board of Directors.

Another alternative method to satisfying the BMP requirements is “GPCD (gallons per capita per day) Compliance”. Agencies which choose a GPCD Compliance approach will be counting overall water savings of the quantifiable measures from the BMP list or Flex Track Menu plus additional savings achieved through implementation of the Foundational BMPs. [The actual targets and methodology associated with the GPCD Compliance approach will be adopted by the Council Plenary in accord with the MOU; and is intended for adoption by the spring Plenary of 2009 but will be no later than the summer 2009

Plenary.] Savings goals and methodology will be updated in the MOU Compliance Policies from time to time based upon data and studies.

The BMP definitions below are divided into the following sections:

Section A: Implementation
"Implementation" means achieving and maintaining the staffing, funding and, in general, the priority levels necessary to achieve the level of water savings or activity called for in the implementation section of each definition, and to satisfy the commitment by the signatories to use good faith efforts to optimize savings from implementing BMPs as described in Section 4.4 of the MOU.

Section B: Implementation Schedule
Signatory water suppliers will implement the Best Management Practices according to the schedules in each definition. These schedules state the latest dates by which implementation of BMPs must be underway. It is recognized that some signatories are already implementing some BMPs and that these schedules do not prohibit signatories from implementing BMPs sooner than required.

Section C: Coverage Requirements
This section specifies the minimum level of coverage required by the BMPs.

Section D: Requirements for Documenting BMP Implementation
Section D of each definition contains the minimum record keeping and reporting requirements for agencies to document BMP and Flex Track Menu implementation levels and efforts, and will be used to guide Council development of the BMP implementation report forms and database.

Section E: Water Savings Assumptions
Section E of each definition contains the assumptions of reliable water savings to be used in accordance with Sections 5.1 and 5.2 of the MOU. These will be updated from time by the Research and Evaluation Committee and published in the MOU Compliance Policy and BMP Guidebook.

Section F: Flex Track Option
This section is included in the Programmatic BMP definitions. The approach is defined in this Exhibit, and the Menu is contained in the MOU Compliance Policy and BMP Guidebook, where it can be updated from time to time with approval of the Research and Evaluation Committee.

In this Exhibit, a measure is intended to be an individual activity and a practice is a set of measures.

FOUNDATIONAL BMPs

1. UTILITY OPERATIONS PROGRAMS

Water utilities throughout California are implementing water conservation programs and providing services to the customers they serve. There are four subcategories that comprise signatory utility operation program responsibilities.

1.1 OPERATIONS PRACTICES

This practice will outline several key actions that utilities shall take to better enable conservation program implementation, to supplement conservation incentives with regulations where appropriate, and to assist one another through the wholesaler-retailer relationship.

A. Implementation

Implementation shall consist of at least the following actions:

1) Conservation Coordinator *(formerly BMP 12)*
Designate a person as the agency's responsible conservation coordinator for program management, tracking, planning, and reporting on BMP implementation.

2) Water waste prevention *(formerly BMP 13)*

a) New development
Enact, enforce, or support legislation, regulations, ordinances, or terms of service that (1) prohibit water waste such as, but not limited to: single-pass cooling systems; conveyer and in-bay vehicle wash and commercial laundry systems which do not reuse water; non-recirculating decorative water fountains and (2) address irrigation, landscape, and industrial, commercial, and other design inefficiencies.

b) Existing users
Enact, enforce, or support legislation, regulations, ordinances, or terms of service that prohibit water waste such as, but not limited to: landscape and irrigation inefficiencies, commercial or industrial inefficiencies, and other misuses of water.

c) Water shortage measures
Enact, enforce, or support legislation, regulations, ordinances, or terms of service that facilitate implementation of water shortage response measures.

3) Wholesale agency assistance programs *(formerly BMP 10)*
This section addresses assistance relationships between regional wholesale agencies and intermediate wholesale agencies as well as between wholesale agencies and retail agencies.

a) Financial investments and building partnerships

When mutually agreeable and beneficial to a wholesaler and its retail agencies, a wholesaler will provide financial assistance and help build partnerships to accomplish conservation. Wholesale water suppliers will consider avoided capital costs when making financial investments and build regional partnerships to advance water conservation efforts and effectiveness. Where applicable, intermediate wholesale water suppliers that receive conservation-related financial incentives from regional wholesalers will pass through eligible financial incentives to retail agencies operating programs at the retail level.

b) Technical support
When requested, wholesale water agencies will provide conservation-related technical support and information to retail agencies they serve. Support and information will include, but will not be limited to: workshops and support advice addressing conservation program planning, design, implementation, and evaluation.

c) Program management
When mutually advantageous, wholesale and retail water agencies will join together to plan, design, implement, manage, and evaluate regional conservation programs.

When mutually agreeable and beneficial, the wholesale agency or another lead regional agency will operate all or part of the conservation program; if the wholesale agency or other lead regional agency operates all or part of a program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting for funded BMPs; under this arrangement, a wholesale agency or other lead regional agency may aggregate all or portions of the reporting and coverage requirements of all retail agencies joining into the mutual consent.

d) Water shortage allocations
Wholesale agencies shall pursue water shortage allocation policies or plans which minimize disincentives to long-term water conservation, and encourage and reward investments in long-term conservation shown to advance regional water supply reliability and sufficiency.

e) Non-signatory reporting
To the extent possible, wholesale water agencies will provide reports on BMP implementation within their service area by retail water agencies that are not signatories to the MOU.

f) Encourage CUWCC membership
Wholesale agencies will encourage all of their retail agencies to become MOU signatories, provide information to assist the CUWCC in recruitment targeting, and may assist in paying CUWCC dues for their retail agencies.

B. Implementation Schedule

Implementation shall commence no later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

C. Coverage Requirements

Coverage shall consist of:

1) Conservation Coordinator
Staff and maintain the position of trained conservation coordinator, or equivalent consulting support, and provide that function with the necessary resources to implement BMPs.

2) Water waste prevention
Water Agency shall do one or more of the following:

a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
c. Support legislation or regulations that prohibit water waste
d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
e. Support local ordinances that prohibit water waste
f. Support local ordinances that establish permits requirements for water efficient design in new development.

3) Wholesale agency programs

a) Financial investments and building partnerships
When mutually agreeable and beneficial to a wholesaler and its retail agencies cost-effectiveness assessments, including avoided cost per acre-foot, will be completed for each BMP the wholesale agency is potentially obligated to support. The methodology used will conform to the Council standards and procedures, and the information reported will be sufficient to permit independent verification of the calculations and of any exemptions claimed on the cost-effectiveness grounds.

b) Technical support
When requested provide technical support, incentives, staff or consultant support, and equivalent resources to retail members to assist, or to otherwise support, the implementation of BMPs.

c) Program management
When mutually agreeable and beneficial to a wholesaler and its retail agencies offer program management and BMP reporting assistance to its retailers and the results of the offer will be documented. It is recognized that wholesale agencies have limited control over retail

agencies that they serve and must act in cooperation with those retail agencies on implementation of BMPs. Thus, wholesale agencies cannot be held responsible for levels of implementation by individual retailers in their wholesale service areas.

d) Water shortage allocation
Water shortage allocations plans or policies will encourage and reward investments in long-term conservation.

e) Non-signatory reporting
Wholesale water agencies will report on non-signatory BMP implementation, when possible.

4) Encourage CUWCC membership
Wholesale agencies will encourage CUWCC membership and offer recruitment assistance.

D. Requirements for Documenting BMP Implementation

1) Conservation coordinator
Provide the contact information for the conservation coordinator, or consultant assigned, and verification that the position is responsible for implementing the tasks identified in Section A.1).

2) Water waste prevention
Provide the following:

a) A description of, or electronic link to, any ordinances or terms of service adopted by water agency to meet the requirements of this BMP.

b) A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.

c) A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement consistent with this BMP.

d) A description of agency support positions with respect to adoption of legislation or regulations consistent with this BMP.

3) Wholesale agency assistance programs

a) Financial investments and building partnerships
List the total monetary amount of financial incentives and equivalent resources provided to retail members to assist with, or to otherwise support, implementation of BMPs, subtotaled by BMP. List regional partnerships developed to encourage resource conservation and maximize economies of scale benefits.

b) Technical support
Supply a summary of types of technical support provided to retail agencies.

c) Program management
If the wholesale agency has assumed reporting responsibility, list the programs managed on behalf of its retail agencies.

d) Water shortage allocation
If a water shortage allocation plan or policy has been developed, provide the date of adoption and electronic link to the document or hardcopy.

e) Non-signatory reporting
Receipt of reports

4) Encourage CUWCC membership
List of efforts to recruit retailers and amount of dues paid on behalf of retail agencies.

E. Water Savings Assumptions

Not quantified. However, water savings may be realized in the following ways:

1) Wholesalers may use the Council's Cost and Savings document to assess the total amount of water savings achieved by each wholesaler-supported BMP. Other statistically validated sources may be also used to demonstrate water savings.

2) Water savings from enforcement of legislation and regulations will be projections developed based on anticipated savings from device(s) applied to the population subject to the regulation(s).

3) Water savings from implementation of water waste prevention measures.

1.2 Water Loss Control *(formerly BMP 3) as amended September 16, 2009*

The goals of modern water loss control methods include both an increase in water use efficiency in the utility operations and proper economic valuation of water losses to support water loss control activities. In May 2009 the American Water Works Association (AWWA) published the 3rd Edition M36 Manual *Water Audits and Loss Control Programs.* BMP 1.2 will incorporate these new water loss management procedures and apply them in California. Agencies are expected to use the AWWA Free Water Audit Software ("AWWA Software") to complete their standard water audit and water balance.

A. Implementation

Implementation shall consist of at least the following actions:

1) Standard Water Audit and Water Balance. All agencies shall quantify their current volume of apparent and real water loss. Agencies shall complete the standard water audit and balance using the AWWA Water Loss software to determine their current volume of apparent and real water loss and the cost impact of these losses on utility operations at no less than annual intervals.

2) Validation. Agencies may use up to four years to develop a validated data set for all entries of their water audit and balance. Data validation shall follow the methods suggested by the AWWA Software to improve the accuracy of the quantities for real and apparent losses.

3) Economic Values. For purposes of this BMP, the economic value of real loss recovery is based upon the agency's avoided cost of water as calculated by the Council's adopted Avoided Cost Model or other agency model consistent with the Council's Avoided Cost Model.

4) Component Analysis. A component analysis is required at least once every four years and is defined as a means to analyze apparent and real losses and their causes by quantity and type. The goal is to identify volumes of water loss, the cause of the water loss and the value of the water loss for each component. The component analysis model then provides information needed to support the economic analysis and selection of intervention tools. An example is the Breaks and Background Estimates Model (BABE) which segregates leakage into three components: background losses, reported leaks and unreported leaks.

5) Interventions. Agencies shall reduce real losses to the extent cost-effective. Agencies are encouraged to refer to the AWWA's 3rd Edition M36 Publication, *Water Audits and Loss Control Programs* (2009) for specific methods to reduce system losses.

6) Customer Leaks. Agencies shall advise customers whenever it appears possible that leaks exist on the customer's side of the meter.

B. Implementation Schedule

1) For agencies signing the MOU prior to December 31, 2008, implementation shall commence no later than July 1, 2009.

   a) July 1, 2009 through June 30, 2010 will be the first year of implementation;

   b) Agencies shall provide its first full BMP 1.2 report by December 1, 2010 for years 2008-2009 and 2009-2010;

2) Agencies signing the MOU after December 31, 2008, implementation shall commence no later than July 1 of the year following the year the agency signed the MOU.

   a) Agencies shall provide a full BMP 1.2 report for the first reporting period after implementation and for each reporting year thereafter.

3) A benchmark for the performance indicator in terms of water loss standards will be determined after the first 4 years data collected based upon the data reported by agencies. The performance indicator and benchmark; will be voted upon by the Council by year 6 of this revision. Ongoing data collection and data reporting requirements will be established as part of this process.

C. Coverage Requirements

1) Agencies to compile the standard water audit and balance annually using the AWWA Software. Beginning in the 2nd year of implementation agencies to test source, import, and production meters annually.

2) Agencies shall improve the data accuracy and data completeness of the standard water balance during the first four years of implementation. Agencies shall achieve a Water Audit Data Validity score of 66 or higher using the AWWA software no later than the end of the first four year period; and shall achieve data validity Level IV no later than the end of the 5th year of implementation. Estimations for data that are not directly measured should be improved using the methods outlined by the AWWA.

3) Agencies shall seek training in the AWWA water audit method and component analysis process (offered by CUWCC or AWWA) during the first four years of BMP implementation. They shall complete a component analysis of real losses by the end of the fourth year, and update this analysis no less frequently than every four years.

4) Beginning in the fifth year of implementation, through the tenth year of implementation, agencies shall demonstrate progress in water loss control performance as measured by the AWWA software real loss performance indicator "gallons per service connection per day;" "gallons per mile of mains per day;" or other appropriate indicator by one of the following:

a) Achieving a performance indicator score less than the agency's score the previous year;

b) Achieving a performance indicator score less than the average of the agency's scores for the previous three years; or

c) Achieving a performance indicator score in the top quintile (20%) of all signatory agencies reporting such performance indicator with a Data Validity Level IV; or ;

d) In year 6 and beyond reducing real losses to or below the benchmark value determined in the Council's process referenced in section B3.

5) Agencies shall repair all reported leaks and breaks to the extent cost effective. By the end of the second year, agencies shall establish and maintain a record-keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. By the end of the fourth year, agencies shall include estimated leakage volume from report to repair, and cost of repair (including pavement restoration costs and paid-out damage claims, if any).

6) Agencies shall locate and repair unreported leaks to the extent cost effective.

D. Requirements for Documenting BMP Implementation

1) Agency shall submit the completed AWWA Standard Water Audit and Water Balance worksheets in the BMP 1.2 report form every reporting period.
2) For each reporting period, agency shall keep and make available validation for any data reported.
3) Agency shall maintain in-house records of audit results, methodologies, and worksheets for each completed audit period.
4) Agency keeps records of each component analysis performed, and incorporates results into future annual standard water balances.
5) Agency, for the purpose of setting the Benchmark:

a) keeps records of intervention(s) performed, including standardized reports on leak repairs, the economic value assigned to apparent losses and to real losses, miles of system surveyed for leaks, pressure reduction undertaken for loss reduction, infrastructure rehabilitation and renewal, volumes of water saved, and costs of intervention(s); and

b) prepares a yearly summary of this information for submission to the Council, during years two through five of implementation, unless extended by the Council.

E. Water Savings Assumptions

To Be Determined

1.3 METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS

(formerlyBMP 4) As Amended March 14, 2007

A. Implementation

For consistency with California Water Code (Section 525b), this BMP refers to potable water systems. A water meter is defined as a devise that measures the actual volume of water delivered to an account in conformance with the guidelines of the American Water Works Association. Implementation shall consist of at least the following actions:

1) Require meters for all new service connections.

2) Establish a program for retrofitting existing unmetered service connections.

3) Read meters and bill customers by volume of use.

   a) Establish and maintain billing intervals that are no greater than bi-monthly (every two months) for all customers.

   b) For each metered connection, perform at least five actual meter readings (including remotely sensed) per twelve month period.

