WaterSMART: Water and Energy Efficiency Grants for FY2014

FOA R14AS00001

SACRAMENTO REGIONAL RESIDENTIAL WATER METER INSTALLATION PROJECT

SACRAMENTO COUNTY, CA

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Executive Summary

Date:	January 23, 2014
Applicant:	Sacramento Suburban Water District
City:	Sacramento
County:	Sacramento
State:	California

This is a collaborative project between two large municipal water supply agencies in the Sacramento region, with the Sacramento Suburban Water District acting as the lead applicant. The City of Sacramento is a partner. The proposed project will install 3,665 residential water meters to achieve water savings estimated at 518 acre-feet per year or 10,360 acre-feet over the 20-year expected lifetime of the improvements. This municipal metering project will result in significant conservation of valuable water resources, which directly contribute to the goals of the WaterSMART Program. The project will improve water use efficiency, reduce energy demands, benefit local aquatic species, and can potentially be made available to water market opportunities. The cooperating agencies have committed $3,643,168 in non-federal cost share to be matched with the $300,000 from the WaterSMART Grant.

The project will continue for two years commencing by October 1, 2014 and concluding by September 30, 2016.

The project is not located on a Federal facility.

Background Data

The project locations are all in Sacramento County, California within the service areas of the project partners as shown in the figure on the following page. More detailed service area maps indicating the proposed meter retrofit projects for each of the participants are shown in **Attachment 1**.

Sources of Water Supply. The average annual water supply of the participating agencies is shown in the table below. For the past five years through 2012, the participants have supplied an average of 153,349 acre-feet to primarily urban users. Of this supply, 73% was surface water (SW in table) and 27% was groundwater (GW in table). The entire water supply is within the Sacramento-San Joaquin Bay-Delta watershed.

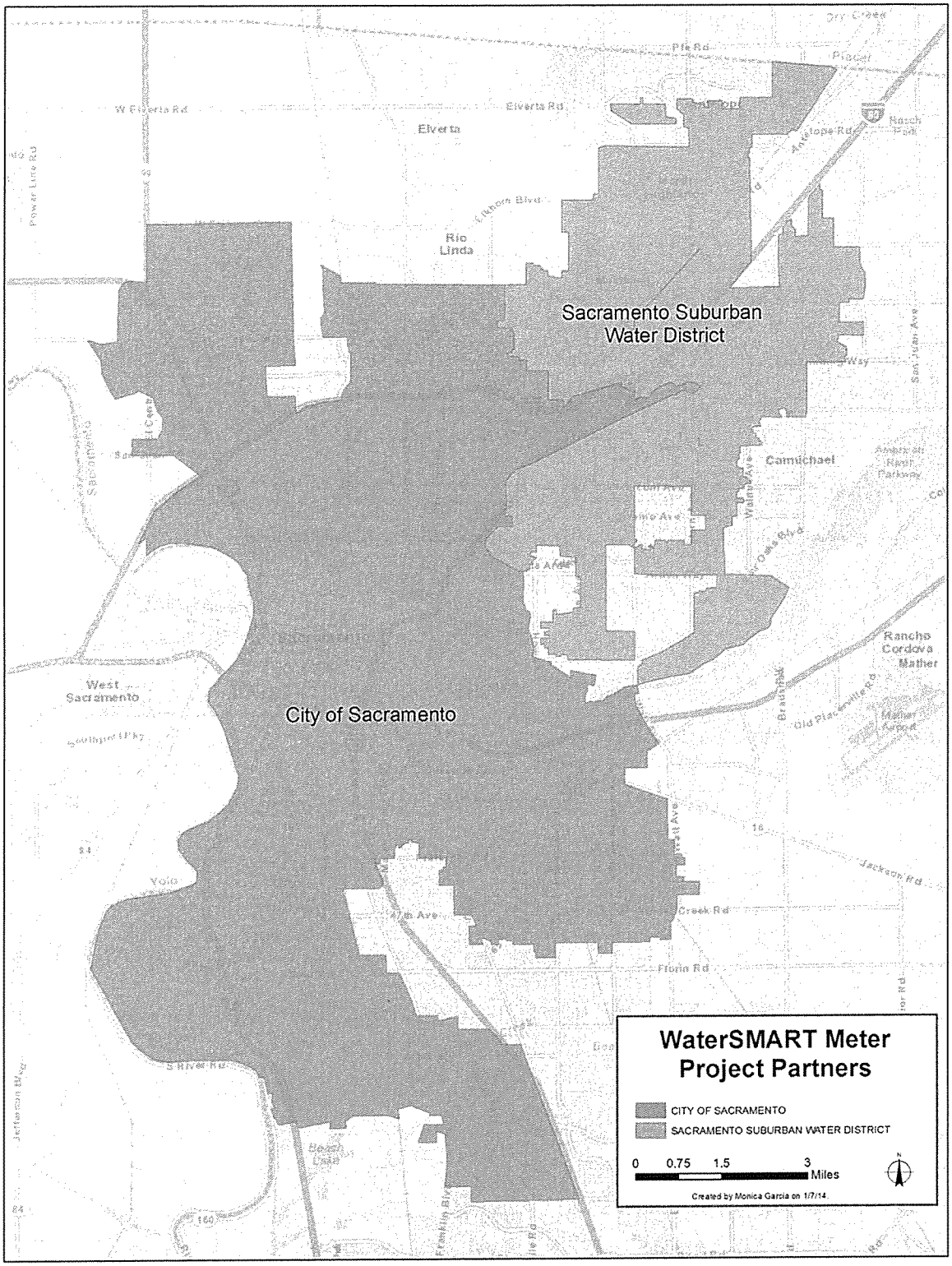
Five Year Average Water Production of Participants (acre-feet)

