

# 2004 Water Use Efficiency Grant Application

## A15a. Project Information Form: Appendix A

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Applying for:

Urban

Agricultural

➤ (Section A) **Urban or Agricultural Water Use Efficiency Implementation Project**

(a) Implementation of Urban Best Management Practice, # 4 and 11.

(b) implementation of Agricultural Efficient Water Management Practice, # \_\_\_\_\_

(c) implementation of other projects to meet California Bay-Delta Program objectives, Targeted Benefit # or Quantifiable Objective #, if applicable \_\_\_\_\_

(d) Specify other: \_\_\_\_\_

➤ (Section B) **Urban or Agricultural Research and Development; Feasibility Studies, Pilot, or Demonstration Projects; Training, Education or Public Information; Technical Assistance**

(e) research and development, feasibility studies, pilot, or demonstration projects

(f) training, education or public information programs with statewide application

(g) technical assistance

(h) other

3. Principal applicant (Organization or affiliation):

Sacramento Suburban Water District

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4. Project Title:

Installation of Meters and Metered Rate for Single Family Residences

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5. Person authorized to sign and submit proposal and contract:

Name, title

Rob Roscoe, General Manager

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Mailing address

3701 Marconi Avenue, Suite 100

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Sacramento, CA 95821-5303

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Telephone

(916) 972-7171

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Fax

(916) 332-6215

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E-mail

rroscoe@sswd.org

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6. Contact person (if different):	Name, title.	John Valdes, CIP Manager
	Mailing address	3701 Marconi Avenue, Suite 100 Sacramento, CA 95821-5303
	Telephone	(916) 972-7171
	Fax	(916) 332-6215
	E-mail	jvaldes@sswd.org

7. Grant funds requested (dollar amount): <i>(from Table C-1, column VI)</i>	<b>\$980,000</b>
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8. Applicant funds pledged (dollar amount):	<b>\$2,691,600</b>
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9. Total project costs (dollar amount): <i>(from Table C-1, column IV, row n)</i>	<b>\$3,671,600</b>
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10. Percent of State share requested (%) <i>(from Table C-1)</i>	<b>27</b>
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11. Percent of local share as match (%) <i>(from Table C-1)</i>	<b>73</b>
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12. Is your project locally cost effective?  
*Locally cost effective means that the benefits to an entity (in dollar terms) of implementing a program exceed the costs of that program within the boundaries of that entity.*

*(If yes, provide information that the project in addition to Bay-Delta benefit meets one of the following conditions: broad transferable benefits, overcome implementation barriers, or accelerate implementation.)*

(a) yes

(b) no

11. Is your project required by regulation, law or contract?  
If no, your project is eligible.

(a) yes

(b) no

If yes, your project may be eligible only if there will be accelerated implementation to fulfill a future requirement and is not currently required.

*Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.*

State law requires meter implementation by 2025. Water Forum requires meter implementation by 2030. This project accelerates implementation 20 years ahead of State law requirements.

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12. Duration of project (month/year to month/year): 12/2005 to 12/2007

13. State Assembly District where the project is to be conducted: 5

14. State Senate District where the project is to be conducted: 5

15. Congressional district(s) where the project is to be conducted: 5

16. County where the project is to be conducted: Sacramento

17. Location of project (longitude and latitude) 122°30' Longitude  
38°47' Latitude

18. How many service connections in your service area (urban)? 43,352

19. How many acre-feet of water per year does your agency serve? 50,000

20. Type of applicant (select one):
- (a) City
  - (b) County
  - (c) City and County
  - (d) Joint Powers Authority
  - (e) Public Water District
  - (f) Tribe
  - (g) Non Profit Organization
  - (h) University, College
  - (i) State Agency
  - (j) Federal Agency
  - (k) Other
    - (i) Investor-Owned Utility
    - (ii) Incorporated Mutual Water Co.
    - (iii) Specify \_\_\_\_\_

21. Is applicant a disadvantaged community? If 'yes' include annual median household income.

(a) yes, \_\_\_\_\_ median household income

(b) no

## PROJECT SUMMARY

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The Project consists of metering 4,050 single family residential connections and applying metered rates in the Sacramento Suburban Water District (SSWD). These connections are currently unmetered and are on flat rate billing. The intent is to reduce water use by installing residential meters and converting newly metered customers from a flat rate billing structure to an inclining block metered rate structure.

The SSWD was formed by the consolidation of the Arcade and Northridge Water Districts in February 2002. The SSWD is located in Sacramento County, north of the American River. SSWD serves approximately 43,400 connections, of which approximately 39,000 are single family connections. Currently approximately 29,000 of the single family connections are unmetered.

The Project will retrofit 4,050 unmetered accounts in three years, from 2006 through 2008. SSWD has instituted a 20-year metering plan to phase in meters and metered rates. This project significantly accelerates the metering implementation requirements as defined in the recent State law and the Water Forum Agreement. The State law does not require metering until 2025. The Water Forum Agreement does not require all residential meters to be installed until 2030. The District's 20-year program accelerates both required schedules, providing significant benefits to CALFED, the Bay Delta, and local ecosystems much sooner than required under the State law and the Water Forum Agreement.

**This project accelerates the implementation of meter retrofits and metered rates ahead of the 2025 requirement, providing 17 extra years of at least 261 acre/feet per year of new water supply.**

The project cost is \$3,671,600 and the total proposed grant amount is \$980,000. It is expected that 10 percent of the average single-family customer water use will be conserved through the installation of meters, resulting in an average water savings of 261 ac-ft/year, or a total of 5,220 ac-ft over 20 years.

### Introduction

Like many of the Central Valley communities in California, the SSWD historically did not meter their single family residential customers. Because of the relatively low cost of water, retrofitting meters was historically not cost effective. Water rates for residential customers were based on a flat monthly rate for any quantity of water use. This flat rate system has led to relatively high per capita water use as compared to metered communities. SSWD utilizes surface water from the American River and the Sacramento north area groundwater basin as its water supply. Both of these water supply sources are limited and as a result, their efficient use is critical to the ongoing availability of water locally, regionally, and statewide.

This project will positively impact the Bay-Delta system by increasing instream flows compared to current projections, and reducing the overall reliance on the surface water supplies from the American River upstream from the Bay-Delta. SSWD's conservation efforts are beneficial to the

long-term, comprehensive effort to reduce pressure on the Bay-Delta system to meet regional and state-wide water needs. One of the fundamental objectives of the CALFED Bay-Delta program is to reduce the mismatch between Bay-Delta water supplies and beneficial uses dependent on the Bay-Delta system. Water use efficiency is one of the cornerstone strategies the CALFED Bay-Delta program is deploying to achieve this objective. Installation of meters on currently unmetered residences will reduce the demand for a significant urban end-use of water supplies to the Bay-Delta System.

This project involves the implementation of urban water conservation best management practice (BMP) numbers 4 *Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections* and 11 *Conservation Pricing*, as defined by the California Urban Water Conservation Council (CUWCC). The unpredictable water supply and ever increasing demand on California's complex water resources have resulted in a coordinated effort by the California Department of Water Resources (DWR), water utilities, environmental organizations, and other interested groups to develop a list of urban BMPs for conserving water. This consensus-building effort resulted in the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU), which formalizes an agreement to implement these BMPs and makes a cooperative effort to reduce the consumption of California's water resources. The District anticipates signing the MOU within two months.

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## **A-15C. STATEMENT OF WORK, SECTION 1: RELEVANCE AND IMPORTANCE**

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This section describes the relevance and importance of this project. Project goals, objectives, and need are explained. Project consistency with local and regional plan and further implementation of existing water management activities is described.