4) Prepare a written plan, policy or program that includes:

   a) A census of all meters, by size, type, year installed, customer class served and manufacturer's warranty accuracy when new;

   b) A currently approved schedule of meter testing and repair, by size, type and customer class;

   c) A currently approved schedule of meter replacement, by size, type, and customer class; and

5) Identifying intra- and inter-agency disincentives or barriers to retrofitting mixed use commercial accounts with dedicated landscape meters, and conducting ~~a~~ feasibility study(s) to assess the merits of a program to provide incentives to switch mixed use accounts to dedicated landscape meters.

B. Implementation Schedule

1) Agencies signing the MOU prior to December 31, 1997, shall:

   a) Initiate volumetric billing for all metered customers no later than July 1, 2008; and

   b) Complete meter installation for all connections no later than July 1, 2009.

2) Agencies signing the MOU after December 31, 1997, shall:

   a) Initiate volumetric billing for all metered customers no later than July 1, 2008 or within one year of signing the MOU if later than July 1, 2008; and

   b) Complete meter installation for all service connections no later than July 1, 2012 or within six years of signing MOU, but in no case later than one year prior to the requirements of state law.

3) For unmetered service areas newly acquired or newly operated by otherwise metered agencies, meter installation shall be completed in these service areas within six years of the acquisition or operational agreement.

4) A feasibility study examining incentive programs to move landscape water uses on mixed-use meters to dedicated landscape meters to be completed by the end of Year Four following the date implementation was to commence.

5) A written plan, policy or program to test, repair and replace meters [see Section A(4) above] shall be completed and submitted electronically by July 1, 2008 or within one year of signing the MOU if later than July 1, 2008, whichever is later.

C. Coverage Requirements

100% of existing unmetered accounts to be metered and billed by volume of use within above specified time periods. Service lines dedicated to fire suppression systems are exempt from this requirement.

D. Requirements for Documenting BMP Implementation

1) Confirmation that all new service connections are metered and are being billed by volume of use and provide:

   a) Number of metered accounts;

   b) Number of metered accounts read;

   c) Number of metered accounts billed by volume of use;

d) Frequency of billing (i.e. six or twelve times per year) by type of metered customer (e.g. single family residential, multiple family residential, commercial, industrial, and landscape irrigation); and

e) Number of estimated bills per year by type of metered customer (e.g. single family residential, multiple family residential, commercial, industrial, and landscape irrigation) vs. actual meter readings.

2) Number of unmetered accounts in the service area. For the purposes of evaluation, this shall be defined as the baseline meter retrofit target, and shall be used to calculate the agency's minimum annual retrofit requirement.

3) Number of unmetered service connections retrofitted during the reporting period.

4) Estimated number of CII accounts with mixed-use meters.

5) Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.

E. Criteria to Determine BMP Implementation Status

1) Agency with existing unmetered service connections has completed a meter retrofit plan by the end of Year Two following the date implementation was to commence.

2) Agency has completed a feasibility study examining incentive programs to move landscape water uses on mixed-use meters to dedicated landscape meters by the end of Year Two following the date implementation was to commence.

3) Agency with existing unmetered service connections is on track to meter these connections during the schedule shown in Section B. An agency will be considered on track if the percent of unmetered accounts retrofitted with meters equals or exceeds the following:

Target Dates for "On Track" Compliance with BMP 4	
Percent of unmetered accounts retrofitted	**Agency signed the MOU prior to December 31, 1997**
10 percent	December 31. 2000
24 percent	December 31, 2002
42 percent	December 31, 2004
64 percent	December 31, 2006
90 percent	December 31, 2008

100 percent	July 1, 2009

Target Dates for "On Track" Compliance with BMP 4	
Percent of unmetered accounts retrofitted	**All agencies signing the MOU after 1997**
20 percent	December 31, 2004
40 percent	December 31, 2006
60 percent	December 31, 2008
80 percent	December 31, 2010
100 percent	July 1, 2012

4) Agency bills metered customers at least as often as bimonthly within four years.

5) Agency reads meters and bills metered customers using volumetric rates.

6) Agency has completed a written plan, policy or program to test, repair and replace meters.

F. Water Savings Assumptions

Assume meter retrofits and volumetric rates combined will result in a 20% reduction in demand for retrofitted accounts.

G. Commitment to Further Review

Within three years from the date this BMP revision is adopted, the CUWCC will complete an evaluation of the potential water use efficiency impacts and cost-effectiveness of the following for consideration as future BMP revision(s):

1) Criteria for meter testing, repair, replacement and accuracy;

2) Transition to installing automated meter reading (AMR) technologies; and

3) Transition to monthly billing schedules for all accounts.

1.4 Retail Conservation Pricing *(formerly BMP 11)*

As Amended June 13, 2007

Part I - Retail Water Service Rates

A. Implementation

BMP 11 promotes water conserving retail water rate structures. BMP 11 recognizes that each agency or water enterprise fund has a unique rate setting system and history. When creating a rate case, professional judgments are made to determine whether costs are accounted to a variable or fixed cost center by the staff of the agency. The final water rate case is an accumulation of all the decisions and judgments made by staff and supplemented by the financial projections leading an agency to establish its final water rate recommendation. BMP 11 is not intended to supplant this process, but rather to reinforce the need for Water Agencies to establish a strong nexus between volume-related system costs and volumetric commodity rates.

In Bighorn-Desert View Water Agency v. Virjil the California Supreme Court applied Proposition 218's* provisions embodied in Articles XIII C and D of the California Constitution to ongoing water service. In addition, Article XIII D, Section 6 imposes procedural and substantive requirements on new or increased fees or charges for on-going water service. The Council considers the conservation principles of BMP 11 to be compatible with the cost of service requirements of Proposition 218. However, should a case arise in which a Water Agency's good faith efforts were unable to meet BMP 11's requirements due to legal constraints (e.g. Proposition 218), this would be grounds for exemption, as specified in MOU Section 4.5.

Definition: Conservation pricing provides economic incentives (a price signal) to customers to use water efficiently. Because conservation pricing requires a volumetric rate, metered water service is a necessary condition of conservation pricing. Unmetered water service is inconsistent with the definition of conservation pricing.

Conservation pricing requires volumetric rate(s). While this BMP defines a minimum percentage of water sales revenue from volumetric rates, the goal of this BMP is to recover the maximum amount of water sales revenue from volumetric rates that is consistent with utility costs (which may include utility long-run marginal costs), financial stability, revenue sufficiency, and customer equity.
In addition to volumetric rate(s), conservation pricing may also include one or more of the following other charges:

1) Service connection charges designed to recover the separable costs of adding new customers to the water distribution system.

* Proposition 218 was approved by California voters in November 1996.

2) Monthly or bimonthly meter/service charges to recover costs unrelated to the volume of water delivered or new service connections and to ensure system revenue sufficiency.

3) Special rates and charges for temporary service, fire protection service, and other irregular services provided by the utility.

The following volumetric rate designs are potentially consistent with the above definition:

1) **Uniform rate** in which the volumetric rate is constant regardless of the quantity consumed.

2) **Seasonal rates** in which the volumetric rate reflects seasonal variation in water delivery costs.

3) **Tiered rates** in which the volumetric rate increases as the quantity used increases.

4) **Allocation-based rates** in which the consumption tiers and respective volumetric rates are based on water use norms and water delivery costs established by the utility.

Adequacy of Volumetric Rate(s): A retail agency's volumetric rate(s) shall be deemed sufficiently consistent with the definition of conservation pricing when it satisfies at least one of the following two options.

Option 1: Let V stand for the total annual revenue from the volumetric rate(s) and M stand for total annual revenue from customer meter/service (fixed) charges, then:

$$\frac{V}{V + M} \geq 70\%$$

This calculation shall only include utility revenues from volumetric rates and monthly or bimonthly meter/service charges. It shall not include utility revenues from new service connection charges; revenue from special rates and charges for temporary service, fire protection, or other irregular services; revenue from grants or contributions from external sources in aid of construction or program implementation; or revenue from property or other utility taxes.

Option 2: Use the rate design model included with the Municipal Water and Wastewater Rate Manual published by the Canadian Water & Wastewater Association with the signatory's water system and cost information to calculate V', the uniform volume rate based on the signatory's long-run incremental cost of service, and M', the associated meter charge. [Let HCF be annual water delivery (in hundred cubic feet).] A signatory's volumetric rate(s) shall be deemed sufficiently consistent with the definition of conservation pricing if:

$$\frac{V}{V + M} \geq \frac{V'}{V' + M'}$$

The rate design model can be downloaded at http://www.cuwcc.org/resource-center/technical-resources/bmp-tools.aspx.

This calculation shall only include utility revenues from volumetric rates and monthly or bimonthly meter/service charges. It shall not include utility revenues from new service connection charges; revenue from special rates and charges for temporary service, fire protection, or other irregular services; revenue from grants or contributions from external sources in aid of construction or program implementation; or revenue from property or other utility taxes.

Exemptions and At Least As Effective As

The exemption provisions in MOU Section 4.5 apply to BMP 11 in the same way they apply to other BMPs. Water supplier signatories meeting at least one of the three exemption conditions in MOU Section 4.5 may submit an exemption to the Council per the requirements of the MOU.

Water supplier signatories may pursue an "At Least As Effective As" implementation of BMP 11 per the Preamble to Exhibit 1 of the MOU. Water supplier signatories adopting an "At Least As Effective As" implementation of BMP 11 may adopt rates that do not meet the requirements of either Option 1 or Option 2 described in Section A provided the resulting water savings are at least as effective as those options.

BMP Refinement

Within five years of the adoption of this BMP revision, the Council shall reconvene the BMP 11 Revision PAC to 1) assess rate of compliance with the revised BMP, 2) identify barriers to implementation, 3) assess its compatibility with Proposition 218 requirements, 4) initiate a water savings assessment appropriate to the data and project resources available to the Council, and 5) develop further refinements as needed to improve the BMP's effectiveness.

B. Implementation Schedule

Agencies with fully metered service areas

1) Agencies signing the MOU prior to June 13, 2007, implementation shall commence no later than July 1, 2007.

2) Agencies signing the MOU after June 13, 2007, implementation shall commence no later than July 1 of the year following the year the Agency signed the MOU.

Agencies with partially metered service areas[1]

1 Agencies following this schedule must be on the Council's list of Agencies with partially metered service areas.

1) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 2010. [One year after Agency is to complete meter installation per BMP 4.]

2) Agencies signing the MOU after December 31, 1997, implementation shall commence no later than July 1, 2013, or within seven years of signing the MOU, but in no case later than the metering deadline specified by state law. [One year after Agency is to complete meter installation per BMP 4.]

C. Coverage Requirements

Agency shall maintain a rate structure that satisfies at least one of the options specified in Section A. Conformance to Option 1 or Option 2 will first be assessed using the revenue from the most recent year. If the most recent year does not satisfy the option, the average revenue from the three (3) most recent years will be used.

D. Requirements for Documenting BMP Implementation

1) Report the rate structure in effect for each customer class for the reporting period.

2) Report the annual revenue derived from volume charges for each retail customer class, as defined in Section A.[2]
3) Report the annual revenue derived from monthly or bimonthly meter/service charges for each retail customer class, as defined in Section A.

4) If agency does not comply with Option 1 in Section A, report v' and m' as determined by the Canadian Water & Wastewater Association rate design model described in Section A.

5) If agency does not comply with Option 1 in Section A, submit to the Council the completed Canadian Water & Wastewater Association rate design model described in Section A.

E. Criteria to Determine BMP Implementation Status

An agency shall be incompliance with BMP 11 provided the following is true for the Agency's total revenue from all retail customer classes within four years after [date of revision]:

For Option 1: $V \geq 70\% \times 1.00$

For Option 2: $V \geq V' \times 1.00$

2 Note: Compliance with BMP 11 will be determined based on the Agency's total revenue from all retail customer classes.

The following schedule is intended to guide agencies in implementing this revision in phases:

YEARS AFTER START YEAR	FOR OPTION 1	FOR OPTION 2
1	V ≥ 70% x 0.70	V ≥ V' x 0.70
2	V ≥ 70% x 0.80	V ≥ V' x 0.80
3	V ≥ 70% x 0.90	V ≥ V' x 0.90
4	V ≥ 70% x 1.00	V ≥ V' x 1.00

An agency shall not be required to increase the volumetric component of the rate structure by more than 10% in any single year until the full implementation is achieved.

F. Water Savings Assumptions

Not quantified.

Part II – Retail Wastewater Rates

A. Implementation

This section applies to Water Agencies that provide retail sewer service. Water Agencies that do not provide retail sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

Conservation pricing of sewer service provides incentives to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service, and billing for sewer service based on metered water use. Conservation pricing of sewer service is also characterized by one or more of the following components: rates in which the unit rate is the same across all units of service (uniform rates); rates in which the unit rate increases as the quantity of units purchased increases (increasing block rates); rates in which the unit rate is based upon the long-run marginal cost or the cost of adding the next unit of capacity to the sewer system. Rates that charge customers a fixed amount per billing cycle for sewer service regardless of the units of service consumed do not satisfy the definition of conservation pricing of sewer service. Rates in which the typical bill is determined by high fixed charges and low commodity charges also do not satisfy the definition of conservation pricing of sewer service.

B. Implementation Schedule

1) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.

2) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

Agency shall maintain rate structure for sewer service consistent with definition of conservation pricing for sewer service in Part II, Section in A.

D. Requirements for Documenting BMP Implementation

1) Report annual revenue requirement for sewer service by customer class for the reporting period.

2) Report annual revenue for sewer service from commodity charges by customer class for the reporting period.

3) Report rate structure by customer class for sewer service.

E. Criteria to Determine BMP Implementation Status

Agency rate design for sewer service shall be consistent with definition of conservation pricing for sewer service in Section A.

F. Water Savings Assumptions

Not quantified.

2. EDUCATION PROGRAMS

California water agencies have played a major role in stressing the need for their customers to conserve water through both public information and school education programs. The specifics of how these programs are to be implemented are detailed below.

2.1 PUBLIC INFORMATION PROGRAMS *(formerly BMP 7)*

This section addresses opportunities to use public information programs as an effective tool to inform customers about the need for water conservation and ways they can conserve, and to influence customer behavior to conserve.

A. Implementation

Implement a public information program to promote water conservation and water conservation-related benefits. Implementation shall consist of at least the following actions:

1) The program should include, when possible, but is not limited to, providing speakers to employees, community groups and the media; using paid and public service advertising; using bill inserts; providing information on customers' bills showing use for the last billing period compared to the same period the year before; providing public information to promote water conservation measures; and coordinating with other government agencies, industry groups, public interest groups, and the media.

2) The program should include, when possible, social marketing elements which are designed to change attitudes to influence behavior. This includes seeking input from the public to shape the water conservation message; training stakeholders outside the utility staff in water conservation priorities and techniques; and developing partnerships with stakeholders who carry the conservation message to their target markets.

3) When mutually agreeable and beneficial, the wholesale agency or another lead regional agency may operate all or part of the public information program. If the wholesale agency operates the entire program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting for this BMP. Under this arrangement, a wholesale agency may aggregate all or portions of the reporting and coverage requirements of the retail agencies joining into the mutual consent.

B. Implementation Schedule

Implementation shall commence no later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

C. Coverage Requirements

Agencies shall maintain an active public information program to promote and educate customers about water conservation.