	Sacramento Suburban WD		City of Sacramento	
	SW	GW	SW	GW
2008	14,982	23,516	108,880	20,391
2009	12,084	23,021	99,575	20,059
2010	16,208	20,178	92,254	18,387
2011	16,709	19,119	90,578	18,210
2012	10,559	27,530	99,890	14,617

Water Rights Involved. The sources of surface water supply for the participating agencies along with the nature of surface water rights are described below. Groundwater is an overlying and appropriative right, which does not require a permit in California.

Sacramento Suburban Water District. SSWD obtains surface water through various purchase agreements. Surface water supplies include surface water from Placer County Water Agency (PCWA), the City of Sacramento, and occasional Section 215 Central Valley Project (CVP) water from the United States Bureau of Reclamation (Reclamation). The PCWA water supply ranges from 12,000 to 29,000 acre-feet per year (ac-ft/yr) and is available when the March through November unimpaired inflow into Folsom Reservoir is greater than 1,600,000 acre-feet (ac-ft). SSWD is eligible to purchase Section 215 Reclamation CVP water when it is available in average and wet water years. SSWD has an agreement with the City of Sacramento to receive up to 20 million gallons per day (mgd) of American River water.

City of Sacramento. Sacramento has a pre-1914 right to divert up to 75 cubic feet per second from the Sacramento River. Sacramento also has 245,000 ac-ft appropriative surface diversion from American River under Reclamation Settlement agreement; 81,000 ac-ft appropriative surface diversion from Sacramento River under Reclamation Settlement agreement.



Service Area Boundaries of Project Partners

Current Water Uses. Total 2010 water use of the project partners was 124,808 ac-ft. The classification of water use of the participating agencies is included in the table below. The data are from 2010 Urban Water Management Plan (UWMP) updates submitted to the California Department of Water Resources.

Annual Water Use by Customer Class (acre-feet)

Customer Category	SSWD	City of Sacramento
Single Family Residential	15,978	37,362
Multi-Family Residential	10,330	21,672
Commercial, Industrial, Institutional	5,421	26,178
Landscape	1,019	4,777
Other	0	2,071
Total	32,748	92,060

Number of Water Users Served. The number of connections by customer class and total population served of the participants is provided in the table below. All information is from 2010 UWMPs.

Current Customer Connections and Population Served

	SSWD	City of Sacramento
Single Family Residential Accounts	37,366	113,375
Multi-Family Residential Accounts	3,830	9,865
Commercial, Industrial, Institutional Accounts	2,610	9,079
Landscape Accounts	377	1,377
Total Accounts	44,183	133,696
Population Served	170,615	466,488

Current and Projected Water Demand. The current and projected demand of each of the participants in listed in the table below. All information is from 2010 UWMPs.

Current and Projected Water Demand (acre-feet)

Year	SSWD	City of Sacramento
2010	32,748	92,060
2020	34,833	138,303
2030	36,363	160,101

Potential Shortfalls in Water Supply. The participants do not project shortfalls of water supply. Each of the participants have developed programs to ensure local supplies result in regional self-sufficiency under nearly all conditions. These include conjunctive use programs to match supply with hydrologic conditions and conservation measures to further reduce demands during severe drought conditions.