### **A-15c.1. Project Goals and Objectives**

The goal of this project is to accelerate water meter installations and convert customers to a commodity-based rate structure significantly sooner than required by State law and other agreements. This project is part of the District's implementation of California Urban Water Management Council's BMPS 4 and 11. It is widely recognized that billing customers based on metered water use is an effective means of encouraging water use efficiency. Meter retrofits combined with an inclining rate block structure are anticipated to result in at least 10 percent reduction in demand by retrofitted accounts. In addition, it is important to note that meters are instrumental to the success of a number of other conservation BMPs.

It is anticipated that converting customers to a commodity-based rate structure will conserve at least 10 percent of current water demand, creating a new water supply to benefit local water resources and the Bay-Delta system. By new water supply, it is expected that the District's customers will use 10 percent less in the future, meaning the District will use less water in the future than the no-project alternative.

The project will install 4,050 meters in three years and convert the accounts to a commodity-based rate structure. It is conservatively estimated this will permanently create 261 acre/feet per year of new water supply. The figure below indicates the areas that have been prioritized for the three year meter retrofit implementation.

The objectives of this project are to significantly increase water use efficiency by installing water meters.

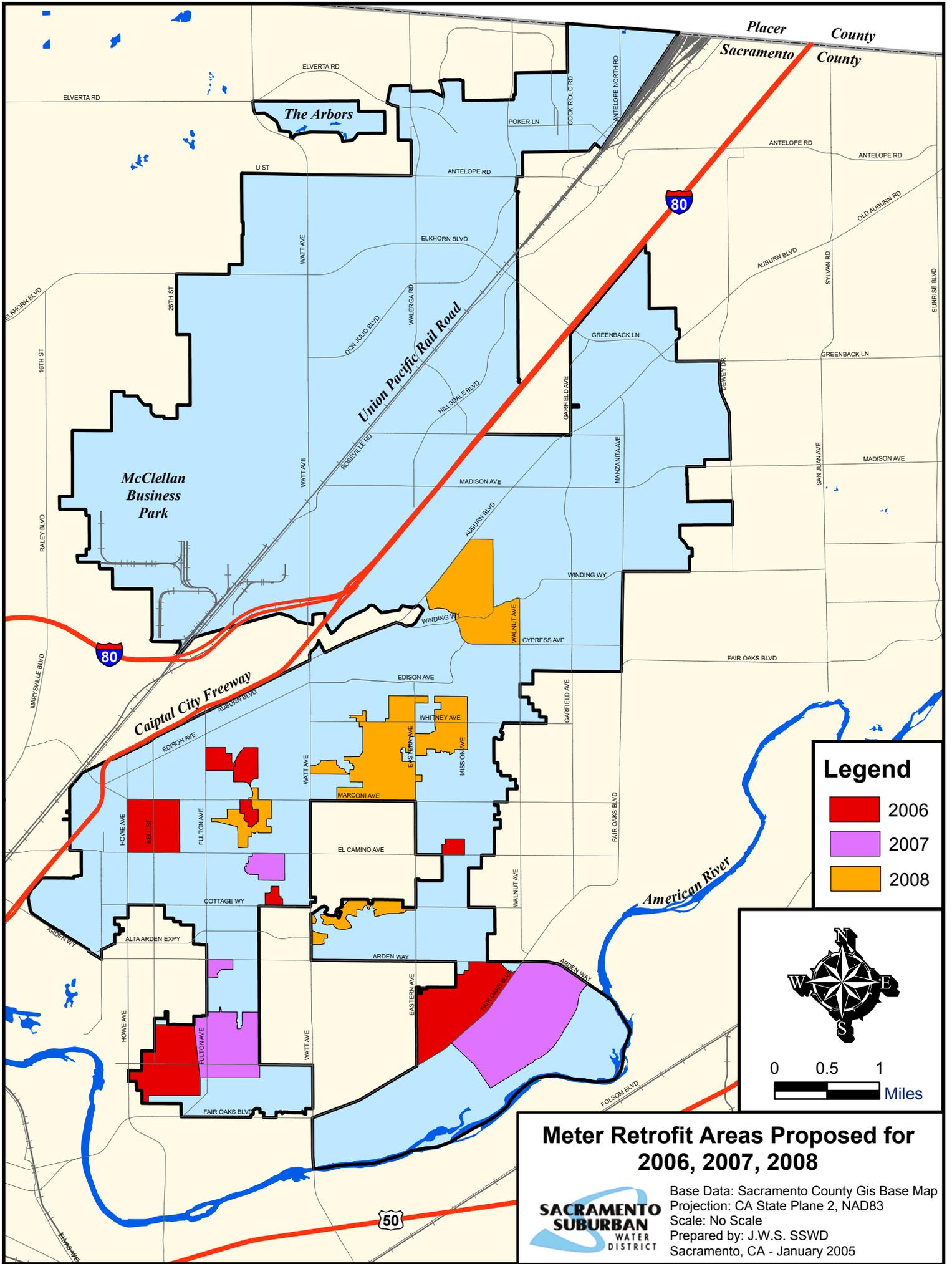
**A-15c.2. Project Need as Related to Bay-Delta, State, and Federal Water Issues**

One of the fundamental objectives of the California Bay-Delta Authority (CBDA, formally CALFED) Bay-Delta program is to reduce the imbalance between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. Water use efficiency projects are one of the cornerstone strategies that the CBDA Bay-Delta program is deploying to achieve this objective. This project implements two water efficiency BMPs to create new water supply for the benefit of local, regional, and Bay Delta resources.

The Proposal Solicitation Package (PSP) states that Proposition 50 language requires priority be given to projects that achieve multiple benefits across the CALFED Program Elements. This project achieves the following benefits for each CALFED Program element compared to a no-project alternative, as listed in Table 1:

**Table 1. Benefits to CALFED Program Element**

<b>CALFED Program Element</b>	<b>SSWD Metering Program Benefit</b>
Water Management	Provides benefits to many of the program elements developed to achieve the CALFED Objectives (listed below in this table).
Storage	Reduces demand on local groundwater basin, increasing available stored water for use during dry years
Conveyance	Provides more water to the Bay-Delta system to improve operational flexibility.
Water Use Efficiency	Reduces water demand by at least 10 percent.
Water Transfers	Provides new water source to protect environment needs during water transfers.
Environmental Water Account	Provides new water source for EWA.
Drinking Water Quality	Provides new fresh water source to Bay-Delta that improves raw water quality.
Watershed Management	Contributes to the Sacramento area watershed management efforts by increasing conjunctive use flexibility.
Levee System Integrity	No direct benefit.
Ecosystem Restoration	Provides new water source to American River and Bay-Delta to improve ecosystems.
Science	Provides real water conservation data to be used on future CALFED and other planning efforts.



**Legend**

- 2006
- 2007
- 2008

A north arrow is located in the top right corner of the map area. Below it is a scale bar showing distances of 0, 0.5, and 1 mile.

**Meter Retrofit Areas Proposed for 2006, 2007, 2008**

**SACRAMENTO SUBURBAN WATER DISTRICT**

Base Data: Sacramento County Gis Base Map  
 Projection: CA State Plane 2, NAD83  
 Scale: No Scale  
 Prepared by: J.W.S. SSWD  
 Sacramento, CA - January 2005

In addition, the Water Use Efficiency Program has established goals as presented in the CALFED Water Use Efficiency Program Plan, July 2000 (page 2-3). These goals are presented below in Table 2 with the corresponding benefits from SSWD’s meter retrofit program.