At minimum a public information program shall consist of the following components:

1) Contacts with the public (minimum = 4 times per year, i.e., at least quarterly).
2) Water supplier contacts with media (minimum = 4 times per year, i.e., at least quarterly).
3) An actively maintained website that is updated regularly (minimum = 4 times per year, i.e., at least quarterly).
4) Description of materials used to meet minimum requirement.
5) Annual budget for public outreach program.
6) Description of all other outreach programs (List follows in Section D).

D. Requirements for Documenting BMP Implementation

Agencies may report on all of the following activities, although agencies are only expected to meet the minimum requirements in section C. Coverage Requirements.

Public Information Programs List

1) Newsletter articles on conservation
2) Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
3) Landscape water conservation media campaigns
4) General water conservation information
5) Website
6) Email messages
7) Website - provide link to or list of qualified landscape professionals (WaterSense, California Landscape Contractors Association, Irrigation Association, etc.) and other helpful sites
8) Direct mail - seasonal postcards noting irrigation requirement changes
9) Direct mail or other notification to customer if water use is significantly higher than neighbors with similarly-sized lots
10) Customer notification when neighbor reports runoff or runoff is noticed by employees or meter reads show rise in use of 20% or more from same time previous year
11) Dedicated phone line or “on hold” messages with recorded conservation information
12) Booths at local fairs/events
13) Monthly water use reports provided with comparison of water use to water budget
14) Presentations
15) Point of purchase pieces, including internet point of purchase by type: high efficiency clothes washers, weather based irrigation controller, high

efficiency toilets, plant palette information, other.

16) Media outreach: news releases, editorial board visits, written editorials, newspaper contacts, television contacts, radio contacts, articles or stories resulting from outreach. Provide names of local media markets: newspaper, TV stations, radio stations reached via media outreach program during the reporting period
17) Adult Education/Training Programs: Topic(s) _____: number of presentations, number of attendees
18) Water Conservation Gardens: involvement in a garden that promotes and educates the public about water-efficient landscaping and conservation techniques. May include "Corporate" or "business" sponsorship or membership.
19) Sponsor or co-sponsor landscape workshops/training for homeowners and/or homeowners associations: number of presentations; number in attendance
20) Landscape watering calculator and watering index to assist with weekly irrigation scheduling
21) Additional program(s) supported by agency but not mentioned above
22) Total reporting period budget expenditure for public outreach/training/adult education programs (include all agency costs)

Social Marketing Programs List

Developing the Conservation Message:

1) Does your agency have a water conservation "brand," "theme" or mascot: If so briefly describe: _____
2) Have you sponsored or participated in market research to refine your message? If so topic: _____Message of above brand? Mission Statement?
3) Do you have a community conservation committee?
   If yes, its focus is on:
   a. Conservation in general;
   b. Landscape;
   c. Education;
   d. Commercial/industrial/institutional;
   e. Other:_____

4) Training for stakeholders who help support programs or educate others about conservation:
   a. Professional landscapers: number of sessions/classes; number of attendees: on irrigation equipment; other
   b. Plumbers: number of sessions/classes; number of attendees
   c. Homeowners: number of sessions/classes; number of attendees: on irrigation equipment; other

5) Additional program(s) supported by agency but not mentioned above.
6) Total reporting period budget expenditure for social marketing programs (include all agency costs)

Partnering programs:

1) Master Gardeners; Type of program:_____
2) CLCA; Type of program:_____
3) Cooperative Extension; Type of program:_____
4) Retail and wholesale outlets
   Name(s):_____
   Type of program:_____
5) Local Colleges; Type of program:_____
6) Green Building Programs; Type of program:_____
7) Other _____ _____
8) Newsletter articles published in other entities' newsletters:
   a. HOAs: number per year to number of customers
   b. City materials: number per year to number of customers
   c. Non-profits: number per year to number of customers
   d. Other: number per year to number of customers
9) Other utilities, including electric utilities
10) Water conservation gardens at utility or other high traffic areas or new homes
11) Water wise landscape contest or awards program

E. <u>Water Savings Assumptions</u>

Not quantified.

2.2 SCHOOL EDUCATION PROGRAMS *(formerly BMP 8)*

School education programs have been implemented to reach the youngest water users at an early age and enforce the need to engage in water conservation as a life-long behavior. This section provides specifics on how school education programs are to be implemented.

A. Implementation

Implementation shall consist of at least the following actions:

1) Implement a school education program to promote water conservation and water conservation-related benefits.

2) Programs shall include working with school districts and private schools in the water suppliers' service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Educational materials shall meet the state education framework requirements and grade-appropriate materials shall be distributed.

3) When mutually agreeable and beneficial, the wholesale agency or another lead regional agency will operate all or part of the education program; if the wholesale agency operates all or part of the retail agency's school education program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting of this BMP; under this arrangement, a wholesale agency may aggregate all or portions of the reporting and coverage requirements of the retail agencies joining into the mutual consent

B. Implementation Schedule

Implementation shall commence no later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

C. Coverage Requirements

Agencies shall maintain an active school education program to educate students in the agency's service area about water conservation and efficient water use. An agency may participate in a mutual arrangement as described in Section A.

At minimum a school information program shall consist of the following:

1) Curriculum materials developed and/or provided by agency (including confirmation that materials meet state education framework requirements and are grade-level appropriate).
2) Materials distributed to K-6 students. When possible, school education programs will reach grades 7-12 as well.

3) Description of materials used to meet minimum requirement.
4) Annual budget for school education program.
5) Description of all other water supplier education programs (Lists follow in Section D).

D. Requirements for Documenting BMP Implementation

Agencies may report on all of the following activities, although they are only expected to meet the minimum requirements in section C. Coverage Requirements.

School Education Programs List

1) Classroom presentations: number of presentations, number of attendees, topics covered: conservation, recycled water, water sources, pollution prevention, etc.
2) Large group assemblies: number of presentations, number of attendees
3) Children's water festivals or other events: number of presentations, number of attendees
4) Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up: number of presentations, number of attendees.
5) Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits) Description_____; number distributed
6) Staffing children's booths at events & festivals: number of booths, number of attendees
7) Water conservation contests such as poster and photo Description_____; number of participants.
8) Offer monetary awards/funding or scholarships to students: number offered; total funding
9) Teacher training workshops: number of presentations, number of attendees
10) Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.: number of tours or field trips, number of participants.
11) College internships in water conservation offered: number of internships; total funding
12) Career fairs/workshops: number of presentations, number of attendees
13) Additional program(s) supported by agency but not mentioned above. Description: _____; number of events (if applicable); number of participants.
14) Total reporting period budget expenditures for school education programs (include all agency costs)

E. Water Savings Assumptions

Not quantified.

PROGRAMMATIC BMPs

Signatories have the option of implementing each BMP as described below, or implementing measures identified in the Flex Track Menu alternative included in each Programmatic BMP.

3. RESIDENTIAL

Residential water users throughout California depend on a reliable and safe supply of water for their homes. This BMP will define the best and most proven water conservation methods and measures those residents, working in conjunction with water agencies, can implement. By implementing these methods and measures homeowners, multi-family property owners, and tenants will increase water use efficiency and reliability. Credit for prior activities, as reported through the BMP database, will be given for documented water savings achieved though 2008.

A. Implementation

Retail water agencies shall implement a water use efficiency program that consists of either the coverage goals listed below or achieving the water savings goals by implementing measures on the Flex Track Menu in Section F below.

1) Residential assistance program *(formerly BMPs 1 & 2)*
Provide site-specific leak detection assistance that may include, but is not limited to, the following: a water conservation survey, water efficiency suggestions, and/or inspection. Provide showerheads and faucet-aerators that meet the current water efficiency standard as stipulated in the WaterSense Specifications (WSS) as needed.

2) Landscape water survey *(formerly BMP 1)*
Perform site-specific landscape water surveys that shall include, but are not limited to, the following: check irrigation system and timers for maintenance and repairs needed; estimate or measure landscaped area; develop customer irrigation schedule based on precipitation rate, local climate, irrigation system performance, and landscape conditions; review the scheduling with customer; provide information packet to customer; and provide customer with evaluation results and water savings recommendations.

3) High-efficiency clothes washers (HECWs) *(formerly BMP 6)*
Provide incentives or institute ordinances requiring the purchase of high-efficiency clothes washing machines (HECWs) that meet an average water factor value of 5.0. If the WaterSense Specification is less than 5.0, then the average water factor value will decrease to that amount.

4) WaterSense Specification (WSS) toilets *(formerly BMP 14)*
Provide incentives or ordinances requiring the replacement of existing toilets using 3.5 or more gpf (gallons per flush) with a toilet meeting WSS.

5) WaterSense Specifications for residential development
Provide incentives such as, but not limited to, rebates, recognition programs, or reduced connection fees, or ordinances requiring residential construction meeting WSS for single-family and multi-family housing until a local, state or federal regulation is passed requiring water efficient fixtures.

B. Implementation Schedule

Implementation shall commence no later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this exhibit is amended.

C. Coverage Requirements

Coverage shall consist of:

1) Residential Assistance
Provide leak detection assistance to an average of 1.5 percent per year of current single-family accounts and 1.5 percent per year of current multi-family units during the first ten years after signing the MOU. After completing the ten-year 15 percent target, agencies will maintain a program at the level of high-bill complaints or not less than 0.75 percent per year of current single-family accounts and 0.75 percent per year of current multi-family units. Showerhead distribution will be considered complete when 75 percent market saturation is achieved.

2) Landscape water survey
Provide landscape water surveys to an average of 1.5 percent per year of current single-family accounts during the first ten years after signing the MOU. After completing the ten-year 15 percent target, agencies will maintain a program at the level of high-bill complaints or no less than 0.75 percent per year of current single-family accounts.

3) High efficiency clothes washers
Provide financial incentives for the purchase of HECWs that meet an average water factor value of 5.0. If the WaterSense Specification is less than 5.0, then the water factor value will decrease to that amount. Incentives shall be provided to 0.9 percent of current single-family accounts during the first reporting period following BMP implementation, rising to 1.0 percent per year of current single-family accounts for the remainder of ten year period following signing of the MOU. An alternative method is to demonstrate 1.4 percent per year of the market penetration during the first ten years after signing the MOU.

4) WaterSense Specification (WSS) toilets
A financial incentive shall continue to be offered for toilets meeting the current WSS and updated standard whenever a more efficient toilet is identified by WSS. Compliance will entail demonstrating a number of toilet replacements of 3.5 gpf or greater toilets at or above the level achieved through a retrofit on resale

ordinance until 2014, or a market saturation of 75% is demonstrated, whichever is sooner.

5) WSS for new residential development
An incentive shall continue to be offered until a water agency, or local, state or federal regulation is in effect meeting at a minimum, WSS for water efficient single-family homes. Multi-family housing shall also meet the WSS in all applicable criteria regardless of the total number of stories in the building.

D. Requirements for Documenting BMP Implementation

1) Residential assistance
Provide reports, disaggregated by single-family and multi-family units, identifying: the number of residential assistance/leak detection survey visits completed; number of WSS showerheads distributed; and number of WSS faucet aerators distributed during the reporting period.

2) Landscape water survey
Provide the number of single-family and multi-family account landscape water surveys completed during the reporting period.

3) High efficiency clothes washers
The number of installations credited to the agency's replacement program for HECWs with an average water factor value of 5.0. If the WaterSense Specification is less than 5.0, then the water factor value will decrease to that amount.

4) WaterSense Specification (WSS) toilets
A description of the program along with the number of WSS toilet installations credited to the agency's replacement program disaggregated by single-family or multi-family units.

5) WSS for new residential development
Provide a copy of the new development ordinance currently adopted by the reporting unit or provide the following incentive program details: number of new single-family and multi-family units built in service area during the reporting period; description of incentives offered; list of incentive amounts; number of WSS fixtures installed; and number of participating single-family home and multi-family units.

E. Water Savings Assumptions

Water savings assumptions will be based on the type and number of actions implemented.

F. Flex Track Menu

In addition to the measures above, the Flex Track Menu may be implemented in part or any combination to meet the savings goal for this BMP. Agencies

choosing the Flex Track Menu are responsible for achieving water savings greater than or equal to that which they would have achieved using only the BMP list items. Water savings estimates for the Flex Track Menu will be maintained and regularly updated in the MOU Compliance Policies and BMP Guidebook.

4. COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL *(formerly BMP 9)*

Commercial, industrial, and institutional (CII) water demands make up a large percentage of total demand for California. CII water use varies dramatically between business sectors as well as within a given water agency's territory. The goal of this BMP is to implement comprehensive yet flexible best management practices, allowing each water agency to tailor the implementation of each practice to fit local needs and opportunities. The end result is a practice that is successful and will produce the greatest amount of cost-effective water savings.

A. Implementation

Implement measures to achieve the water savings goal for CII accounts of 10% of the baseline water use over a 10-year period. Baseline water use is defined as the water consumed by CII accounts in the agency's service area in 2008. Credit for prior activities, as reported through the BMP database, will be given for up to 50% of the goal; in this case, coverage will consist of reducing annual water use by CII accounts by an amount equal to the adjusted percentage goal within 10 years. Implementation shall consist of item 1) or 2) or both in order to reach the agency's water savings goals.

1) Implement measures on the CII list with well-documented savings that have been demonstrated for the purpose of documentation and reporting. The full list and their associated savings are included in the "Demonstrated Savings Measure List" in Section E below.

2) Implement unique conservation measures to achieve the agency's water savings goals. Sample measures include, but are not limited to: industrial process water use reduction, industrial laundry retrofits, car wash recycling systems, water-efficient commercial dishwashers, and wet cleaning. Water use reduction shall be calculated on a case-by-case basis. Agencies will be required to document how savings were realized and the method and calculations for estimating savings. See the CII Flex Track Menu list in the attachment to Exhibit 1, as updated in the MOU Compliance Policy and BMP Guidebook.

B. Implementation Schedule

Implementation shall commence not later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

C. Coverage Requirements

Coverage shall consist of meeting the annual water savings goal in Section A. Although it is not one of the criteria in meeting implementation, agencies will be considered on track if estimated savings as a percent of baseline water use equals or exceeds the following:

0.5% by the end of first reporting period (year two), 2.4% by the end of year four, 4.3% by the end of year six, 6.4% by the end of year eight, and 9% by the end of year ten. Percentages will be adjusted proportionally for up to 50% past credit referred to in the Implementation section.

D. Requirements for Documenting BMP Implementation

Each reporting period agencies are required to report the estimated reduction in annual water use for all CII accounts.

1) CII Demonstrated Savings Measure List
For measures on the CII Demonstrated Savings Measure list with demonstrated savings, agencies shall report the measure type and quantity installed, as well as savings attributed to water shortage measures, intervention and actions.

2) Flex Track Menu
For measures on the Flex Track Menu, agencies shall use one of three methods of measurement listed below to track savings. Agencies shall report the type of measure implemented, the industry in which the measure was implemented, and estimated savings as well as the measure life. Agencies shall keep detailed usage data on file and report the annual and lifetime savings.

a) Point of Retrofit Metering
Usage data collected from meters installed at the point of retrofit.

b) Customer Bill Analysis
Pre- and post-program usage from utility bills from the appropriate meters related to the measures implemented. For mixed-use meters, a minimum of 12 months pre-retrofit and 12 months post-retrofit usage data shall be used to calculate savings. The data shall be normalized for weather. For dedicated meters, a minimum of 6 months pre-retrofit and 6 months post-retrofit data shall be used to calculate savings.

c) Agency-Provided Calculation
If an agency is unable to provide point of retrofit metering or customer bill analysis, the agency must document how savings were realized and the method and calculations for estimated savings. The calculation and assumptions are subject to approval by the Council on a case-by-case basis.