Water Delivery System. The water delivery facilities of the participating agencies are described further below.

Sacramento Suburban Water District. Water supply for SSWD is currently derived from active groundwater wells and surface water from Folsom Reservoir via the Peterson Water Treatment Plant (WTP) operated by San Juan Water District. SSWD's water supply also includes surface water from the American River from the City of Sacramento's Fairbairn WTP. SSWD has a total of 89 active wells with a combined capacity of 98,390 gallons per minute (gpm). All of the wells pump directly into the distribution system.

SSWD has three pump stations, seven storage tanks with a total storage capacity of more than 15 million gallons, and 45 interconnections for emergency purposes with neighboring districts. The entire distribution system consists of approximately 682 miles of pipeline ranging from 48-inch mains down to 4-inch laterals.

City of Sacramento. Sac City's existing distribution system consists of water supply and treatment facilities, two pressure zones, groundwater wells, storage tanks, pumping facilities, and distribution/transmission pipelines. Sac City treats surface water diverted from the Sacramento and American Rivers with two water treatment facilities: the Sacramento River Water Treatment Plant (SRWTP) and the Fairbairn Water Treatment Plant (FWTP).

High capacity pumps at each of the treatment plants pump water directly into the distribution system creating a pressure zone that encompasses the majority of the City. The Bell Avenue Booster Pump Station is an in-system booster pump station that creates a small pressure zone in the northeastern part of Sac City. Sac City currently operates thirty-two municipal groundwater supply wells; thirty wells are located in the northern portion of the City, north of the American River, while the remaining two are located south of the American River. Fourteen additional wells are operated separately from the drinking water system and are used to meet irrigation demands of City parks. The total pumping capacity of the City's municipal supply wells is approximately 33 million gallons per day (mgd), or about 30 mgd assuming that only 90 percent are available at any given time.

The City currently has fifteen storage facilities: ten storage tanks are located throughout the City, while five clearwells are located at the WTPs (two at FWTP and three at SRWTP). The total pumping capacity of the City's system is 647 mgd (firm capacity of 533 mgd). The City maintains just over 1,400 miles of transmission and distribution system mains ranging in size from 4 to 60 inches in diameter; only 130 miles consists of pipe that are 12 inches in diameter or larger.

Past Working Relationships with Reclamation.

- SSWD led a similar successful collaborative effort in 2009 to install residential water meters. That project was funded by a USBR WaterSMART ARRA award. The project exceeded expectations. In total, 12,009 residential meters and 4 bulk water meter stations were installed with the combined local and grant shares. This compared to the original estimate of 9,743 residential meters and one bulk meter station as submitted in the original application. Additionally, we calculate that the grant funded portion of the project resulted in an average of 24.6 jobs created over the year of meter installations. This compared to our original

estimate of 23 jobs created. The grant was managed by RWA on behalf of the recipients, with all reporting meeting Reclamation schedules.

- SSWD was awarded an FY2012 USBR Bay-Delta Restoration Program Grant (Agreement R12AP20029) for a regional effort to install 4,021 meters in the Sacramento region. That effort is currently ongoing, with more than 2,290 meters installed through September 30, 2013. None of the meter projects in the current application are part of the past award.
- SSWD was awarded an FY2012 WaterSMART: Water and Energy Efficiency Grant (Agreement R12AP20033) for the installation of an "in-conduit hydro" project for Sacramento Suburban Water District. That effort is currently ongoing with plans at the 50% level and discussions with the local utility, Sacramento Municipal Utilities District (SMUD) over purchase of the power generated from the project. The grant award is currently set to expire on September 30, 2014. SSWD is working with Reclamation to seek an extension due to delays caused by the power purchase negotiations with SMUD.
- SSWD was awarded an FY2013 USBR Bay-Delta Restoration Program Grant (Agreement R13AP20052) for a regional effort to install 5,953 meters in the Sacramento region. That effort is currently ongoing. None of the meter projects in the current application are part of the past award.