**Table 2. Benefits to WUE Program Plan**

<b>CALFED WUE Program Objective</b>	<b>SSWD Metering Program Benefit</b>
Reduce existing irrecoverable losses	The metering program reduces water use, including irrigation. By making water more valuable to customers, less water will be lost to the atmosphere through over irrigation.
Achieve multiple benefits	Adding new supply to the water system provides multiple local, regional, and State benefits.
Preserve local flexibility	Reducing demand allows more water banked in the groundwater system that is available for conjunctive use to increase SSWD operational flexibility.
Use incentive-based actions over regulatory actions	Implementing metered water rates provides incentives for customers to conserve instead of mandating water reductions.
Build on existing water use efficiency programs	A meter retrofit program is already established in the Water Forum Agreement and maximizes the savings from other BMPs already implemented.
Provide assurance of high water use efficiency	A meter retrofit program is identified State-wide as a conservation measure that, coupled with a conservation rate structure, provides real and quantifiable water savings.

Project benefits are also discussed in A-15I. Benefits and Costs.

### **A-15c.3. Local and Regional Water Management Plans**

This project is compatible with local water management plans and the District’s ongoing efforts to achieve greater water use efficiency.

A critical local and regional issue is the declining level of water in the Sacramento north area groundwater basin. The efficient use of water will help maintain the long-term sustainable yield of the groundwater basin north of the American River through conjunctive use practices. This is the objective of the Sacramento Groundwater Authority (SGA). SGA is a joint powers authority (JPA) of the City of Sacramento, City of Citrus Heights, City of Folsom and County of Sacramento. The JPA has delegated the powers necessary to protect and regulate the local groundwater basin to the overlying water purveyors. Pumping fees imposed by the SGA will most likely be used as a mechanism to limit groundwater pumping. The SGA’s goal is to limit the long-term average groundwater pumping to approximately 131,000 ac-ft per year, which was approximately the amount of groundwater pumped within the SGA boundaries in 1990. It is critical to customers in the SSWD that water is used efficiently in order to have a reliable water supply and avoid pumping restrictions or increased pumping fees that would raise water rates for customers.

The recently signed Water Forum Agreement was the result of the efforts of a diverse group of community leaders formed in 1994 to formulate principles for a regional solution of future water supply. The Water Forum is a comprehensive package that will achieve two coequal objectives: provide a reliable and safe water supply for the region's economic health and planned development to the year 2030; and preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. One element of the Water Forum is to ensure that sufficient water supplies will be available to customers in dry years as well as wet years. The Water Forum Agreement consists of three year types based on projected flows in the American River. These year types define diversion allowances based on flow limitations as set in the Water Forum Agreement. This is a critical local and regional issue that involves minimum flows that must remain in the lower American River, which is downstream of Folsom Reservoir. It is critical to SSWD customers that water is used efficiently in order to have a reliable water supply during dry years when diversion restrictions from the American River are in place.

In their Water Forum Agreement conservation element, SSWD agreed to complete installation of all meter retrofits by 2030. A State law has also been enacted that requires metering and metered rates on all residential accounts by 2025. This project proposes to accelerate SSWD's legal requirements and Water Forum commitment through the purchase and installation of 4,050 residential meters for currently unmetered single family accounts within the three-year contract period.

#### **A-15c.4. Water Demand Management Activities**

This section documents the implementation of water demand management activities. The District implements many of the BMPs recommended by CUWCC and required by their Water Forum Agreement. The meter retrofit project is one of the BMPs that has not been fully implemented due to its low benefit to cost ratio. This grant application, if awarded, will help SSWD implement BMP 4 and 11 much sooner than is required, resulting in more water supply available to the region and Bay Delta systems. The following lists the water demand management initiatives that are currently under implementation.

**BMP 1. Water survey programs for single-family residential and multi-family residential connections.** The District provides water survey programs for single-family residential and multifamily residential connections consist of annual water evaluations, water use reviews, and surveys of past program participants. Evaluations are conducted by trained auditors and may include low flow device installation. Evaluations identify water-use problems, recommend repairs, instruction in landscape principles, irrigation timer use and, when appropriate, meter reading.

**BMP 2. Residential plumbing retrofit.** Plumbing retrofit of existing residential accounts consists of providing low flow showerheads, faucet aerators, and toilet leak detection tablets to customers. The District offers free water conservation information and materials to residents.

**BMP 3. System water audits, leak detection and repair.** A system water audit, leak detection and repair program consists of ongoing leak detection and repair within the system, focused on the high probability leak areas. This also includes an ongoing meter calibration and replacement program for all production and distribution meters.

**BMP 4. Metering with commodity rates for all new connections and retrofit of existing connections.** The District is in the process of metering all residential connections. Nearly all non-residential connections are metered. The District has completed the Water Meter Retrofit Plan which recommends a 20 year metering implementation plan.

**BMP 5. Large landscape conservation programs and incentives.** The large landscape conservation program consists of identifying all irrigation accounts and commercial, industrial, and institutional (CII) accounts with landscaping of one acre and larger, and recording this information into a database. The District has prepared irrigation educational information for all customers. The District has hired a contract landscape water auditor to perform surveys and a landscape water-use review program contractor that provides audits and other services for the program.

**BMP 6. High-efficiency washing machine rebate programs.** In the past, the predecessor to SSWD, the Northridge Water District, along with the Sacramento Area Water Works Association (SAWWA), partnered with SMUD in a washing machine rebate program. The program was discontinued due to a very low participation rate. During the time this program was implemented, 5 to 10 washers out of 200 were purchased by Northridge Water District customers. The District is currently reviewing new partnering agencies for participation in the washer rebate program.

**BMP 7. Public information programs.** Public information is an ongoing component of the District's water conservation program. The District produces a monthly billing insert and quarterly newsletter that includes a regular feature devoted to the promotion of water conservation. The newsletter is distributed through the mail to all District customers. The District also has an active role in the Water Efficiency Committee under the Regional Water Authority (RWA), which promotes water conservation news articles, fliers, media coverage, and community events. The District conducts at least three community outreach events per year within the service area. The District also maintains a drought tolerant demonstration garden with year-round activities to introduce the public to the water conservation and alternative gardening methods.

**BMP 8. School education programs.** School education is an ongoing component of the District's water conservation program. The RWA's Water Efficiency Committee implements the Sacramento Bee school outreach program, which is a water conservation program targeted at grades K through 8. Schools only need to request material from the Sacramento Bee to utilize the program. A program targeted at high school students is currently being developed. SSWD also performs at least three school programs per year within their own service area to provide information on conservation and the District.

**BMP 9. Conservation programs for commercial, industrial, and institutional accounts.** The District has developed a conservation program for CII accounts that includes water audits targeted to the top water users. This program also includes surveys of past program participants to determine if audit recommendations were implemented. This program evaluates incentives related to the use of efficient water-use technologies.

**BMP 11. Conservation pricing.** The District currently implements conservation pricing (inclining block rate) for all its metered customers. All of the District's commercial, irrigation, and multi-family customers are metered. Tiered rates are implemented for residential customers as they become metered.

**BMP 12. Conservation coordinator.** A conservation coordinator is a full time employee of the District and is an ongoing component of the District's water conservation program. The conservation coordinator is responsible for implementing and monitoring the District's water conservation activities.

**BMP 13. Water waste prohibition.** Water waste prohibition is an ongoing component of the District's water conservation program. This District has adopted its own set of water conservation regulations.

**BMP 14. Residential ULFT replacement programs.** The District works in collaboration through public notification and coordination with the Sacramento Regional Sanitation District who provides ULFTs within the District's service area.

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## **A-15D. STATEMENT OF WORK, SECTION 2: TECHNICAL/SCIENTIFIC MERIT**

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This section describes the methods, procedures and facilities associated with the project. A task list and schedule and quarterly expenditure of the project are also included in this section.