E. Water Savings Assumptions

The Demonstrated Savings Measure List is found in the MOU Compliance Policy. For assistance in calculating savings from unique measures used in the Flex Track Menu approach, see the BMP Guidebook.

F. Flex Track Menu

In addition to the measures above, the Flex Track Menu options may be implemented in part or any combination for CII customers to meet the water savings goal of this BMP. Agencies may choose to implement any alternative with measurable water savings. Agencies choosing the Flex Track Menu option are responsible for achieving water savings greater than or equal to that which they would have achieved using only the BMP list items. Water savings estimates for the Flex Track Menu items will be maintained and regularly updated in the MOU Compliance Policies and BMP Guidebook.

Custom measures shall be calculated on a case-by-case basis. Agencies will be required to provide documentation on how savings were realized and the method and calculations for estimating savings.

5. LANDSCAPE *(formerly BMP 5)*

Irrigation accounts for a large portion of urban water use in California. Irrigation water use varies dramatically depending on water pricing and availability, plant choice, geographic locations, seasonal conditions, and the level of commitment to sound water efficiency practices. The goal of this BMP is that irrigators, with assistance from signatories, will achieve a higher level of water use efficiency consistent with the actual irrigation needs of the plant materials. Reaching this goal would reduce overall demands for water, reduce demands during the peak summer months, and still result in a healthy and vibrant landscape for California.

A. Implementation

Agencies shall provide non-residential customers with support and incentives to improve their landscape water use efficiency. Credit for prior activities, as reported through the BMP database, will be given for documented water savings achieved though 2008.This support shall include, but not be limited to, the following:

1) Accounts with Dedicated Irrigation Meters

a) Identify accounts with dedicated irrigation meters and assign ETo-based water use budgets equal to no more than an average of 70% of ETo (reference evapotranspiration) of annual average local ETo per square foot of landscape area in accordance with the schedule below.

Recreational areas (portions of parks, playgrounds, sports fields, golf courses, or school yards in public and private projects where turf provides a playing surface or serves other high-use recreational purposes) and areas permanently and solely dedicated to edible plants, such as orchards and vegetable gardens, may require water in addition to the water use budget. (These areas will be referred to as “recreational” below.) The water agency must provide a statement designating those portions of the landscape to be used for such purposes and specifying any additional water needed above the water use budget, which may not exceed 100% of ETo on an annual basis.

If the California Model Water Efficient Landscape Ordinance is revised to reduce the water allowance, this BMP will be revised automatically to reflect that change.

b) Provide notices each billing cycle to accounts with water use budgets showing the relationship between the budget and actual consumption.

c) Offer site-specific technical assistance to reduce water use to those accounts that are 20% over budget in accordance with the schedule given in Section B; agencies may choose not to notify customers whose use is less than their water use budget.

2) Commercial/Industrial/Institutional (CII) Accounts without Meters or with Mixed-Use Meters

a) Develop and implement a strategy targeting and marketing large landscape water use surveys to commercial/industrial/institutional (CII) accounts with mixed-use meters.

b) In un-metered service areas, actively market landscape surveys to existing accounts with large landscapes, or accounts with landscapes which have been determined by the purveyor not to be water efficient.

3) Offer financial incentives to support 1) and 2) above.

B. Implementation Schedule

1) Implementation shall commence not later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

2) Per year at least 9% of accounts with dedicated meters and 1.5% of all mixed-use or non-metered accounts will receive the assistance detailed in Section A. 1) and 2) above. At least 90% of all dedicated meters and 15% of all mixed-use and non-metered accounts will receive the assistance over a ten year period.

C. Coverage Requirements

Coverage shall consist of:

1) ETo-based water use budgets developed for 90% of CII accounts with dedicated irrigation meters at an average rate of 9% per year over 10 years.

2) Offer site-specific technical assistance annually to all accounts that are 20% over budget within six years of the date implementation was to commence.

3) Complete irrigation water use surveys for not less than 15% of CII accounts with mixed-use meters and un-metered accounts within 10 years of the date implementation is to commence. (Note: CII surveys that include both indoor and outdoor components can be credited against coverage requirements for both the Landscape and CII BMPs.)

   An agency will be considered on track if the percent of CII accounts with mixed-use meters receiving a landscape water use survey equals or exceeds the following: 1.5% by the end of the first reporting period (year two) following the date implementation is to commence; 3.6% by the end of year four; 6.3% by the end of year six; 9.6% by the end of year eight; and 13.5% by the end of year ten.

   Agency may credit 100% of the number of landscape water use surveys for CII accounts with mixed-use meters completed prior to July 1, 2007 that have received a follow-up inspection against the coverage requirement; agency may credit 50% of surveys that have not received follow-up inspections. Agency may credit 100% of the number of landscape water use surveys completed for CII accounts with mixed-use meters after July 1, 2007 against the coverage requirement.

4) Agency will implement and maintain a customer incentive program(s) for irrigation equipment retrofits.

D. Requirements for Documenting BMP Implementation

1) Dedicated Landscape Irrigation Accounts

Agencies shall preserve water use records and budgets for customers with dedicated landscape irrigation accounts for at least four years. This information may be used by the Council to verify the agency's reporting on this BMP.

a) Number of dedicated irrigation meter accounts.

b) Number of dedicated irrigation meter accounts with water budgets.

c) Aggregate water use for dedicated non-recreational landscape accounts with budgets.

d) Aggregate acreage assigned water budgets and average ET for dedicated non-recreational landscape accounts with budgets.

e) Number of Accounts 20% over-budget.

f) Number of accounts 20% over-budget offered technical assistance.

g) Number of accounts 20% over-budget accepting technical assistance

h) Aggregate acreage of recreational areas assigned water budgets and average ET for dedicated recreational landscape accounts with budgets.

2) CII Accounts without Meters or with Mixed-Use Meters

a) Number of mixed use and un-metered accounts.

b) Number, type, and dollar value of incentives, rebates, and no- or low-interest loans offered to, and received by, customers.

c) Number of surveys offered.

d) Number of surveys accepted.

e) Estimated annual water savings by customers receiving surveys and implementing recommendations.

E. Water Savings Assumptions

Assume landscape BMP will result in a 15%-20% reduction in demand for landscape irrigation by affected accounts, as defined in Section C: Coverage Requirements.

F. Flex Track Menu

In addition to the measures above, the Flex Track Menu options may be implemented in part or any combination to meet the savings goal for this BMP. Agencies choosing the Flex Track Menu option are responsible for achieving water savings greater than or equal to that which they would have achieved using only the BMP list items. Water savings estimates for the Flex Track Menu items will be maintained and regularly updated in the MOU Compliance Policies and BMP Guidebook.

GPCD Compliance Option

Gallons per capita daily (GPCD) is the third compliance approach for the MOU. The combined water savings from implementation of the Foundational and Programmatic BMPs should produce greater water savings than the Programmatic BMPs themselves. Since most Foundational BMPs are not quantified, the GPCD approach evaluates compliance by evaluating the overall reduction in per capita water demand over time. One measure of efficiency, GPCD, indicates the increase in efficiency in water demand over time, by dividing demand by population, which gives average water consumption value per person served. The GPCD Approach includes the following sections: Potable Water GPCD Equation; Baseline GPCD; GPCD Target; Biennial GPCD Targets; Compliance; Appeals and GPCD Calculation Refinement.

Potable Water GPCD Equation

Potable Water GPCD = (PWI – PWS) / Pop / 365; where

1. PWI = Potable Water Into the retail water agency's service area distribution system.
2. PWS = Potable Water taken out of the retail water agency's service area distribution system and:
   - placed into storage and/or
   - delivered to an agricultural customer through a dedicated agricultural meter, at discretion of the retail water agency.
3. Pop = residential population of the retail water agency's service area.

Baseline GPCD

The Baseline GPCD shall equal the average annual Potable Water GPCD for the years 1997 through 2006. Signatory Water Suppliers who signed the MOU prior to 1997 and can demonstrate significant investment in water conservation may propose a different Baseline period as outlined in the MOU Compliance Policy.

GPCD Target

For purposes of compliance, the 2018 GPCD Target for all signatories as of July 1, 2009 shall equal Baseline GPCD multiplied by 0.82 (an 18% reduction).

Biennial GPCD Targets

Using the Compliance Table below, for each "Year" in the table, a retail water agency's Biennial GPCD Target shall equal its Baseline GPCD multiplied by that year's Target (% Baseline). A retail water agency may choose a starting point as either its Baseline GPCD or its 2006 Potable Water GPCD.

Compliance

For retail water agencies choosing the GPCD Option for compliance with the Programmatic BMPs, the retail water agency shall submit the following calculations along with supporting data as part of their first normal biennial report for that period:

(1) Potable Water GPCD for each year in the baseline period;

(2) 2018 GPCD Target and five Biennial GPCD Targets; and

A retail water agency shall be considered to be in compliance with the BMPs in any reporting period when it submits the following:

(1) Complete "Water Supply & Reuse" and "Accounts & Water Use"

(2) Supporting data necessary to calculate that reporting period's Potable Water GPCD; and

(3) Calculations showing the reporting period's Potable Water GPCD is less than or equal to that period's Biennial GPCD Target, or Highest Acceptable Bound when the period's Potable Water GPCD has been weather-adjusted.

Compliance will be evaluated in relation to the Compliance Table below and relative progress toward the goal will be acknowledged in Council Compliance Reports. For signatory agencies signing the MOU after July 1, 2009, the compliance table will be read as five increments with reporting goals relative to their 1st through 5th Compliance reports.

Compliance Table

Year	Compliance Report	Target (% Baseline)	Highest Acceptable Bound (%Baseline)
2010	1	96.4	100
2012	2	92.8	96.4
2014	3	89.2	92.8
2016	4	85.6	89.2
2018	5	82	82

Appeals
An appeals/ adjustment process will be available, as outlined in the MOU Compliance Policy, for substantiated exceptional impacts to GPCD such as exceptional use of potable water for wildfire suppression and significant changes to a signatory's economic or customer demographics.

Signatories that signed the MOU prior to 1997 (the beginning of the Baseline Period), and that can substantiate significant investments in conservation leading to declines in water consumption as measured by GPCD, may file an appeal to adjust the baseline period to reflect per capita water demands in the period prior to their signing the MOU.

GPCD Calculation Refinement
CUWCC GPCD subcommittee shall provide, no later than December 31, 2009, acceptable methods retail water agencies may use when weather-normalizing data for compliance with this BMP. Additional methods or revisions to these methods may be approved by the Steering Committee from time-to-time.

EXHIBIT 2. CALIFORNIA URBAN WATER CONSERVATION COUNCIL

As Amended on December 10, 2008

1. The California Urban Water Conservation Council (the "Council") will be comprised of a representative of each of the signatories to the MOU.

2. The Council's responsibilities and authorities include:

   a. Recommending study methodologies for Best Management Practices ("BMPs"), including procedures for assessing the effectiveness and reliability of urban water conservation measures.

   b. Developing guidelines including discount rate to be used by all signatories in computing BMP benefits and costs pursuant to Exhibit 3.

   c. Reviewing and modifying the economic principles set forth in Exhibit 3.

   d. Collecting and summarizing information on implementation of BMPs and Potential Best Management Practices ("PBMPs").

   e. Adopting or modifying BMPs and PBMPs lists.

   f. Adopting or modifying reliable water conservation savings data for BMPs.

   g. Adopting or modifying the schedules of implementation for existing and new BMPs.

   h. Adopting or modifying the schedules for research and demonstration projects for BMPs and PBMPs.

   I. Coordinating and/or making recommendations regarding BMPs study and demonstration projects.

   j. Accepting or denying requests for additional parties to join the MOU and assigning additional parties to one of the three signatory groups as described in Section 1.3 of the MOU.

   k. Reviewing and modifying report formats.

   l. Making annual reports to the State Water Resources Control Board and the Council Members on the above items based on the format described in Exhibit 5.

   m. Within two years of the initial signing of this MOU, developing and implementing procedures and a funding mechanism for independent evaluation of the MOU process at the Council and signatory levels.

   n. Undertaking such additional responsibilities as the Members may agree upon.

3. The Council will make formal reports to the State Water Resources Control Board and to the governing bodies of all Council Members. Such reports shall include a formal annual written report. Other reports such as status reports and periodic updates may be prepared as deemed appropriate by the Council. Any Member of the Council will be entitled to review draft reports and comment on all reports. Such comments shall be included in any final report at the Member's request.

4. It is anticipated that the Council will develop a committee structure, which will include a Membership Committee as described in Section 7.2 of the MOU. A Board of Directors and one or more technical committees may also be needed.

5. For purposes of the Council, signatories will be divided into three groups: water suppliers ("Group 1"), public advocacy organizations ("Group 2") and other interested groups ("Group 3") as those terms are defined in Section 1 of the MOU. Members of Groups 1 and 2 shall be Signatory members of the Council and shall possess all voting rights. Members of Group 3 shall be Signatory members and shall not have voting rights, but shall act in an advisory capacity to the Council. Beginning January 1, 2004 members shall become Full Members of the Council upon payment of the annual assessment as invoiced by the Council according to Section 11.01 of the Council's Bylaws. Full members shall be eligible to receive all services and benefits available from the Council's resources. For Group 2 members, payment shall mean payment in cash and/or in kind services. Officers and members of the Council Board of Directors shall be Full Members in good standing.

6. Decisions by the Council to undertake additional responsibilities; to modify the MOU itself; or to modify Exhibits 2 or 3 require the following:

   a. The Council will provide notice to all signatories giving the text of the proposed action or modification at least 60 days in advance of the vote by the Council.

   b. To pass the action or modification, there must be a vote in favor of the action or modification by at least 2/3 of the members of Group 1 voting, including votes made in person or in writing, and a vote in favor of the action or modification by at least 2/3 of the members of Group 2 voting, including votes made in person or in writing.

7. All other modifications and Council actions shall be undertaken as follows: There must be a vote in favor of the modification or action by a simple majority of the members of Group 1 voting, including votes made in person or in writing, and a vote in favor of the modification or action by a simple majority of the members of Group 2 voting, including votes made in person or in writing.

EXHIBIT 3. PRINCIPLES TO GUIDE THE PERFORMANCE OF BMP ECONOMIC (COST-EFFECTIVENESS) ANALYSIS

Amended April 8, 1998

1. The total cost-effectiveness of a conservation measure will be measured by comparing the present value of the benefits of the measure listed in paragraph 3 below to the present value of the costs listed in paragraph 4. The measure will be cost-effective if the present value of the benefits exceeds the present value of the costs.

2. The cost-effectiveness of a conservation measure to the water supplier will be measured by comparing the present value of the benefits described in paragraph 5 to the present value of the costs described in paragraph 6. The measure will be cost-effective if the present value of the benefits exceeds the present value of the costs.

3. Total benefits exclude financial incentives received by water suppliers or by retail customers. These benefits include:

   a. avoided capital costs of production, transport, storage, treatment, wastewater treatment and distribution capacity.

   b. avoided operating costs, including but not limited to, energy and labor.

   c. environmental benefits and avoided environmental costs.

   d. avoided costs to other water suppliers, including those associated with making surplus water available to other suppliers.

   e. benefits to retail customers, including benefits to customers of other suppliers associated with making surplus water available to these suppliers.