### **A-15d.1. Project Methods and Procedures**

SSWD will use standard engineering, construction, and rate structure methods to implement this project. Standard purchasing and contracting procedures will be used to purchase meters in bulk and use a general contractor for meter installation. This project does not require the purchase of land or easements. All planning, design, and engineering is being performed in-house. Where required, SSWD will acquire encroachment permits. SSWD's inclining block metered rate structures were developed using accepted American Water Works Association (AWWA) rate-making procedures. A copy of the rate structure is included in Appendix 1.

SSWD has developed project control procedures to ensure that this project is fully implemented in accordance with the project budget and schedule. Throughout the period of meter installation, the inspector will check on the meter installation contractor daily. Each month SSWD will provide a progress report summarizing the number of meters installed by the contractor which will be used to track project progress.

### **A-15d.2. Task List and Schedule**

The tasks for implementation of this project and the project schedule are described below and presented on the figure below. The schedule includes deliverable items, due dates, and projected costs for each task.

Tasks

1. Finalize contract documents (project design/specifications).
2. Obtain encroachment permits - SSWD will apply for encroachment permits from Sacramento County as necessary.
3. Obtain competitive bid – Lowest acceptable bid.
4. Purchase and install meters – Meters will be purchased in bulk.
5. Prepare monthly installation and progress reports – These reports will be status reports summarizing progress of meter installation of actual meters installed compared to project goal. These reports will be prepared on a monthly basis and aid in project control.
6. Implement metered billing - Billing at a metered rate will be implemented by SSWD during the fall and winter months following the installation of each meter.
7. Prepare monitoring and assessment report – This report will be written following the end of the project. It will include a summary of installations, data analysis of a control group of currently metered connections compared to newly metered installations, and resulting water use and water savings. The report will be updated annually and submitted as the Annual Report to DWR for five years following completion of the project.

Tasks	Costs	'05	2006				2007				2008				
		D	J	A	J	O	J	A	J	O	J	A	J	O	
1. Finalize Contract Documents (project design/specification)	\$40,000	◆													
2. Encroachment Permits	\$10,000	■													
3. Competitive Bid	\$11,000	■													
4. Purchase and Install Meters	\$3,564,000	■													
5. Prepare Monthly Installation Reports	\$10,100	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	
6. Implement Metered Billing	\$10,000						■								
7. Prepare Monitoring and Assessment Report, Annual Report (through 2013)	\$26,500					◆					◆			◆	
Project Total	\$3,671,600														

◆ Deliverable items

**Project Timeline**

### **A-15d.3. Preliminary Plan and Specifications and Certification Statement**

SSWD prepared a Water Meter Retrofit Plan that analyzed the requirements to implement meter installation and metered rate billing. In that report, SSWD prioritized the areas for the first three years of implementation. SSWD has also developed standard specifications for each anticipated meter installation situation. An engineer's certification statement has been signed indicating the project is feasible and is designed to achieve the project objectives. The certification statement, project locations, and specifications are presented in Appendix 2, and will be used during implementation to maintain uniformity and quality control for the installations.

### **A-15d.4. Environmental Documentation**

In the past, meter retrofits have not been considered a "project" by CEQA. This will be confirmed with District legal council and, if required by CEQA, SSWD will submit a categorical exemption for this project at the beginning of the contract.

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## **A-15E. STATEMENT OF WORK SECTION 3: MONITORING AND ASSESSMENT**

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Program monitoring will include a process to evaluate water savings and track and account for District and grant fund payments towards the metering program. The following presents the monitoring plan.

Water savings will be determined from an estimate of current demands versus the metered demand. Because existing accounts are not metered, the actual existing water demand for each account is unavailable. Sacramento Suburban Water District does meter its commercial, industrial, and multi-family accounts. One common methodology is to subtract the known metered amounts from the total water produced, assume 10 percent loss from leaks and other un-metered uses, and assign the remaining water volume to single family residential demand. Applying this methodology to water use data for the previous 10 years, the District has determined an existing average single family residential demand of 575 gallons per day. This is the baseline demand that will be compared to future water demands.

The water usage for each account with a meter will be tracked through the District's existing automated meter reading system database and billing system. The District is using American Water Works Association (AWWA) approved meters. A 1-inch meter is expected to provide 1 to 3 percent accuracy.

As water usage data is collected, it is stored in the District's existing billing database system. The District will compare the annual usage for the metered customers against the baseline usage (580 gpd) to calculate the actual water savings. The actual water savings can be directly calculated, with the larger the actual savings, the greater the benefit to the Project's goals and objectives to benefit local water resources and the Bay-Delta System.

Water usage is a function of external factors such as climatic conditions and account characteristics (lot size and demographics). Because the project's water savings are assumed to occur indefinitely, (i.e., the water savings from converting from flat rate to a metered-rate structure are assumed permanent savings), overall water savings are based on an average precipitation year. Actual annual savings will vary, and this impact will be presented in the annual reports completed and submitted to DWR. As data is collected, the annual report will also include a weather normalization analysis to show the impacts of changing weather patterns on weather use. Account characteristics are also tracked in the District's customer database system. Demographics are available from the Census Bureau. The annual report will include a discussion of unit water demands per lot size and demographic indices such as income and people per dwelling unit that will help the District in future water demand planning efforts. This data will also benefit the CBDA Science Program Element by providing actual data and statistics for use in CBDA planning efforts.

The above information will be presented in the annual benefits and costs report submitted to DWR. The report will include a presentation of planned implementation versus actual implementation for meter installation and metered billing conversion. This information will also be tracked internally on a monthly basis to assure the project schedule is maintained. The annual report will also be available to the public for review at the District's office. A final report will be completed once the Project has completed installing meters and converting accounts to the inclining block rate structure. The final report will use actual water usage data and program costs to recalculate the benefit to cost ratios. This information will be valuable to CBDA, DWR, and others in evaluating future water use efficiency measures. The annual report will be submitted for five more years after completion (2008-2012) as required in the PSP.

The costs to monitor and prepare the required reports are estimated at \$10,000 a piece, for a total of \$20,000 over the three-year life of the project. These costs assume that the meter reading, database management, and associated administrative costs are included in the other cost categories in Table C-1.

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#### **A-15F. QUALIFICATIONS OF THE APPLICANTS AND COOPERATORS**

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This meter retrofit program will be managed by SSWD's CIP Engineering Manager, John Valdes, P.E. Mr. Valdes' resume is attached in Appendix 3. He has 23 years experience in planning, designing, and constructing water and wastewater infrastructure improvement projects. Mr. Valdes is responsible for managing the Capital Improvements Plan for SSWD and has developed the SSWD Water Meter Retrofit Plan. This document investigated the technical requirements for a meter retrofit program, analyzed the system to prioritize which areas would provide the greatest benefits from immediate meter installation, developed alternative meter retrofit programs, and developed a retrofit program that was approved by the SSWD Board of Directors in February 2004 and is under implementation by the District. The Water Meter Retrofit Plan report is not included in this grant application, but is available upon request.

This Project does not include any external partners to implement the program.

SSWD has not received any grants for water use efficiency projects.

SSWD is not a disadvantaged community.

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## **A-15G. OUTREACH, COMMUNITY INVOLVEMENTS, AND ACCEPTANCE**

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The District has prepared many outreach, public relations, and informational materials in order to prepare and educate its customers prior to implementing the meter retrofit and metered rate program. The following describes each element in the District's community outreach program.

**Bill Inserts.** SSWD creates a bill insert every month to inform its customers of current issues. All of these inserts in the last year have specifically addressed the meter retrofit program, metered rates, or water use efficiency. The purpose of these inserts is to inform and educate the District's customers about the importance of water use efficiency, steps they can implement to conserve water, and explain the accelerated meter retrofit program. A sample of inserts is included in Appendix 4.