4. Total program costs are those costs associated with the planning, design, and implementation of the particular BMP, excluding financial incentives paid either to other water suppliers or to retail customers. These costs include:

   a. capital expenditures for equipment or conservation devices.

   b. operating expenses for staff or contractors to plan, design, or implement the program.

   c. costs to other water suppliers.

   d. costs to the environment.

   e. costs to retail customers.

5. Program benefits to the water supplier include:

   a. costs avoided by the water supplier of constructing production, transport, storage, treatment, distribution capacity, and wastewater treatment facilities, if any.

b. operating costs avoided by the water supplier, including but not limited to, energy and labor associated with the water deliveries that no longer must be made.

c. avoided costs of water purchases by the water supplier.

d. environmental benefits and avoided environmental costs.

e. revenues from other entities, including but not limited to revenue from the sale of water made available by the conservation measure and financial incentives received from other entities.

6. Program costs to the water supplier include:

a. capital expenditures incurred by the water supplier for equipment or conservation devices.

b. financial incentives to other water suppliers or retail customers.

c. operating expenses for staff or contractors to plan, design, or implement the program.

d. costs to the environment.

7. The California Urban Water Conservation Council ("Council") will be responsible for developing guidelines that will be used by all water suppliers in computing BMP benefits and costs. These guidelines will include, but will not be limited to, the following issues:

a. analytical frameworks.

b. avoided environmental costs.

c. other impacts on the supply system that may be common to many water suppliers.

d. time horizons and discount rates.

e. avoided costs to non-water supply agencies.

f. benefits and costs to retail customers.

g. benefits of water made available to other entities as a result of conservation efforts.

These guidelines will recognize the uniqueness of individual water suppliers and will therefore not impose excessive uniformity.

[Note: In September 1996, the Council adopted “Guidelines for Preparing Cost-Effectiveness Analyses of Urban Water Conservation Best Management Practices”]

8. Within these guidelines, each water supplier will be responsible for analyses of the cost-effectiveness of particular BMPs on its system. These analyses will be reviewed by the Council.

9. The Council will also be responsible for periodically reviewing the overall framework set forth in this Exhibit.

EXHIBIT 4. SWRCB ANNUAL REPORT OUTLINE

As Amended on December 10, 2008

I. Administration and Project Funding

II. Council Activity on Best Management Practices

BMP Reporting on Council Signatories
- Revised BMP Reporting Forms
- BMP Biannual Reporting Results
- BMP Biannual Data Highlights

BMP Exemption Policy
BMP Modifications

III. Technical Assistance

IV. General Outreach

Tables

Table 1: Council MOU Urban Water Conservation Best Management Practices
Table 2: Comparison of Retail and Wholesale BMP Reporting Requirements
Table 3: Conservation Milestones
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Figures

Figure 1: Number of Water Suppliers Filing BMP Reports per Annum
Figure 2: Year-by-Year Council Signatory Growth
Figure 3: CUWCC Signatory Member Water Use as a Percentage of California Urban Water Use
Figure 4: Percentage of CUWCC Membership Submitting BMP Reports Historical Period to Date
Figure 5: Percentage of Reporting Units in Compliance with BMPs Historical Period to Date

Attachments

Attachment A: Council Signatories as of End of Year
Attachment B: Strategic Plan
Attachment C: Council Budget
Attachment D: Council Organization Chart
Attachment E: Board of Directors Officers
Attachment F: Signatory Agencies that Submitted Some or All BMP Reports during Reporting Period
Attachment G: Signatory Agencies Not Submitting BMP Reports during Reporting Period

EXHIBIT 5. BYLAWS

As Amended on December 10, 2008

ARTICLE I
Recitals and Definitions

Section 1.01. Name of Corporation. The name of this corporation shall be California Urban Water Conservation Council. In the balance of these Bylaws the corporation shall be referred to as the "Council."

Section 1.02. The Council Is Nonprofit. The Council has been formed pursuant to the California Nonprofit Corporation Law as a public benefit corporation.

Section 1.03. Specific Purpose. The specific and primary purpose of the Council is to implement the MOU, as defined in Section 1.05(c), below, which has been executed by and among signatories comprised of the water suppliers, public advocacy organizations and other interested groups that are more particularly described in Section 3.01, below. Without limiting the foregoing, the Council shall make formal reports to the State Water Resources Control Board and to the governing bodies of all Council Members. Such reports shall include a formal annual written report. Other reports, such as status reports and periodic updates, may be prepared as deemed appropriate by the Council.

Section 1.04. Restrictions. All policies and activities of the Council shall be consistent with and limited by the MOU and shall also be consistent with: (a) applicable federal, state and local antitrust and trade regulation laws; (b) applicable tax-exemption requirements, including the requirement that no part of the Council's net earnings inure to the benefit of any private individual; and (c) all other legal requirements including the California Nonprofit Corporation Law under which the Council is incorporated and to which its operations are subject, as amended from time to time.

Section 1.05. Defined Terms. The following terms shall, when used in these Bylaws, have the following meanings:

(a) Chair and Vice Chair mean and refer to the persons who, from time to time, occupy those positions on the Board of Directors that are analogous to the positions of Chair and Vice Chair of a nonprofit corporate board. The Chair and Vice Chair shall have the duties and responsibilities more particularly defined in Section 9.05, below.

(b) Council means and refers to the California Urban Water Conservation Council.

(c) Full Member means a Signatory Member of the Council who has paid the current annual assessment in full.

(d) Member means and refers to an organization that is a signatory to the MOU. Council Members shall be assigned to one of the three group classifications of membership more particularly defined in Section 3.03, below. When used generally, Member means Signatory Member. A Full Member of the Council is a Signatory Member entitled to full Council privileges and benefits.

(e) MOU means and refers to the Memorandum of Understanding Regarding Urban Water Conservation in California dated September 1991, and as the MOU may be amended from time to time.

(f) Plenary, Session or Plenary Meeting means and refers to a meeting of the Council Members (see Article V, below).

(g) Signatory Member means an organization that is a signatory to the MOU.

(h) Signatory and Signatory Organization mean and refer to qualified organizations which have executed the MOU and which have been accepted for membership in the Council in accordance with Section 3.02, below.

(i) Board of Directors means the Committee constituted and empowered as set forth in Article VII, below. The Board of Directors shall have the duties and powers of the board of directors of a California nonprofit public benefit corporation (California Corporations Code section 5210) subject to the limitations imposed on the Board of Directors by the California Nonprofit Public Benefit Corporation Law, the MOU and these Bylaws (see particularly Article VI, below, entitled "Actions Requiring Council Member Approval"). Accordingly, the Board of Directors is not a committee as the word "committee" is defined in Article X, below, or in California Corporations Code section 5110 et seq.

ARTICLE II
Principal Office

Section 2.01. Location of Principal Office. The principal office of the Council will be located at such place within the State of California as the Board of Directors may from time to time designate by resolution. Currently, the address of the principal office is 455 Capitol Mall, Suite 703, Sacramento, California.

ARTICLE III
Council Membership

Section 3.01. Members of the Council. The membership of the Council shall be comprised of, and limited to, organizations that are signatories to MOU. Eligible signatories are: (1) water suppliers ("Group 1 Signatories"); (2) public advocacy organizations ("Group 2 Signatories"); and (3) other interested groups ("Group 3 Signatories"). Those three Groups are more particularly defined in Section 3.03, below.

Section 3.02. Application for Membership. As provided in Section 7.2 of the MOU, the Council shall have a Membership Committee which shall have the responsibility of evaluating new signatory applicants for Membership in the Council and recommending to the Council approval or disapproval of the applicant and the recommended category of membership for the applicant. The Council may adopt and use an application form to be completed by MOU Signatory Organizations in order to guide the Council's Membership Committee in making recommendations to the Council regarding the proper Group classification for new signatories.

The Membership Committee shall consider applications and decide on the appropriate classification of new Signatory Organizations. Following action by the Membership Committee, the Committee's action shall be ratified by the Council Members at the Plenary meeting next following admittance of the new member organization to the Council. As of the date of the adoption of these Bylaws, the Members of the Council and their respective Group classifications (which are ratified and affirmed by the Members' approval of these Bylaws) are as set forth in Exhibit "5A".

Section 3.03. Classifications of Membership; Definition of Signatory Groups. The Council has three classes of membership comprised of the signatory groups identified in subparagraphs (a) thorough (c) of this Section 3.03:

(a) Water Suppliers -- Group 1 Signatories. Group 1 Signatories include and are limited to "water suppliers". A water supplier is any entity, including a city, which delivers or supplies water for urban use at the wholesale or retail level.

(b) Public Advocacy Organizations -- Group 2 Signatories. Group 2 Signatories include and are limited to public advocacy organizations. A "public advocacy organization" is defined to mean a nonprofit organization exempt from tax and described in either Internal Revenue Code section 501(c)(3) or 501(c)(4); which has as one of its significant missions and exempt purposes, environmentally sound management and conservation of California's waterways and water resources and/or protection of the environment; and which has a clear, but non-vested, interest in advancing the Best Management Practices ("BMPs") of the MOU. No public advocacy organization may be admitted to the Council's membership if such organization has a primary function of representing trade, industrial or utility entities.

(c) Other Interested Groups -- Group 3 Signatories. Group 3 Signatories include other organizations, approved for membership as provided in Section 3.02, above, which have a strong interest in, and commitment to, the purposes of the Council, but which are not eligible for inclusion in either Group 1 or Group 2.

Section 3.04. Representatives of Signatory Organizations. Each MOU Signatory shall designate one representative to the Council. The Signatory Organization shall be responsible for informing the Council of the identity of its designated representative at all appropriate times. Signatories may also name substitute representatives to attend meetings in place of the designated representative. Substitute representatives have the same voting rights as the Signatory's designated representative, but may not serve as an officer of the Council. Only one representative from any Signatory Organization may vote on any matter presented to the Council Members, to the Board of Directors, or as the designated member of any committee appointed and constituted in accordance with Article X, below; provided, however, that the same person can be designated as the representative or as a substitute representative of more than one Signatory Organization within the same Group classification. Designated and substitute representatives of Council Members are referred to in these Bylaws as "Representatives."

Section 3.05. Term of Membership. Each organization that signs the MOU and is admitted to membership in the Council shall remain a Member until the organization no longer qualifies for membership under Section 3.01, above or wishes to withdraw. Organizations listed in Exhibit "5A" shall be deemed to meet the qualification requirements of Section 3.01.

ARTICLE IV
Membership Voting

Section 4.01. Member Voting Rights.

(a) Generally. Only Group 1 Signatory Members and Group 2 Signatory Members have voting rights with respect to matters requiring the approval of Council Members under the MOU and these Bylaws (see particularly Article VI, below). Collectively, those two Groups are referred to as the "Voting Members" whenever these Bylaws discuss the voting rights of Council Members. On each matter submitted to a vote of the Voting Members, whether at a meeting of the membership called and held pursuant to the provisions of these Bylaws or otherwise, each Voting Member shall be entitled to cast one vote. Group 3 Signatory Members have no voting rights.

(b) Required Vote for Valid Action. Unless these Bylaws specifically confer authority on Group 1 Signatory Members or Group 2 Signatory Members to take unilateral action with respect to a particular matter (such as caucus votes to fill Group vacancies on the Board of Directors), any action requiring the vote or approval of the Voting Members of the Council shall require the affirmative vote of a majority of each of Group 1 and Group 2 Signatory Members, as to those actions identified in Section 6.02 (b), below, and a two-thirds affirmative vote of each of Group 1 and Group 2 Signatory Members as to those actions identified in Section 6.02(a), below. As to any other action or approval of the Voting Members not specifically identified in Section 6.02, below, the required affirmative vote shall be a majority of each of Group 1 and Group 2 Signatory Members.

Section 4.02. Manner of Casting Votes.

(a) Voting at a Meeting or by Written Ballot. Voting by Group 1 and Group 2 Signatory Members may be by voice or by written ballot solicited in accordance with section 5513 of the California Corporations Code, and Section 4.03 below. The vote on any other issue properly before a Plenary meeting of the Council Members shall be conducted by secret ballot when determined by the chairman of the meeting, in his or her discretion, or when requested by 10 percent of the Voting Members present at the meeting.

(b) Proxy Voting. Proxy voting shall be permitted on any matter put to the vote of the Council Members subject to the following restrictions:

(i) If a Group 1 or Group 2 Signatory Organization cannot be represented at a Plenary meeting by the Group's designated Representative or substitute Representative, the Group can, by written proxy, authorize another Representative of a Signatory Organization within the same Group classification to appear and vote on behalf of the absent Signatory Organization.

(ii) The proxy shall only be valid for the Plenary meeting for which it is issued, and for any adjournment thereof.

(iii) The proxy shall be in the form of a limited proxy which is defined as a proxy which instructs the proxy holder how he or she is to vote with respect to each matter which is scheduled to be presented at the Plenary for action by the Council Members.

Section 4.03. Action by Written Ballot Without a Meeting.

(a) Written Ballots, Generally. In addition to voting in person or by proxy at Council Plenaries, any matter or issue requiring the vote of the Council Members, other than the election of the Board of Directors, may be submitted to the Voting Members for a vote by use of a written ballot without the necessity of calling a Plenary of the Council Members, so long as the requirements for action by written ballot set forth in this Section 4.03 are met. The determination to seek Member approval by written ballot shall be made by a majority vote of each of Group 1 and Group 2 Representatives on the Board of Directors.

(b) Distribution of Written Ballots. In the event that any matter or issue is to be voted upon by written ballot, the Committee shall distribute the written ballot to every Voting Member at least 30 days prior to the final date the written ballots are to be received for counting.

(c) Content of Written Ballots. Any written ballot distributed to the Voting Members to vote on an issue other than the election of the Committee shall set forth the proposed action, and provide an opportunity to specify approval or disapproval of the proposal.

(d) Balloting Time Requirements. All written ballots shall also provide a reasonable time within which to return the written ballot to the Council's principal office and shall state on its face or in an accompanying notice the date by which the written ballot must be returned in order to be counted. The time fixed for the return of ballots may only be extended if the Committee notifies the Voting Members (in the balloting materials originally sent to Council Members) that the right to extend has been reserved and then for no more than two successive periods of 30 days each. The time stated for the return of written ballots can be scheduled to coincide with the date of a Plenary meeting.

(e) Requirements for Valid Action. Approval by written ballot shall be valid only when the number of votes cast by ballot within the time period specified equals or exceeds the quorum specified in Section 5.05, below, and the number of approvals equals or exceeds the number of votes that would be required to approve the action if approval was sought at a meeting of the Council Members.

(f) Solicitation Rules. Written ballots shall be solicited in a manner consistent with the requirements of Section 5.04, below, pertaining to the issuance of notice of Council Members' Plenary meetings. All solicitations of written ballots shall indicate the number of responses needed to meet the quorum requirement for valid action and shall state the percentage of affirmative votes necessary to approve the measure submitted for Council Member approval.

(g) Notification of Balloting Results. Upon tabulation of the written ballots, the Board of Directors shall notify the Council Members of the outcome of the vote immediately following the close of the balloting process and tabulation of the ballots. If the number of ballots cast is insufficient to constitute a quorum, the Board of Directors shall so notify the Council Members.

(h) Prohibition of Revocation. Once cast, a written ballot may not be revoked.

ARTICLE V
Plenary Meetings of the Council

Section 5.01. Place of Meeting. Plenary meetings of the Council Members may be conducted at any reasonable place within the State of California and at such time as may be designated by the Board of Directors in the notice of the Plenary.

Section 5.02. Annual Plenary Meeting. There shall be an annual Plenary meeting in December of each year. The date, time and location of the Plenary shall be set forth in the notice of meeting sent to the Council Members in accordance with Section 5.05, below.

Section 5.03. Other Regular Meetings. In addition to the annual Plenary meeting, there shall be three additional quarterly Plenary meetings of the Council Members on a day and at a time and place determined by the Board of Directors and communicated to all Council Members at the inception of each calendar year.

Section 5.04. Special Meetings.

(a) Persons Entitled to Call Special Meetings. A simple majority of the members of the Board of Directors, or the Chair, may call special meetings of the Council Members at any time to consider any lawful business of the Council. In addition, five percent or more of the Voting Members of the Council may request that a Plenary be convened.

(b) Procedures for Calling Special Meetings Requested by Council Members. If a special Plenary meeting is called by the Voting Members, the request shall be submitted by the requesting Council Members in writing, specifying the general nature of the business proposed to be transacted, and shall be delivered personally or sent by registered mail or by electronic transmission or by facsimile transmission to the Chair, the Vice Chair, or the secretary of the Council. The officer receiving the request shall cause notice to be promptly given to the Council Members entitled to vote, in accordance with the provisions of Section 5.05, below, that a special Plenary will be held, and the date, time and specific purpose for such meeting, which date shall be not less than 35 nor more than 90 days following the receipt of the request. If the notice calling for a special Plenary meeting is not given within the 20 days after receipt of the petitioner's request, the Council Members requesting the meeting may give the notice. Nothing contained in this subsection shall be construed as limiting, fixing, or affecting the time when a Plenary meeting of Council Members may be held when the meeting is called by action of the Board of Directors or the Chair.

Section 5.05. Notice of Meetings of the Council's Members.

(a) Generally. All notices of Plenary meetings of Council Member Meetings (whether regular or special) shall be sent or otherwise given in writing to each Member who, on the record date for notice of the meeting (as provided in Section 5.09, below) is entitled to vote thereat, in accordance with subparagraph (c) of this Section 5.05, not less than 10 nor more than 90 days before the date of the meeting. The notice shall specify the place, date, and hour of the Plenary and (i) in the case of a special Plenary meeting, the general nature of the business to be transacted, and no other business may in that case be transacted, or (ii) in the case of a regular Plenary meeting, those matters which the Board of Directors, at the time of giving the notice, intends to

present for action by the Council Members; but any proper matter may be presented at the Plenary for action by the Council Members so long as a quorum is present.

(b) Mailing of Notice. Notice of any Plenary meeting of Council Members shall be given either personally or by first-class mail, or other written communication, charges prepaid, addressed to each Member either at the address of that Member appearing on the books of the Council or the address given by the Member to the Council for the purpose of notice. If for any reason notice is given by mail and the notice is not sent by first-class, registered or certified mail, the notice shall be given not less than 20 days (nor more than 90 days) before the meeting. Notice shall be deemed to have been given at that time when delivered personally or deposited in the mail or when sent by other means of written communication.

(c) Affidavit of Mailing; Effect Thereof. An affidavit of the mailing or other means of giving any notice of any Council Plenary meeting may be executed by the secretary or the assistant secretary of the Council, and if so executed, shall be filed and maintained in the minutes book of the Council. The secretary's affidavit shall constitute prima facie evidence of the giving of notice.

Section 5.06. Quorum Requirements.

(a) A quorum of the Council Members for the purpose of conducting business at any Plenary Meeting shall be at least 30 Voting Members, provided at least 10 percent of the Group 1 Signatory Members and 10 percent of the Group 2 Signatory Members are present. In addition, when a Plenary is actually attended by less than one-third of the voting power of Council Members (but at which a quorum is present), the only matters upon which action can be validly taken are those matters the general nature of which was described in the notice of the Plenary meeting.

(b) The Council Members present at a duly held Plenary meeting at which a quorum is initially present may continue to transact business until adjournment, notwithstanding the withdrawal of enough Council Members to leave less than a quorum, if any action taken (other than adjournment) is approved by at least (i) a majority of the Council Members required to constitute a quorum; and (ii) if applicable, by such greater percentage or class vote as may be required by these Bylaws (see Section 6.02, below). For example, if a Plenary Meeting is called and is initially attended by 31 Voting Members and prior to adjournment two Voting Members leave the Plenary (thus leaving less than a quorum), a motion to approve the annual budget for the Council could nevertheless be entertained and valid action taken.

(c) When Council Member approval is sought by written ballot (rather than at a Plenary) the minimum quorum requirement is satisfied when written ballots are returned to the Council within the prescribed balloting period from both (i) 30 or more Voting Members of the Council, and (ii) at least ten percent (10%) of the Group 1 Signatory Members and ten percent (10%) of the Group 2 Signatory Members. In addition to satisfying the minimum quorum requirement for valid action, the vote by written ballot must also be approved by the requisite percentage of Group 1 and Group 2 Signatory Members (see Sections 4.01(b) and 6.02).

Section 5.07. Adjourned Meeting. Any Plenary meeting of the Council, annual or special, whether or not a quorum is present, may be adjourned to another time and/or place (but not for more than 45 days) by the vote of the majority of the Council Members represented at the Plenary, either in person or by proxy. Unless there is an absence of a quorum (in which case no

other business may be transacted at that meeting except as provided in Section 5.06(b) above), the Voting Members attending the reconvened Plenary may take any action that might have been transacted at the original meeting. When a Plenary meeting of the Council's Members is adjourned to another time or place, notice need not be given of the new meeting if the time and place thereof are announced at the Plenary at which the adjournment is taken. Notwithstanding the foregoing, if after adjournment a new record date is fixed for notice or voting, a notice of the rescheduled meeting must be given to each Member who on the record date for notice of the meeting is entitled to vote thereat.

Section 5.08. Waiver of Notice or Consent by Absent Council Members.

(a) Waiver and Consents, Generally. If decisions are made by the Council Members at a Plenary where a quorum is present, but for which proper notice was not given to all Council Members for whatever reason, the decisions made at that Plenary will be valid if, either before or after the meeting, each Member entitled to vote who was not present at the meeting consents to the meeting by signing a written (i) waiver of notice; (ii) a consent to holding the Plenary; or (iii) an approval of the minutes of the Plenary. The waiver of notice need not specify the purpose or general nature of business to be transacted at such meeting unless action is taken or proposed to be taken on matters specified in Section 5.05(b), above, in which case, the waiver of notice must state the general nature of the matter. All such waivers, consents or approvals shall be filed with the Council records or be made part of the minutes of the meeting.

(b) Effect of Attendance at Plenary. Attendance by a Council Member Representative at a Plenary meeting shall also constitute a waiver of notice of that Plenary with respect to that Member, except when a member Representative attends the Plenary for the sole purpose of objecting at the beginning of the Plenary to the transaction of any business due to the inadequacy or illegality of the notice.

ARTICLE VI
Actions Requiring Council Member Approval

Section 6.01. Council Actions Requiring Member Approval. In addition to those matters requiring approval of the Members under the California Nonprofit Public Benefit Corporation Law or other applicable laws, the following actions of the Council shall require approval of the Voting Members:

(a) Recommending to Signatory Organizations study methodologies for Best Management Practices ("BMPS"), including procedures for assessing cost effectiveness and reliability of urban water conservation measures.

(b) Development of guidelines, including discount rates, to be available to all signatories in computing BMP benefits and costs pursuant to Exhibit 3 of the MOU.

(c) Reviewing and modifying the economic principles set forth in Exhibit 3 of the MOU.

(d) Collecting and summarizing information on implementation of BMPs and Potential Best Management Practices ("PBMPs").

(e) Adopting or modifying BMP and PBMP lists.

(f) Adopting or modifying reliable water conservation savings data for BMPs.

(g) Adopting or modifying the schedules of implementation for existing and new BMPs.

(h) Adopting or modifying the schedules for research and demonstration projects for BMPs and PBMPs.

(i) Coordinating and/or making recommendations regarding BMP study and demonstration projects.

(j) Approving or disapproving Membership Committee recommendations for the addition of parties as Signatory Organizations to the MOU and assigning additional parties to one of the three Signatory groups as described in Section 1.3 of the MOU, or as designated by the Members of the Council (see Section 3.02, above).

(k) Reviewing and modifying report formats for agency implementation programs.

(l) Making annual reports to the State Water Resources Control Board and the Council Members on the above items based on the format described in Exhibit 5 of the MOU.

(m) Undertaking such additional responsibilities as the Members of the Council may agree upon.

Section 6.02. Required Member Vote to Approve Various Actions. The following Member approval requirements apply to particular actions of the Council, as listed in subparagraphs (a) and (b), of this Section 6.02:

(a) Actions Requiring Two-Thirds Vote. Any decision by the Council to (i) undertake additional responsibilities not currently described in the MOU and its Exhibits; (ii) modify or amend the MOU itself; (iii) modify Exhibits 2 or 3 of the MOU; or (iv) develop guidelines, including discount rates, to be available to all Signatories in computing BMP benefits and costs pursuant to Exhibit 3 of the MOU shall require both of the following:

(1) Written notification by the Council to all Members, giving the text of the proposed action or modification, at least 60 days in advance of the date of a regular or special meeting called by the Council to vote on the matter; and

(2) Approval of the proposed action or modification by the affirmative vote of at least two-thirds of each of the Group 1 and Group 2 Signatory Organizations actually voting on the matter.

Although a meeting shall be called to coincide with the final date for return of ballots, approval of the Voting Members shall be solicited by use of a written ballot in accordance with Section 4.04, above.

(b) Actions Requiring Majority Member Approval. The following actions shall require the affirmative vote of at least a simple majority of each of the Group 1 and Group 2 Signatory Organizations actually voting on the matter:

(i) Approving the annual budget for the Council following presentation of the budget by the Board of Directors;

(ii) Adopting or modifying Best Management Practices and Potential Best Management Practices;

(iii) Approval and adoption of Council Strategic Plans;

(iv) Accepting or denying recommendations of the Membership Committee for the addition of parties as Signatory Organizations to the MOU and thereby the admission of the proposed Signatory Organization to one of the three classes of Council Membership, following review of the prospective applicant and recommendation of approval or denial by the Council Membership Committee;

(v) Adoption of Council policies, procedures and rules consistent with these Bylaws and the MOU; and

(vi) Approval of amendments to these Bylaws, other than any amendment to subparagraph (a), above.

Section 6.03. Right of Members to Comment on Council Reports. Any Member of the Council shall be entitled to review draft reports prepared by the Council (see Section 1.03, above) and to comment on all reports. Such comments shall be included in any final report at the request of the Member submitting the comments.

ARTICLE VII
Board of Directors of the Council

Section 7.01. General Corporation Powers. Subject to the requirement of Council Member approval of certain actions pursuant to these Bylaws or by State law, the business and affairs of the Council shall be vested in and exercised by the Council's Board of Directors which is referred to herein as the “Board of Directors”. The Board of Directors may delegate the management of the activities of the Council to any person or persons, management company or committee, provided that notwithstanding any such delegation the activities and affairs of the Council shall continue to be managed and all corporate powers shall continue to be exercised under the ultimate direction of the Board of Directors. All elected members of the Board of Directors shall be Full Members of the Council in good standing as defined in Section 11.01 of these bylaws.

Section 7.02. Composition, Selection and Term.

(a) Composition of the Board of Directors. The Board of Directors shall consist of the following persons: Group 1 Representatives shall select from among themselves up to eight MOU signatories whose Representatives shall serve as voting members of the Board of Directors. Group 2 Representatives shall select from among themselves up to eight MOU signatories whose Representatives shall serve as voting members of the Board of Directors. Advisory members of the Council representing Group 3 MOU signatories shall select, from among themselves, up to four MOU signatories, whose Representatives shall serve as non-voting members of the Board of Directors. In addition, all officers of the Council shall be members of the Board of Directors and have the same voting rights on the Board of Directors as their respective Groups. Finally, the following persons shall serve as non-voting ex-officio members of the Board of Directors: (i) the outgoing Chair shall be a Board of Directors member for the calendar year immediately following his or her term of office; and (ii) one designee from each of those State and Federal agencies selected by the Board of Directors as a result of the agencies' involvement in California water allotments, distribution, programs and/or policies shall serve as ex-officio members of the Board of Directors. Currently, the California Department of Water Resources and the U.S. Bureau of Reclamation have designees to the Board of Directors.

(b) Terms of Office. Board of Directors members shall hold office for a term of two years. The terms will be staggered with half of the positions of each group being elected each year. Unlimited consecutive terms may be served.

(c) Nominating and Election Process for Board of Directors Candidates. The Group 1 Signatory Members of the Council and the Group 2 Signatory Members of the Council shall nominate from among themselves candidates for election to the Board of Directors in person or in writing at the third Plenary of the year prior to the start of a new two-year term. Any nomination must be seconded by a Voting Member of the same Group, which second can be made in person or in writing, and accepted by the nominee in person or in writing to be included on the ballot. The ballots of Group 1 and 2 candidates for the Board of Directors shall be included in the Plenary Packet of the fourth and final Plenary of the year. All written nominations, seconds, and acceptances by candidates must be received by the Council prior to the start of the third Plenary.

The Voting Members of the Council shall vote on the ballot to elect Board of Directors members to represent their respective Groups at the final Plenary of each year. Cumulative voting (casting all four votes for one party) will not be permitted in any election of Board of Directors members. Absentee ballots are permitted so long as the absentee ballot is received by the Council prior to the start of the final Plenary at which the election is conducted. The successful candidates shall assume office starting January 1 of the following year. Votes may be made in person or in writing. Group 1 and 2 Council Members may vote for up to four candidates from their respective Groups. The top four candidates from Group 1 and the top four candidates from Group 2, as ranked by the number of votes received, shall be elected to the Board of Directors. If either Group 1 or Group 2 nominates less than four candidates, all candidates from that Group shall be elected to the Board of Directors.

Section 7.03. Resignation and Removal from Office; Filling of Vacancies

(a) Resignation. Any member of the Board of Directors may resign at any time, effective upon giving written notice to the Executive Director or the Chair or Vice Chair, unless the resigning

member's notice specifies a later time for the effectiveness of the resignation. If the resignation is to be effective at some future time, a successor may be elected or designated (as the case may be) to fill the vacancy when the resignation becomes effective.

(b) Removal. A sitting member of the Board of Directors may only be removed from office for cause. "Cause" shall be defined as failure of the Board of Directors member to attend at least two consecutive duly noticed meetings of the Board of Directors, and failure to adequately justify to the Committee the reason for the member's absence.