**Quarterly Newsletters.** Similar to the bill inserts, the newsletters serve to educate the District's customers on the importance of water use conservation and the meter retrofit program. It is mailed to the customers separate from the bill, which provides another customer contact to strengthen the public outreach effort. A sample newsletter is included in Appendix 5.

**Brochures.** The District furthers its outreach program by producing specific brochures describing the meter retrofit program (including frequently asked questions), water use conservation, and the metered rate structure. These brochures are available at the District's office and are distributed to customers at community outreach events and during school visits. Examples of each brochure are included in Appendix 6.

**Meter Retrofit Letters.** Three information letters have been created that are sent to customers in a meter retrofit area. The first letter, Initial Contact Letter, is sent to customers as the District prepares to retrofit the respective area with meters. It explains to the customer why meters are being installed, and gives them contact information should they have more questions. There are two versions of the second letter, Work Commencement Letter (Drop-Ins) and Work Commencement Letter (Retrofits). Both of these letters provide the customer with a date range as to when their meter will be installed, provides some information on what to expect during the retrofit, and provides contact information for further questions. Samples of these three letters are included in Appendix 7. Similar letters are also already drafted for the District's main replacement program, which also includes meter retrofit installations.

**Community Outreach.** The District conducts multiple community outreach days within its service area to inform its customers about District services and provide information on District issues such as water use conservation, metering, and ongoing capital improvement projects. In 2004, the District conducted three community outreach programs. SSWD also conducts similar program geared towards school children to teach them the importance of saving water and provide a background on water issues in the Sacramento region. SSWD conducted three of these school outreach programs in 2004, in addition to the programs conducted by RWA. At each of the District's outreach programs, all of the information from the bill inserts, newsletters, and brochures are distributed to the participants.

**Public Workshops.** To further educate its customers and allow them input to the District's operations, the District also periodically holds public workshops to discuss current issues. One such workshop held in 2004 was specifically centered on the new metered rate structure. A letter inviting customers to attend and voice their concerns was mailed to all the District's customers. The letter also provided background information on the new rates and the need for new rates. A copy of the workshop invitational letter is included in Appendix 8. Four additional workshops are scheduled for the month of January 2005, all of which were announced in the December 2004 newsletter.

**Letters of Support.** The District has taken a proactive approach to the meter retrofit requirement by creating a program to accelerate the installation requirements and inform its customers of the benefits of the program. These efforts have set the example in the Sacramento region and have received the full support from the Regional Water Authority and the Water Forum. Each of these organizations have provided a letter of support for SSWD's program indicating the accelerated metering program is in full compliance with the region's goals to achieve water use conservation implementation, which also provides benefits to the CBDA objectives. The letters are included in Appendix 9.

This District expects some resistance from customers to the project, but there are no known organizations that are against the project.

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## A-15H. INNOVATION

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This project includes innovative meter reading technologies that will improve data accuracy, increase customer information, and improve water use analysis to benefit all concerned parties throughout the State. Automated meter reading (AMR) can represent many different meter reading technologies. For this project, AMR is used to electronically transmit the meter usage data from the meter to a receiver located in a vehicle. The vehicle drives down the street, calling and receiving data from each meter. The receiver is then plugged into the customer database at the District office, and water usage is instantly uploaded and available for usage.

The improved data accuracy from AMR results by eliminating multiple human input error opportunities. By increasing the accuracy of the data, the District and others throughout the State can develop better conclusions to use in future planning and developing operations strategies.

With the data input to the customer database almost immediately, as opposed to weekly or monthly for manual reads, the District and the customer can benefit from “real-time” data. Unusual water demands will be flagged earlier that could identify leaks or other unknown usages at a customers connection. The customer can be alerted sooner to identify the problem. The AMR system automatically alarms the District when a waster demand has remained constant for 24 hours, possibly signifying a leak. The District can then contact the customer and take appropriate actions to address the problem.

Account information and comparisons will also benefit from AMR’s improved accuracy and allow the District to conduct account characteristics comparisons in confidence to better understand their customer’s usage patterns and adapt their operations strategy to meet these patterns. This water use analysis will also benefit others in the State as the information will be reported in the annual report to the DWR and can be used to characterize account statistics throughout the State to help future local, regional, and State planning efforts.

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## **A-15I. BENEFITS AND COSTS**

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Tables C-1 through C-7 are included in this section. The Project will install meters with an expected life of 20 years. With metered services and an inclining block rate structure, the project creates an estimated new supply of 261 acre feet per year (AF/yr). This translates to a local monetary benefit of \$74,166 per year (2004 dollars), assuming other local monetary benefits are minor (i.e. energy and operations and maintenance, see below). The project costs total \$3,342,000 over three years. The project benefit to cost ratio over the 20-year meter life is 0.24. This project is not locally cost effective. This project is requesting 27 percent funding.

The cost analysis contains assumptions that are used to calculate specific costs and benefits. These assumptions are described below, with the subsequent calculations described in each respective table description.

### Base Assumptions

1. The expected life of a meter is 20 years.
2. One Full Time Equivalent (FTE) for the District staff averages \$75,000 per year, including salary and fringe benefits.
3. Total meters installed is 4,050 over three years.
4. Meter installation costs an average of \$800 per installation. This value is based on an average of actual installation costs for the District over the last five years. Cost includes meter, meter setter, meter box, and miscellaneous fitting prices, and installation labor based on recent bids for a meter retrofit project. Bid results are included in Appendix 10. A survey of Sacramento-area utilities indicates meter installation costs ranging from \$300 to over \$1,000, depending on meter

location, type of meter, and existing piping arrangements. The lower range is indicative of retrofits that use manual read meters and do not require meter setters, or the setter and box were already installed and the costs previously incurred.

### **Table C-1: Project Costs (Budget in Dollars)**

**Administrative.** It is assumed that a total of 0.33 Full Time Equivalents is required per year for three years to administer the meter installation program including equipment specifications and bidding, budget and schedule tracking, installation coordination, customer notification and complaint management, public and board presentations, and other general administrative requirements. Total costs for three years are 1.0 FTE.

**Materials/Installation/Implementation.** The majority of the project's costs are in this category. It is estimated to cost \$3,240,000 to install 4,050 meters in three years at a cost of \$800 per meter. This costs includes materials (meter and miscellaneous equipment) and installation (field crew time). The District already has an inclining block rate structure in place, as well as a customer billing system to use the meter data, so there are no implementation costs associated with converting customers to metered rates. There will be an initial implementation cost responding to customers questions, complaints, and other requests, but these costs are included in the operation and maintenance costs in Table C-2.

**Implementation Verification.** \$5,000 is assumed for this item to account for producing the verification report during, and for five years after implementation is complete.

**Project Legal/License Fees.** \$5,000 is assumed for this item to account for possible issues that may arise requiring legal interpretation and miscellaneous fees for project implementation.

**Monitoring and Assessment.** This cost includes the efforts to create reports from the customer database system, determine water savings, and conduct other data analysis as required. The effort for this task is estimated at 0.13 FTE total for three years, or \$10,000.

**Report Preparation.** This cost includes the efforts to incorporate the monitoring efforts into a report and submit annually to the DWR and make available at the District office. The effort for this task is estimated at 0.13 FTE total for three years, or \$10,000.

### **Table C-2: Annual Operations and Maintenance Costs**

**Operations:** All time and costs for meter reading and office support are listed under Operations costs. Because the installed meters will be radio-read meters, it is assumed that all 4,050 meters can be read in one day, once per month. This translates to a meter reading requirement of 0.05 FTE.

Office support requirements include increased customer service calls regarding meter reads, billing questions, and complaints. It is assumed office support requirements, averaged of the life of the meter (20 years), result in four hours per week, or 0.10 FTE. Other water districts in the Sacramento area have experienced similar increases on customer support requirements when switching from flat rate accounts to metered rate accounts.

Total operations costs is 0.15 FTE, or \$11,250 per year.

**Maintenance:** All time and costs for field efforts are listed under Maintenance costs. Field crews will be called for a variety of efforts that include rereads, meter calibration, meter maintenance, meter replacement, audits, and other activities due to customer complaints or internal data verification. It is assumed this effort, averaged over the life of the meter (20 years), will be 16 hours per month, or 0.10 Full Time Equivalent (FTE) per year for a total of \$7,500.

It is assumed that maintenance of field vehicles and other ancillary equipment operating costs are negligible because the District already operates and maintains meter reading equipment, and this project is only adding 12 days of meter reading per year. Therefore, these costs are not included in this analysis.

**Other:** No other annual operations and maintenance costs are assumed.

#### **Table C-5 – Project Annual Physical Benefits (Quantative and Qualitative Description of Benefits)**

**Bay Delta – Qualitative:** The new water supply is quantified below in discussion of Table C-6. There are numerous other qualitative and secondary benefits resulting from the new supply. Increased reliability of the supply offers numerous benefits to operation and management strategies of the Bay Delta system now and in the future as other inputs to the system may be reduced. The new, high quality supply also offers secondary benefits to water quality and wildlife habitat in the Bay Delta.

**Bay Delta - Quantitative:** This project analysis projects that at least 261 AF/yr of new water supply will be created through a demand reduction. The District operations strategy implements conjunctive use as part of the Water Forum Agreement. Current District operations rely on surface water for six months each year. Therefore, half of the new water supply created, or 131 AF/yr will be added to the American River flow, which adds to the fresh water inputs to the Bay Delta. This new water supply benefits the Bay Delta by making more volume available for Bay Delta supply management options and wildlife habitat needs. The new supply also improves water quality by adding the high quality American River water flow to the Bay-Delta system, providing a larger volume to dilute less quality water inputs. It is assumed the benefit will occur between May and October of each year, when the District has traditionally relied on surface water. This benefit is considered indefinite as industry studies have shown that water demands are less for metered accounts than for flat rate accounts. Though a meter is expected to last 20 years, the water savings from this conservation method will be permanent, as meters will be replaced when necessary.

This benefit is considered a direct benefit to the CALFED Bay Delta objectives. Through conservation methods, it creates a new water supply that can be used in the Bay Delta to help balance the multiple needs for high quality water in the system.

**Local – Qualitative:** The new water supply and subsequent reduction on groundwater demand is quantified below in discussion of Table C-6. There are numerous other qualitative and secondary benefits resulting from the new supply. Decreasing dependence on the groundwater basin offers numerous benefits to operation and management strategies for all users of the Sacramento Area Groundwater Basin. Reduction on groundwater draft also helps reduce subsidence and mitigating the host of issues associated with overdrafting the groundwater basin.

**Local - Quantitative:** This project analysis projects that at least 261 AF/yr of new water supply will be created through a demand reduction. The District operations strategy implements conjunctive use as part of the Water Forum Agreement. Current District operations rely mainly on groundwater for six months each year. Therefore, half of the new water supply created, or 131 AF/yr will be left in the groundwater basin, where it will be available for withdrawal during drought conditions. This reduction of groundwater pumping will occur mostly occur between May through October, when the District depends on groundwater for most of its supply. This benefit is considered indefinite as industry studies have shown that water demands are less for metered accounts than for flat rate accounts. Though a meter is expected to last 20 years, the water savings from this conservation method will be permanent, as meters will be replaced when necessary.

#### **Table C-6. – Project Annual Local Monetary Benefits**

**Avoided Water Supply Costs.** Current average water demand per residential account is 575 gallons per day (gpd). This was determined by subtracting the known metered amounts from the total water produced, assuming 10 percent loss from leaks and other un-metered uses, and assigning the remaining water volume to single family residential demand. Installing meters and commodity rate structure is assumed to reduce demand by 10 percent. This value is the mid range of savings as reported by California Urban Water Management Council, water demand studies conducted by Brown and Caldwell in the Sacramento Valley region, and as reported by other local utilities that bill metered accounts. Applying 10 percent savings, the total annual water savings from installing 4,050 meters is 232,900 gpd, or 261 AF/year.

The value of treated water supply is complicated to evaluate for the Sacramento region water utilities. To enhance reliability, improve water quality, and promote conjunctive use, most of the local water utilities have constructed numerous interties and developed water supply and water rights contracts to ensure each utility's demands are met. The Regional Water Authority conducted a study that calculated the cost of conjunctive use replacement water in the Sacramento area to be \$150-\$300 AF. This analysis used data from existing market trades, the CALFED document "Economic Evaluation of Water Management Alternatives (October 1999), the Natural Heritage Institute's report "Feasibility Study of a Maximal Program of Groundwater Banking", the Northern California Water Association, and the Friends of the River.

However, when evaluated at a utility level, some utilities have much different costs than the average depending on extent of infrastructure necessary to get treated water to their customers. SSWD is completing a project to deliver an estimated average of 17,256 AF/yr of surface water from the City of Sacramento's E.A. Fairbirrn Water Treatment Plan to the District's southern service area. The District's share of this project cost is \$24.9 million. The annual cost of the treated water supply is an additional \$130/AF. This project involves distribution pipes and treatment structure with expected lives of 50 years or more, and treatment and distribution equipment with expected lives up to 20 years. The total weighted project life of 40 years was calculated by assuming 70 percent of project has 50 year life and 30 percent of project has 20 year life. Using 40 years for the project life, the annual cost of this replacement water is \$240/AF per year.

Using the total water saved as 261 AF/yr, and the unit cost of \$240/AF, the annual avoided supply cost is \$62,640.

**Avoided Energy Costs.** Reducing water demand through implementation of this project will reduce energy requirements throughout the system. Energy demand is generally directly proportional to water demand. Therefore, if annual water demand is reduced 10 percent, annual energy demand will also reduce 10 percent. Using past pumping energy and cost records, the District's energy costs are approximately \$42/AF. Applying this unit rate to the total savings of 261 AF, the total energy cost savings is this represents a \$10,962 savings per year.

**Avoided Wastewater Treatment Costs.** The District does not provide wastewater treatment. The Sacramento Regional County Sanitation District (SRCSD) provides collection and treatment for wastewater. There will be some savings to SRCSD, but that value is not included in this analysis.

**Avoided Labor Costs.** Avoided labor costs are assumed to be insignificant. District O/M requirements will not significantly change due to the 10 percent decrease in demand as all system facilities will still be in operation and require maintenance activities as currently practiced.

**Other.** No other local benefits are identified.

## Other Project Benefits

Project benefits with regards to specific CALFED ROD, federal, state, regional, and local water issues are presented in Section A-15c. In addition to these, numerous other quantified and non-quantifiable benefits also attributable to the water savings from this project principally include:

1. Water quality benefits for waters with Federally listed endangered species.
2. Improved Bay Delta ecosystem through the increase in supply to the Bay Delta. Increased water use efficiency will have a direct potential direct benefit to more "environmental water" for the delta.

3. Improved local watershed ecosystem by decreased diversions from local rivers and groundwater basin, thereby benefiting in-stream uses.
4. Customer attitudes towards water conservation are revealed, enabling the area water utilities to more effectively reach customers on this subject.
5. Building the water efficiency ethic through market-based rates.
6. Energy savings to both water and wastewater agencies.

Further description of some of these benefits is provided below along with a summary in Table 3.