(c) Filling of Vacancies on the Board of Directors . If a vacancy occurs in any position on the Board of Directors other than Chair or Vice Chair by virtue of the death, resignation or removal of a Board of Directors member, the Signatory Organization whose Representative created the vacancy shall select a replacement Representative to serve on the Board of Directors for the unexpired term, subject to approval by the Board of Directors. If a vacancy occurs on the Board of Directors by virtue of a Signatory Organization's decision to withdraw from participation on the Board of Directors, the vacancy shall be filled from among Signatory Organizations that are of the same Group as the resigned Signatory Organization by a caucus of the withdrawing Signatory Organization's Council Member Group conducted either at the next Plenary or by telephone conference call, so long as all members of the Group are notified of the telephone conference and have an opportunity to participate. When a caucus is conducted by telephone conference, the actions taken shall be affirmed at the next Plenary. If a vacancy occurs for any reason in the position of Chair or Vice Chair, for reasons other than expiration of the holder's term of office, the vacancy shall be filled by nomination of the Signatory Group of which the resigned Chair/Vice Chair was a member. If a vacancy occurs in the ex-officio positions held by any State or Federal agency (see Section 7.02(a)), the vacancy shall be filled by the governmental agency with the power of designation.

Section 7.04. Number and Place of Meetings. The Chair of the Council, and any other persons designated by the Board of Directors, may call meetings of the Board of Directors. At the annual Plenary meeting, the Board of Directors shall adopt a schedule of regular meeting dates for the following year. Once approved, the scheduled dates may be modified, or meetings initially scheduled to be conducted in person may be changed to a meeting conducted by use of a conference telephone or other permitted electronic media by action of the Board of Directors. Except for meetings conducted in accordance with Section 7.05, below, regular and special meetings of the Board of Directors may be held at any place designated from time to time by resolution of the Board of Directors and stated in the notice of the meeting. In the absence of such designation, regular meetings shall be held at the principal office of the Council.

Section 7.05. Meetings by Conference Telephone or Other Electronic Means. Members of the Board of Directors may participate in a meeting through the use of conference telephone, electronic video screen communications, or other communications equipment. Participation in a meeting through use of a conference telephone pursuant to this subdivision constitutes presence in person at that meeting as long as all members participating in the meeting are able to hear one another. Participation in a meeting through use of electronic video screen communication or other communications equipment (other than conference telephone) constitutes presence in person at the meeting if all of the following conditions are satisfied:

(a) Each member of the Board of Directors participating in the meeting can communicate with all of the other members concurrently;

(b) Each member of the Board of Directors is provided the means of participating in all matters before the Board of Directors including, without limitation, the capacity to propose, or to interpose an objection to a specific action to be taken by the Council; and

(c) The Council adopts and implements some means of verifying both of the following: (i) that a person participating in the meeting is a Board of Directors member or other person entitled to participate in the Board of Directors meeting; and (ii) that all actions of, or votes by, the Board of Directors are taken or cast only by the Board of Directors members and not by persons who are not Board of Directors members.

Section 7.06. Notice of Meetings.

(a) Manner of Giving Notice. Notice of the time and place of the annual meeting and any special meetings of the Board of Directors shall be given to each Board of Directors member by one of the following methods: (i) by personal delivery of written notice; (ii) by first-class mail, postage prepaid; (iii) by telephone communication, either directly to the Board of Directors member or to a voice messaging system or other system or technology designed to record and communicate messages; or (iv) by facsimile, electronic mail or other electronic means; provided however that if notice is given by any means other than first-class mail or direct communication with a Board of Directors member, the notice shall also be confirmed in writing mailed or sent by facsimile or electronic transmission to the Board of Directors member's address, facsimile telephone number, or electronic mail address as shown on the records of the Council. Notice of a meeting need not be given to any Board of Directors member who signs a written waiver of notice or a written consent to holding the meeting or an approval of the minutes thereof, whether before or after the meeting, or to any Board of Directors member who attends the meeting without protesting, prior thereto or at commencement of the meeting, the lack of notice to such Board of Directors member. All such waivers, consents and approvals shall be filed with the Council records or made a part of the minutes.

(b) Time Requirements. Notices sent by first-class mail shall be deposited into a United States mailbox at least four days before the time set for the meeting. Notices given by other permitted means must be must be given at least 48 hours prior to the scheduled time of the meeting.

(c) Content of Notices. The notice shall state the date, time, place, and the general purpose of the meeting.

Section 7.07. Quorum Requirements. A quorum of the Board of Directors shall be at least fifty percent of each of Group 1 and Group 2 Board of Directors members.

Section 7.08. Waiver of Notice. The transaction of any meeting of the Board of Directors, however called and noticed or wherever held, shall be as valid as though taken at a meeting duly held after regular call and notice, if (a) a quorum is present; and (b) either before or after the meeting, each of the Board of Directors members not present, individually or collectively,

signs a written waiver of notice, a consent to the holding of the meeting, or an approval of the minutes thereof. The waiver of notice or consent need not specify the purpose of the meeting. All waivers, consents, and approvals shall be filed with the Council records or made a part of the minutes of the meeting and shall have the same force and effect as a unanimous vote of the Board of Directors. The requirement of notice of a meeting shall also be deemed to have been waived by any Board of Directors member who attends the meeting without protesting before or at its commencement about the lack of notice.

Section 7.09. Adjournment. A majority of the Board of Directors members present, whether or not constituting a quorum, may adjourn any meeting to another time and place or may adjourn for purposes of reconvening in executive session to discuss and vote upon personnel matters, litigation in which the Council is or may become involved and orders of business of a similar nature. If the meeting is adjourned for more than 24 hours, notice of adjournment to any other time or place shall be given prior to the time of the adjourned meeting to the Board of Directors members who were not present at the time of the adjournment. Except as provided, above, notice of adjournment need not be given.

Section 7.10. Action Without a Meeting. Any action required or permitted to be taken by the Board of Directors may be taken without a meeting, if all members of the Board of Directors, individually or collectively, consent in writing to that action. Such action by written consent shall have the same force and effect as a unanimous vote of the Board of Directors. Such written consent or consents shall be filed with the minutes of the proceedings of the Board of Directors. For purposes of this Section, "all members of the Board of Directors" shall not include any "interested director" as defined in California Corporations Code section 5233. Section 5233 of the Code defines an interested director as a director who has a material financial interest in a transaction involving the corporation he or she is serving, unless the transaction is expressly excluded from the definition of a “self dealing transaction” by other provisions of the same Code Section. See also Article XII, below (“Conflicts of Interest”).

Section 7.11. No Compensation for Board of Directors Members. Unless otherwise established by resolution of the Board of Directors, Members of the Board of Directors of the Council shall not be entitled to compensation for their services as such, although they may be reimbursed for such actual expenses as may be determined by resolution of the Board of Directors to be just and reasonable. Expenses shall be supported by an invoice or voucher acceptable to the Board of Directors.

Section 7.12. Actions of the Board of Directors. All Board of Directors actions require that a quorum be present, that a majority of the Board of Directors members voting from Group 1 vote in favor of the action, and that a majority of the Board of Directors Members voting from Group 2 vote in favor of the action. The Board of Directors may also act without meeting, provided that (a) the taking of the vote has previously been authorized by the Board of Directors; (b) the vote has received seven days’ notice by first class mail or 48 hours notice delivered personally or by telephone or electronic media; and (c) the proposed action is approved by fifty percent or more of the Group 1 and fifty percent or more of the Group 2 members of the Board of Directors voting. The Board of Directors may take action without seeking Voting Member approval only where the Voting Members have delegated such authority to the Board of Directors and only to the extent that the action is consistent with the then current version of the MOU.

ARTICLE VIII
Duties and Powers of the Board of Directors and Limitations Thereon

Section 8.01. Specific Powers. Without prejudice to the general powers of the Board of Directors set forth in Section 7.01, above, the Board of Directors shall have the following responsibilities and powers:

(a) Exercise all powers vested in a board of directors of a nonprofit public benefit corporation under the laws of the State of California.

(b) Remove all officers of the Council, and other Council employees; prescribe any powers and duties for such persons that are consistent with law, the Articles of Incorporation and these Bylaws; and fix employee compensation. Any officer removed by action of the Board of Directors shall be filled by action of the Council Members at the next Plenary meeting in accordance with Section 9.03, below.

(c) Appoint such agents and employ such other employees, including attorneys and accountants, as it sees fit to assist in the operation of the Council, and to fix their duties and to establish their compensation.

(d) Contract for and pay premiums for insurance and bonds (including indemnity bonds) which may be required from time to time by the Council.

(e) Pay all taxes and charges incurred by or levied against the Council.

(f) Delegate its duties and powers hereunder to the Executive Director, to officers of the Council or to committees established by the Board of Directors, subject to the limitations expressed in Sections 7.01, above.

(g) Prepare or cause to be prepared budgets, and maintain a full set of books and records showing the financial condition of the affairs of the Council in a manner consistent with generally accepted accounting principles, and at no greater than annual intervals prepare a financial report, a copy of which shall be delivered to each Member of the Council as provided in Article XI, below.

(h) Appoint such committees as it deems necessary from time to time to implement the affairs of the Council in accordance with Article X, below.

(i) Open bank accounts and borrow money on behalf of the Council and designate the signatories to such bank accounts.

(j) Bring and defend actions on behalf of the Council so long as the action is pertinent to the operations of the Council.

Section 8.02. Limitations on Powers.

(a) Actions Requiring the Consent or Approval of the Voting Members. The Board of Directors shall have no authority to act with respect to any matter identified in Section 6.01, above ("Council Actions Requiring Member Approval"), unless the Members of the Council have taken action at a Plenary to specifically confer on the Board of Directors authority to act with respect to a particular matter, and then only to the extent that the action is consistent with the then current version of the MOU. The responsibilities and powers described in Section 8.01, above, have been approved by the Council Members for exercise by the Board of Directors.

(b) Self-Dealing Transactions. Notwithstanding the powers conferred on the Board of Directors pursuant to Sections 7.01 and 8.01, above, the Council shall not engage in any transaction which meets the definition of a "self-dealing transaction" as defined in California Corporations Code section 5233 unless the transaction has been approved by one of the means specified in section 5233(d). Generally speaking, section 5233 of the Corporations Code defines a "self-dealing transaction" as any transaction to which the Council is a party and in which one or more of its directors (i.e., Board of Directors members) has a material financial interest. Certain transactions are excluded by that statute from being classified as self-dealing transactions.

(c) Transactions Between Corporations Having Common Directorships. Unless it is established that the contract or transaction is just and reasonable as to the Council at the time it is authorized, approved or ratified in accordance with the requirements imposed by California Corporations Code section 5233, the Council shall not enter into a contract or transaction with any other corporation, association or entity in which one or more of the Council's Board of Directors members are directors unless the material facts as to the transaction and the Board of Directors member's common directorship are fully known or disclosed to the Board of Directors. The Board of Directors must approve, authorize or ratify any such contract or transaction in good faith and by a vote sufficient without counting the vote of the Board of Directors member(s) having a common directorship in another corporation that is a party to the transaction.

(d) Loans to Members of the Board of Directors or Council Officers. The Council shall not make any loan of money or property to, or guarantee the obligation of, any Board of Directors member or officer, unless the transaction is first approved by the California Attorney General. This provision shall not apply to any reasonable advance on account of expenses anticipated to be incurred in the performance of the Board of Directors member's or officer's duties.

(e) Standards for Investment. Except as provided in California Corporations Code sections 5240(c) and 5241, in the investment, reinvestment, purchase, acquisition, exchange, sale and management of the Council's investments, the Board of Directors shall:

(i) Avoid speculation, looking instead to the permanent disposition of the funds, considering the probable income, as well as the probable safety of the Council's capital; and

(ii) Comply with additional standards, if any, imposed by the Articles of Incorporation, these Bylaws, any resolutions duly adopted by the Board of Directors, or the express terms of any instrument or agreement pursuant to which the invested assets were contributed to the Council.

ARTICLE IX
Officers

Section 9.01. Officers. The officers of the Council shall be a Chair, a Vice Chair, a Secretary and a Treasurer. All elected Officers shall be Full Members of the Council in good standing as defined in Section 11.01 of these bylaws.

Section 9.02. Qualifications. The offices of Chair and Vice Chair may only be held by Board of Directors members representing Group 1 or Group 2 MOU signatories. No person may hold more than one office at the same time, except that one person may hold the offices of Secretary and Treasurer concurrently.

Section 9.03. Selection and Term of Office. The officers shall be selected at the annual (December) Plenary meeting of the Council and shall assume office starting January 1 of the following year for a term of one year. The offices of Chair and Vice Chair shall not be held by Representatives from the same Group. The office of Chair shall alternate between Group 1 and Group 2, with the Vice Chair assuming the office of Chair in the year immediately following completion of his or her term as Vice Chair. The Secretary and Treasurer shall be a Representative of a Group 3 Signatory Organization and shall thus be nominated by the Group 3 Members, subject to approval by the Board of Directors.

Section 9.04. Election of Officers. The Council Members shall nominate candidates for the offices of Chair, Vice Chair, Secretary and Treasurer in person or in writing at the third Plenary of each year not less than 60 days prior to the Plenary during which the nominations are slated for election. Written nominations must be received by the Council at its principal office prior to the start of the third Plenary, either by first class letter, facsimile, or electronic message. Any nomination must be seconded by a Voting Member Representative in person or in writing, and accepted by the nominee in person or in writing to be included on the ballot. For the offices of Chair and Vice Chair, Group 1 and 2 Council Members may only nominate candidates for the office their Group will hold in the coming term. The ballot for the offices of Chair, Vice Chair, Secretary and Treasurer shall be included in the Plenary Packet of the final Plenary of each year. The Voting Members of the Council shall vote on the ballot at the final Plenary of each year. Votes may be made in person or in writing. Any absentee ballots must be received prior to the start of the Plenary to be counted. For the offices of Chair and Vice Chair, Group 1 and 2 Members may only vote for candidates for the office their Group will hold in the coming term. For each office, the candidate receiving the most votes will be awarded the office.

Section 9.05. Duties. The officers perform those duties that are usual to their positions and that are assigned to them by the Board of Directors or by the Voting Members at a Plenary, including those duties that are set forth in the position descriptions for each officer as adopted by the Board of Directors from time to time. In addition, the Chair of the Council acts as Chair of the Board of Directors; the Vice Chair acts in place of the Chair when the Chair is not available; and the Treasurer is the chief financial officer of the Council.

Section 9.06. Vacancies. If a vacancy occurs among the officers of the Council, for any reason, the Board of Directors shall elect another Representative from the same Group for the

unexpired portion of the term. Signatory Organizations whose Representative serves as an officer of the Council may not substitute another individual to serve in that office.

Section 9.07. Removal of Officers. Any officer may be removed, with cause, by the Board of Directors, at any regular or special meeting, so long as written notice of the proposed action is given to the subject officer and to all Signatory Organizations of the Group that appointed the officer to office at least 30 days prior to the Board of Directors meeting at which the action to remove will be entertained. The notice of the Board of Directors shall identify, with reasonable specificity, the grounds for removal which shall either be (a) failure of the officer to attend at least two consecutive duly noticed meetings without a justified excuse as approved by the Board of Directors; or (b) repeated and material failure to perform the responsibilities of his or her office.

Section 9.08. Resignation of Officers. Any officer may resign at any time by giving written notice to the Board or to the Chair or to the secretary. Any such resignation shall take effect at the date of the receipt of such notice or at any later time specified therein; and unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective.