**Water Quality** – Potential and anticipated water quality benefits derived from creating a new supply include providing flow to improve aquatic ecosystems and the habitat restoration of many Federally listed species: Saltwater Harvest Mouse, California Clapper Rail, Delta Smelt, Splittail, Steelhead, Chinook salmon, fresh water shrimp, Coho salmon, and Steelhead in the Bay Delta system.

Increasing the amount of water available will reduce groundwater pumping and enhance groundwater recharge efforts. This could possibly slow down the spread of contaminants from the Aerojet Superfund site, providing a benefit to water quality.

**Water Supply Reliability** – Water supply reliability is fundamental to both the regional economy and the State’s economic health. Providing a new water supply through conservation improves the supply reliability on a daily basis, and provides the option to store more groundwater for dry periods for long term reliability.

**Table 3. Summary of the Non-quantified Benefits**

Agency	Non-quantified benefits
Local Water/ Wastewater Agencies	<ul style="list-style-type: none"> <li>• Water quality improvements</li> <li>• Increased water supply reliability</li> <li>• Energy &amp; chemical cost savings</li> <li>• Additional customer participation for other WUE programs through indirect marketing water efficiency programs</li> <li>• Greater attention by customers of the need for water conserving behaviors</li> </ul>
DWR	<ul style="list-style-type: none"> <li>• Water savings</li> <li>• Energy savings</li> </ul>
CALFED	<ul style="list-style-type: none"> <li>• More efficient water use.</li> <li>• More water for Bay Delta.</li> </ul>

The total annual monetary benefits per the Water Use Efficiency (WUE) PSP tables is \$73,602. The total annual project costs per the WUE PSP tables is \$338,914. Dividing the two, the benefit to cost ratio is 0.22. Another method to calculate benefit to cost ratio evaluates the total project costs over the life of the project, converts all the costs to a present worth value, then determines the ratio. This method only considers costs and benefits to the utility, and does not factor in third party costs or benefits. This method is used by the California Urban Water Conservation Council to determine the cost effectiveness of BMPs. The alternative method is presented below in Table 4 for the project. The life of the project is assumed to be 20 years, with all the other assumptions as presented above for each respective table discussion. As shown in Table 4, the benefit cost ratio is 0.24, indicating the project is significantly not cost effective to SSWD.

The District is requesting a 27 percent cost share. As shown in Table C-1, cost share is expected to help cover the installation and materials costs. SSWD intends to cover all project administrative and tracking costs. This proposed cost share is based on the extremely low benefit to cost ratio for the District compared to the significant benefits to the CBDA objectives by adding new water supplies to the system. The District must install water meters and a metered rate structure by 2025 as required by State Law, and by 2030 as required by the Water Forum Agreement. However, by accelerating the schedule to start installing the project now, the Bay Delta receives an additional 17 years of new water supply that otherwise would not be present. Therefore, the Bay Delta, in addition to other local and regional ecosystems and entities, receive benefits from this Project for an additional 17 years that they otherwise would not enjoy. The District's costs far outweigh the benefits it receives, and is therefore spending money that could otherwise be spent on projects and efforts that provide more benefit than cost. Although Table C-5 indicates the Bay-Delta receives at least half, if not more, of the benefit of this project, the District is aware of the limited grant funds available, and the spirit of Prop 50 to fund as many projects as possible. For these reasons, the District requests the grant for a 27 percent cost share to offset its costs of the project.

Table 4. Alternataive Benefit Cost Calculation

		(5)	Marginal Cost of Water (\$/AF) =	240										
		(9)	Discount rate (real) =	6%										
		(6)	Single-family water usage (gpd/unit) =	575										
		(2)	Water savings =	10%										
		(3)	Conservation measure unit cost (\$) =	800										
		(1)	Number of meters to install =	4,050										
Calendar Year	Number of Meters Installed per year	Incremental Water Savings (AF/yr)	Annual Water Savings (AF/yr)	Benefits (\$)					Costs (\$)					
				Avoided Capital Costs	Avoided Variable Costs	Avoided Purchase Costs	Total Undiscounted Benefits	Total Discounted Benefits	Capital Costs	Financial Incentives	Operating Expenses	Total Undiscounted Costs	Total Discounted Costs	
Assumptions	(1)	(2), (6)	(8)		(3), (5)			(9)	(1), (3)				(9)	
2002		0	0	0	0	0	0	0	0	0	0	0	0	
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	
2006	1,400	90	90	0	21,642	0	21,642	16,172	1,120,000	0	0	1,120,000	789,556	
2007	1,325	85	176	0	42,125	0	42,125	29,696	1,060,000	0	0	1,060,000	704,961	
2008	1,325	85	261	0	62,607	0	62,607	41,637	1,060,000	0	0	1,060,000	665,057	
2009		0	261	0	62,607	0	62,607	39,280	0	0	0	0	0	
2010		0	261	0	62,607	0	62,607	37,057	0	0	0	0	0	
2011		0	261	0	62,607	0	62,607	34,959	0	0	0	0	0	
2012		0	261	0	62,607	0	62,607	32,981	0	0	0	0	0	
2013		0	261	0	62,607	0	62,607	31,114	0	0	0	0	0	
2014		0	261	0	62,607	0	62,607	29,353	0	0	0	0	0	
2015		0	261	0	62,607	0	62,607	27,691	0	0	0	0	0	
2016		0	261	0	62,607	0	62,607	26,124	0	0	0	0	0	
2017		0	261	0	62,607	0	62,607	24,645	0	0	0	0	0	
2018		0	261	0	62,607	0	62,607	23,250	0	0	0	0	0	
2019		0	261	0	62,607	0	62,607	21,934	0	0	0	0	0	
2020		0	261	0	62,607	0	62,607	20,692	0	0	0	0	0	
2021		0	261	0	62,607	0	62,607	19,521	0	0	0	0	0	
2022		0	261	0	62,607	0	62,607	18,416	0	0	0	0	0	
2023		0	261	0	62,607	0	62,607	17,374	0	0	0	0	0	
2024		0	261	0	62,607	0	62,607	16,390	0	0	0	0	0	
2025		0	261	0	62,607	0	62,607	15,463	0	0	0	0	0	
<b>Totals:</b>	4,050	261	4,961	0	1,190,695	0	1,190,695	523,751	3,240,000	0	0	3,240,000	2,159,573	

11046

Results (to the applicant)	
Benefit cost ratio:	0.24

Note: Benefit to cost ratio is the sum of the total discounted benefits divided by the sum of the total discounted costs.

# **2004 Water Use Efficiency Proposal Solicitation Package**

## **APPENDIX A**

### **Project Information Form**

These forms are located at the front of the proposal.

**2004 Water Use Efficiency Proposal Solicitation Package**

**APPENDIX B**

**Signature Page**

## **2004 Water Use Efficiency Proposal Solicitation Package**

### **APPENDIX C**

#### **Project Costs and Benefits Tables**

- Table C- 1: Project Implementation Costs (Budget)
- Table C- 2: Annual Operations and Maintenance Costs
- Table C- 3: Total Annual Project Costs
- Table C-4: Capital Recovery Factor
- Table C- 5: Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)
- Table C- 6: Project Annual Local Monetary Benefits
- Table C- 7: Project Local Monetary Benefits and Project Costs
- Table C- 8: Applicant's Cost Share and Description

## **APPENDIX 1**

### **Rate Structure**

## **APPENDIX 2**

### **Plans and Specifications**

## Engineering Feasibility Statement

By signing below, the official declares the following:

I, \_\_\_\_\_, a California registered civil engineer, have reviewed the information presented in support of this application. Based on this information and any other information I have regarding the proposed project, I find that it can be designed, constructed, and operated to accomplish the purpose for which it is planned.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name and title

\_\_\_\_\_  
Date

## **APPENDIX 3**

### **Resume**

## **APPENDIX 4**

### **Bill Inserts**

**APPENDIX 5**

**Quarterly Newsletter**

## **APPENDIX 6**

### **Outreach Brochures**

**APPENDIX 7**

**Customer Notification Letters**

**APPENDIX 8**

**Public Workshop Notification**

**APPENDIX 9**

**Letters of Support**

**APPENDIX 10**

**Meter Retrofit Bid**

**Applicant: Sacramento Suburban Water District**

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

Section A projects must complete Life of investment, column VII and Capital Recovery Factor Column VIII. Do not use 0.