ARTICLE X
Standing and Other Committees of the Council

Section 10.01. Standing Committees of the Council. The Council has established the following Standing Committees:

(a) **The Membership Committee**. In accordance with Section 7.2 of the MOU, the Council shall have a Membership Committee comprised of three Representatives of the Group 1 Signatories and three Representatives of the Group 2 signatories. It shall be the duty of the Membership Committee to evaluate new signatory applicants as follows: (i) designate the category of membership, if any, for which an applicant is qualified; (ii) provisionally approve or disapprove an applicant for membership according to a process approved by the Plenary; and (iii) forward any such provisional membership approvals to the Plenary for ratification.

Section 10.02. Other Committees. The Board of Directors may, by resolution, establish other standing and ad hoc committees and such committees may include persons who are not members of the Board of Directors; however, all committee members must be Representatives of a Council Member or the Executive Director of the Council. The Board of Directors, as to matters within its jurisdiction, and the Members of the Council, as to matters within their jurisdiction, may delegate management of the Council's activities to any committee to the same extent that those powers could be delegated to agents, employees or independent contractors generally, and subject to the ultimate direction of the Board of Directors. In all other respects, committees shall be limited to making recommendations and reports to the Board of Directors or to the Members at a Plenary meeting of the Council (as to matters requiring Member action or approval) and to the Executive Director regarding matters that are within their respective missions as defined by the Board of Directors in the resolution establishing the advisory committee.

Section 10.03. Limitations on Authority of Committees. No committee appointed by the Board of Directors shall:

(a) Take any final action on any matter that, under the California Nonprofit Public Benefit Corporation Law, also requires approval of the members or approval of a majority of all members;

(b) Fill vacancies on the Board of Directors or the Membership Committee;

(c) Amend or repeal Bylaws or adopt new Bylaws; or

(d) Amend or repeal any resolution of the Board of Directors or the Council.

Section 10.04. Meetings and Actions of Committees. Meetings and actions of committees of the Council may be conducted informally, provided that all members of a committee must receive at least 10 days' prior notice of committee meetings, with notice given by one of the means sanctioned for the issuance of notice of Board of Directors meetings pursuant to Section 7.06, above. The Board of Directors may adopt additional rules for the governance of any committee it establishes, provided such rules are consistent with these Bylaws or, in the absence of rules adopted by the Board of Directors, any committee may adopt such rules for the committee's governance.

Section 10.05. Audit Committee. The Council shall have an audit committee consisting of at least three members of the Board of Directors, and may include nonvoting advisors. No employee of the Council may serve on the audit committee. Board of Directors members who receive, directly or indirectly, any consulting, advisory, or other compensatory fees from the Council may not serve on the audit committee. The audit committee shall perform the duties and adhere to the guidelines set forth in the Council's audit committee charter as amended from time to time by the Board of Directors. Such duties include, but are not limited to:

(a) Assisting the Board of Directors in choosing an independent auditor and recommending termination of the auditor, if necessary;

(b) Negotiating the auditor's compensation;

(c) Conferring with the auditor regarding the Council's financial affairs; and

(d) Reviewing and accepting or rejecting the audit

Members of the audit committee shall not receive compensation for their service on the audit committee in excess of that provided to the directors, if any, for their service on the Board of Directors. If the Council has a finance committee, a majority of the members of the audit committee may not concurrently serve as members of the finance committee, and the chair of the audit committee may not serve on the finance committee.

Section 10.06. Compensation Committee. The Council shall have a compensation committee consisting of at least three Board of Directors members and no one who is not a Board of Directors member. No employee of the Council may serve on the compensation committee. Pursuant to California Government Code section 12586(g) and the applicable provisions of federal law, the compensation committee shall review the compensation of the executive director, president or chief executive officer and the chief financial officer annually and whenever a modification in

compensation is proposed. The review shall include an evaluation of the performance of the executive director, president, and/or chief executive officer and the chief financial officer and an analysis of appropriate compensation comparability data. Based on the compensation committee's review, it shall recommend just and reasonable compensation amounts. At the request of the Chair or a majority of the Steering Council, the compensation committee shall review any issue involving staff compensation and benefits, including but limited to health and retirement plans.

ARTICLE XI
Finances of the Council

Section 11.01. Assessments by the Council. The Board of Directors shall recommend annual assessment amounts for Full Council Membership. The annual assessments shall be based upon an annual budget duly approved by the Plenary as required in Section 6.02 of these Bylaws and the Council's adopted Policies. The paying of annual assessments to the Council is voluntary for all Signatory Members, but is required for the benefits of Full Membership, which include access to Council technical assistance, publications, training, and written materials. For Group 2 members, payment shall mean payment in cash and/or in kind services, as defined in the Council's policies. Officers and members of the Council Board of Directors shall be Full Members in good standing.

Section 11.02. Checks. All checks or demands for money and notes of the Council shall be signed by the Executive Director and one or more officers of the Council; except that the Executive Director of the Council shall have authority to be the sole signatory on Council checks not to exceed such amount as may be designated from time to time by the Board of Directors.

Section 11.03. Operating Account. There shall be established and maintained a cash deposit account to be known as the "Operating Account" into which shall be deposited the operating portion of all Assessments as fixed and determined for all Members. Disbursements from such account shall be for the general need of the operation including, but not limited to, wages, repairs, betterments, maintenance, and other operating expenses of the Properties.

Section 11.04. Other Accounts. The Council shall maintain any other accounts it shall deem necessary to carry out its purposes.

Section 11.05. Financial Statements. The Board of Directors, through the audit committee, shall cause an audit of the financial affairs of the Council to be made at least every 12 months. Such audit shall reflect the financial condition of the Council as of the date of the audit and shall summarize the financial transactions in which the Council was involved during the period between the last of such audits and the date of the current audit. A copy of the audit shall be available for examination by each of the Board of Directors members of the Council. A copy of any annual financial statement and any income statement of the Council for each quarterly period of each fiscal year, and any accompanying balance sheet of the Council as of the end of such period, that has been prepared by the Council shall be kept on file in the principal office of the Council for 12 months.

The income statements, statements of changes in financial position, and balance sheet referred to in this Section shall be accompanied by the report, if any, of any independent accountants engaged by the Council or the certificate of an authorized officer of the Council that the financial statements were prepared without audit from the books and records of the Council.

ARTICLE XII
Conflicts of Interest / Obligation of Recusal

Section 12.01. Conflicts of Interest.

(a) No Representative of a Signatory Organization of the Council, shall make, participate in making, or in any way attempt to use his or her position as a Member Representative, Board of Directors member, or officer of the Council to influence any decision or action of the Council at a Plenary or any decision or action of the Board of Directors with respect to contracts to provide services to the Council if the Member Representative is personally aware that the Signatory Organization he or she represents on the Council, or any constituent organization that is a member or affiliate of the Signatory Organization, has a direct or indirect material financial interest in the subject matter of the decision or action to which the vote of the Council pertains. For purposes of this Article XII, a material financial interest is defined as an interest satisfying each of the following three elements:

(i) the interest relates to a grant received by the Member Representative's Signatory Organization (or any member or affiliated organization) or originates from an agreement between the Member Representative's Signatory Organization (or any member or affiliated organization) and any other person;

(ii) the interest is or will be worth $2000.00 or more in value provided to, received by, or promised to the Representative's Signatory Organization (or any member or affiliated organization) within twelve (12) months of the date when the Council vote is conducted; and

(iii) the outcome of the vote is, or is likely to have, a positive impact on the aforementioned interest which will enhance its value by a factor of ten percent or more during the term of the agreement or grant.

(b) If a Member Representative knows that a material financial interest of his or her Signatory Organization (or any organization that is a member or affiliate of the signatory organization) may be positively influenced by a Council vote on any of the matters described in subparagraph (a) above, then prior to any vote by the Council on the matter the Representative shall be obligated to disclose to the Council the fact that his or her Signatory Organization (or one or more of its member or affiliated organizations) has/have a conflict with respect to the matter which involves a material financial interest. As a result of that disclosure, the Representative must be recused from voting on behalf of the interested Signatory Organization.

(c) Prior to entertaining any discussion and vote on any matter described in subparagraph (a) above, the presiding Chair shall read a statement reminding all attending Voting

Members of their obligations under this Article XII. That statement shall include a recital of the above definition of what constitutes a material financial interest.

Section 12.02. Enforcement. If any Member Representative or Signatory Organization is found by the Board of Directors to have willfully failed to disclose a conflict of interest, as defined in Section 12.01 above, said conduct shall be grounds for voiding the vote of the Signatory Organization. In addition, if it is determined that the Member Representative with the undisclosed conflict actively participated in any deliberations of the Board of Directors preceding the vote, it shall be presumed that the vote was adversely affected and thus rendered void and of no effect unless subsequently ratified by a proper vote which excludes the Member Representative with the conflict.

ARTICLE XIII
Miscellaneous

Section 13.01. Inspection of Books and Records.

(a) Inspection by Council Members. All accounting books and records, minutes of proceedings of the Council Members, the Board of Directors and committees appointed by the Board of Directors and membership lists and papers of the Council shall at all times, during reasonable business hours, be subject to the inspection of any Member or his or her duly appointed Representative at the offices of the Council for any purpose reasonably related to the Member's interest as such. Member's rights of inspection hereunder shall be exercisable on ten (10) days' written demand on the Corporation, which demand shall state the purpose for which the inspection rights are requested. Inspection rights shall be subject to the Corporation's right to offer a reasonable alternative to inspection within 10 days after receiving the Member's written demand (as more particularly set forth in section 6330 and following of the California Nonprofit Public Benefit Corporation Law).

(b) Inspection by Members of the Board of Directors. Every member of the Board of Directors shall have an absolute right at any reasonable time to inspect all books, records, documents and minutes of the Council and the physical properties owned by the Council. The right of inspection by a Board of Directors member includes the right to make extracts and copies of documents.

(c) Inspection by Members of the Public. Regular reports of Signatory Organizations concerning their water conservation activities and efforts shall be available for public inspection, as are any reports or filings of the Council with the State Water Resources Control Board.

(d) Rules Regarding Exercise of Inspection Rights. The Board of Directors may establish reasonable rules with respect to (i) notice of inspection, (ii) hours and days of the week when inspection may be made, and (iii) payment of the cost of reproducing copies of documents requested by the Member.

Section 13.02. Executive Director. The Council may, from time to time, employ the services of an Executive Director to manage the affairs of the Council. To the extent not inconsistent with the laws of the State of California, and upon such conditions as are otherwise deemed advisable by the Council, the Council, acting by and through its Board of Directors, may

delegate to the Executive Director or to other employees or contractors any of its day-to-day management and maintenance duties and powers under these Bylaws, provided that the Executive Director shall at all times remain subject to the ultimate direction and control of the Board of Directors. Subject to those limitations, the Executive Director shall have sole responsibility for management, control and retention of other Council staff members.

Section 13.03. Amendment or Repeal of Bylaws. Except as otherwise expressly provided herein, these Bylaws may only be amended or repealed and new Bylaws adopted by the affirmative vote or written ballot of a majority of all the Voting Members of the Council (which majority must also include a majority of each Group of Voting Members). Notwithstanding the foregoing, any amendment of the Bylaws must be consistent with the then current version of the MOU and the percentage of the Voting Members necessary to amend a specific clause or provision of these Bylaws shall be not less than the percentage of affirmative votes, or votes by classes of Members, prescribed for action to be taken under that clause.

Section 13.04. Notice Requirements. Any notice or other document permitted or required to be delivered as provided herein shall be delivered as required under these bylaws and shall be sent to address(es) provided and updated from time to time by the Signatory Members to the Council.

Section 13.05. Annual Statement of General Information. As and when required by California Corporations Code section 6210, the Council shall file with the Secretary of State of the State of California, on the prescribed form, a statement setting forth the authorized number of directors (i.e., Board of Directors members), the names and complete business or residence addresses of all incumbent Board of Directors members, the names and complete business or residence addresses of the Chair, Vice Chair, Secretary and Treasurer, and the street address of its principal office in this state, together with a designation of the agent of the Council for the purpose of service of process.

Section 13.06. Construction and Definitions. Unless the context requires otherwise or a term is specifically defined herein, the general provisions, rules of construction, and definitions in the California Nonprofit Corporation Law shall govern the construction of these Bylaws. Without limiting the generality of the foregoing, the masculine gender includes the feminine and neuter, and singular number includes the plural and the plural number includes the singular.

Section 13.07. Indemnification of Corporate Agents.

(a) Any person who was or is a Board of Directors member, officer, employee or other agent of the Council (collectively "Agents") may be indemnified by the Council for any claims, demands, causes of action, expenses or liabilities arising out of, or pertaining to, the Agent's service to or on behalf of the Council to the full extent permitted by California Corporations Code section 5238.

(b) The Council shall have power to purchase and maintain insurance on behalf of any agent of the Council against any liability asserted against or incurred by the agent in such capacity or arising out of the agent's status as such whether or not the Council would have the power to indemnify the agent against such liability under section 5238 of the Corporations Code; provided, however, that the Council shall have no power to purchase and maintain such insurance to indemnify any agent of the Council for a violation of California Corporations Code section 5233.

Section 13.08. Nonpaid Members of the Board of Directors; Alleged Failure to Discharge Duties; No Monetary Liability. Except as provided in California Corporations Code sections 5233 or 5237, there is no monetary liability on the part of, and no cause of action for damages shall arise against, any nonpaid member of the Board of Directors, including any nonpaid Board of Directors member who is also a nonpaid officer of the Council based upon any alleged failure to discharge the person's duties as a Board member or officer if the duties are performed in a manner that meets all of the following criteria:

(a) The duties are performed in good faith;

(b) The duties are performed in a manner such Board of Directors member believes to be in the best interests of the Council; and

(c) The duties are performed with such care, including reasonable inquiry, as an ordinarily prudent person in a like position would use under similar circumstances.

Section 13.09. Personal Liability for Negligence.

(a) Except as provided in subparagraph (c) below, there shall be no personal liability to a third party on the part of a volunteer member of the Board of Directors or officer of the Council caused by the Board of Directors member's or officer's negligent act or omission in the performance of that person's duties as a Board of Directors member or officer, if all of the following conditions are met:

(i) The act or omission was within the scope of the Board of Directors member's or officer's duties;

(ii) The act or omission was performed in good faith;

(iii) The act or omission was not reckless, wanton, intentional, or grossly negligent; and

(iv) Damages caused by the act or omission are covered pursuant to a liability insurance policy issued to the Council, either in the form of a general liability policy or a Board of Directors member's and officer's liability policy, or personally to the Board of Directors member or officer. In the event that the damages are not covered by a liability insurance policy, the volunteer Board of Directors member or volunteer officer shall not be personally liable for the damages if the Board of Directors and the person had made all reasonable efforts in good faith to obtain available liability insurance.

(b) For purposes of this Section 10.10, "volunteer" means the rendering of services without compensation. "Compensation" means remuneration whether by the way of salary, fee, or

other consideration for services rendered. However, the payment of per diem, mileage, or other reimbursement expenses to a member of the Board of Directors or an officer does not affect that person's status as a volunteer within the meaning of this Section.

(c) This Section does not eliminate or limit the liability of a Board of Directors member or officer for (i) any liability with respect to self-dealing transactions as provided in California Corporations Code section 5233 or any liability with respect to certain prohibited distributions, loans or guarantees as provided in section 5237 of said law; or (ii) in any action or proceeding brought by the California Attorney General.