**Table C-1: Project Costs (Budget) in Dollars)**

	Category  (I)	Project Costs  \$ (II)	Contingency % (ex. 5 or 10)  (III)	Project Cost + Contingency  \$ (IV)	Applicant Share  \$ (V)	State Share Grant  \$ (VI)	Life of investment (years)  (VII)	Capital Recovery Factor  (VIII)	Annualized Costs  \$ (IX)
	Administration <sup>1</sup>								
	Salaries, wages	\$45,000	5	\$47,250	\$47,250	\$0	20	0.0872	\$4,120
	Fringe benefits	\$27,000	5	\$28,350	\$28,350	\$0	20	0.0872	\$2,472
	Supplies	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
	Equipment	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
	Consulting services	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
	Travel	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
	Other	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
(a)	Total Administration Costs	\$72,000		\$75,600	\$75,600	\$0			\$6,592
(b)	Planning/Design/Engineering			\$0		\$0			\$0
(c)	Equipment Purchases/Rentals/Rebates/Vouchers			\$0		\$0			\$0
(d)	Materials/Installation/Implementation	\$3,240,000	10	\$3,564,000	\$2,584,000	\$980,000	20	0.0872	\$310,781
(e)	Implementation Verification	\$5,000	10	\$5,500	\$5,500	\$0	20	0.0872	\$480
(f)	Project Legal/License Fees	\$5,000	10	\$5,500	\$5,500	\$0	20	0.0872	\$480
(g)	Structures			\$0		\$0			\$0
(h)	Land Purchase/Easement			\$0		\$0			\$0
(i)	Environmental Compliance/Mitigation/Enhancement			\$0		\$0			\$0
(j)	Construction			\$0		\$0			\$0
(k)	Other (Specify)			\$0		\$0			\$0
(l)	Monitoring and Assessment	\$10,000	5	\$10,500	\$10,500	\$0	20	0.0872	\$916
(m)	Report Preparation	\$10,000	5	\$10,500	\$10,500	\$0	20	0.0872	\$916
(n)	<b>TOTAL</b>	\$3,342,000		\$3,671,600	\$2,691,600	\$980,000			\$320,164
(o)	Cost Share -Percentage				73	27			

1- excludes administration O&M.

See text for assumptions

Applicant:

**Sacramento Suburban Water District**

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

**Table C-2: Annual Operations and Maintenance Costs**

Operations (1) (I)	Maintenance (II)	Other (III)	Total (IV) (I + II + III)
\$11,250	\$7,500	\$0	\$18,750

(1) Include annual O & M administration costs here.

**Table C-3: Total Annual Project Costs**

Annual Project Costs (1) (I)	Annual O&M Costs (2) (II)	Total Annual Project Costs (III) (I + II)
\$320,164	\$18,750	\$338,914

(1) From Table C-1, row ( n ) column (IX)

(2) From Table C-2, column ( IV )

See text for assumptions

**Table C- 4: Capital Recovery Table (1)**

Life of Project (in years)	Capital Recovery Factor
1	1.0600
2	0.5454
3	0.3741
4	0.2886
5	0.2374
6	0.2034
7	0.1791
8	0.1610
9	0.1470
10	0.1359
11	0.1268
12	0.1193
13	0.1130
14	0.1076
15	0.1030
16	0.0990
17	0.0954
18	0.0924
19	0.0896
20	0.0872
21	0.0850
22	0.0830
23	0.0813
24	0.0797
25	0.0782
26	0.0769
27	0.0757
28	0.0746
29	0.0736
30	0.0726
31	0.0718
32	0.0710
33	0.0703
34	0.0696
35	0.0690
36	0.0684
37	0.0679
38	0.0674
39	0.0669
40	0.0665
41	0.0661
42	0.0657
43	0.0653
44	0.0650
45	0.0647
46	0.0644
47	0.0641
48	0.0639
49	0.0637
50	0.0634

(1) Based on 6% discount rate.

Applicant: **Sacramento Suburban Water District**

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5220

**Table C-5 Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)**

	Qualitative Description - Required of all applicants <sup>1</sup>				Quantitative Benefits - where data are available <sup>2</sup>
	Description of physical benefits (in-stream flow and timing, water quantity and water quality) for:	Time pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay Delta benefit is Direct <sup>3</sup> Indirect <sup>4</sup> or Both	Quantified Benefits (in-stream flow and timing, water quantity and water quality)
Bay Delta	Increased flow in American River through Sacramento River to Bay Delta system. Improved flexibility in operations and management of Bay Delta system. New supply is high quality, diluting other less-quality waters in the Bay Delta system. Improved ecosystem habitat in American River, Sacramento River, and Bay Delta.	May through October, in American River, into Sacramento River, and then into Bay Delta System	Indefinite, once metered rate instituted, will not go back to flat rate	Direct benefit by increasing new water supply into Bay Delta System.	At least 131 AF per year of new surface water from American River into Bay Delta system
Local	Decreased demand on groundwater basin, improved flexibility in groundwater basin management. Improved ecosystem conditions in lower American and Sacramento Rivers.	November through April in the Sacramento Area Groundwater Basin	Indefinite, once metered rate instituted, will not go back to flat rate	<b>Not applicable.</b>	Reduce groundwater basin withdrawal by 131 AF/yr

<sup>1</sup> The qualitative benefits should be provided in a narrative description. Use additional sheet.

<sup>2</sup> Direct benefits are project outcomes that contribute to a CALFED objective within the Bay-Delta system during the life of the project.

<sup>3</sup> Indirect benefits are project outcomes that help to reduce dependency on the Bay-Delta system. Indirect benefits may be realized over time.

<sup>4</sup> The project benefits that can be quantified (i.e. volume of water saved or mass of constituents reduced) should be provided.

**See text for assumptions**

Applicant:

Sacramento Suburban Water District

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

**Table C-6 Project Annual Local Monetary Benefits**

ANNUAL LOCAL BENEFITS	ANNUAL QUANTITY	UNIT OF MEASUREMENT	ANNUAL MONETARY BENEFITS
(a) Avoided Water Supply Costs (Current or Future Source)	261	AF/yr @ \$240/AF	\$62,640
(b) Avoided Energy Costs	261	AF/yr @ \$42/AF	\$10,962
(c) Avoided Waste Water Treatment Costs	0		\$0
(d) Avoided Labor Costs	0		\$0
(e) Other (describe)	0		\$0
(f) Total [(a) + (b) + (c) + (d) + (e) ]			\$73,602

**Table C-7 Project Local Monetary Benefits and Project Costs**

(a) Total Annual Monetary Benefits [(Table C-6, row (f))	\$73,602
(b) Total Annual Project Costs (Table C-3, column III)	\$338,914

**Table C-8 Applicant's Cost Share and Description**

Applicant's cost share %: (from Table C-1, row o, column V)	<b>73</b>
Describe how the cost share (based on relative balance between Bay-Delta and Local Benefits) is derived. (See Section A-7 for description.)	
Provide Description in a narrative form.	

See text for assumptions