Technical Project Description

The project includes installation of 3,665 water meters on existing residential service connections. A current standard detail for a ¾-inch (in) or 1-in residential meter is shown in **Attachment 2**. The majority of residential customers have either a ¾-in or 1-in service, with some connections up to 2-inches. The feasibility of the project is well-established; the participants have extensive experience with planning and design on such projects having completed more than 50,000 residential meter installations since 2004. The project includes the following tasks:

Task 1. Project Management: The RWA project manager will oversee all aspects of the grant requirements on behalf of the participants to ensure they are in full compliance with funding terms. This will include coordination with Reclamation staff and ensuring that the participants complete their respective tasks as described below in compliance with applicable terms.

Task 2. Environmental Documentation: A categorical exemption will be prepared per California Environmental Quality Act (CEQA) requirements by each of the participants prior to commencement of the construction element of the project. Each participant will provide a detailed plan map of their respective project areas to Reclamation for completion of the appropriate level of National Environmental Policy Act (NEPA) compliance prior to any ground disturbing activities.

Task 3. Final Design: Each participating agency will utilize in-house staff to finalize the plans and details required for their respective project areas to go out to bid for the project. The standard meter installation detail specifications for the participating agencies are provided for reference in Attachment 2. Final design will include specifying the type of installation appropriate for a specific area (e.g., meters in sidewalk, landscaping, driveway, etc.).

Task 4. Contractor Selection: Upon design completion, each participant will prepare bid documents, advertise the project, solicit bids to install meters, and identify a contractor through a competitive selection process consistent with funding agreement criteria.

Task 5. Meter Installation: The selected contractor will install the meters on existing service connections as shown on the service area figures provided in Attachment 1 for each of the participants. Each participant will perform its own construction installation inspections.

Task 6. Performance Reporting: RWA staff will compile information submitted by participating agencies and prepare consolidated reports for submission to Reclamation. Specific reporting includes:

a. prepare semi-annual (or other frequency as specified by Reclamation) reports and reimbursement invoices of the combined participants for submission to Reclamation;
b. preparation of the final project report at conclusion of the project;
c. preparation of a minimum of two annual post-project reports to track expected versus actual water savings (described in Performance Measures and Project Monitoring section of the application below). Note that this is not included in the project schedule or budget, because it will extend beyond the project agreement deadline.

Evaluation Criteria

Evaluation Criterion A: Water Conservation

Subcriterion No. A.1.—Water Conservation

Subcriterion No. A.1(a)—Quantifiable Water Savings

Describe the amount of water saved. The project will result in savings of 518 ac-ft/yr. This is based on assuming an average of 126.1 gallons per day savings at each of the 3,665 households to receive meters with subsequent volumetric billing. ((126.1 gal/day x 365 days/yr x 3,665 units)/325,851 gal/ac-ft = 518 ac-ft/yr). A detailed discussion of the basis for each of these assumptions is provided in the **"How has the estimated average annual water savings that will result from the project been determined?"** and the **"For individual water user meters installation, refer to studies in the region or in the applicant's service area that are relevant to water use patterns and the potential for reducing such use."** See sections below.

What is the applicant's average annual acre-feet of water supply? Total 2010 estimated water supply of the project partners was 147,027 ac-ft. Total 2010 water use of the project partner customers was 124,808 ac-ft. Most of the difference between the supply and demand can be attributed to water distribution system losses.

Where is that water currently going? Water that is not consumptively used is primarily returned back to local streams and rivers. Some portion seeps into the groundwater basin.

Where will the conserved water go? The majority of the water conserved by the project remains in Folsom Reservoir, which is managed by Reclamation for water supply deliveries

through the Central Valley Project. With Folsom Reservoir being the nearest upstream reservoir to the California Bay-Delta, this optimizes Reclamation's ability to make the water available for other critical needs (e.g., urban, agriculture, environment, Delta salinity management) in a short period of time. The remaining conserved water remains in the regional groundwater basin, which benefits regional supply reliability. This further benefits Reclamation by allowing local agencies to rely on groundwater during dry periods, which improves operational flexibility.

How has the estimated average annual water savings that will result from the project been determined? The estimated savings resulting from the project are based on a large amount of recent data reported by participating agencies in their 2010 UWMP updates. The data are shown in the two tables below with accompanying discussion.

For 2010 UWMP updates, each participant calculated a five year average (2003 through 2007) of gross per person water usage. This is derived by dividing the population served by the total water produced. While this method gives a barometer of relative water usage of a given supplier, it may overstate the savings potential of a conservation measure. For example, not all of the water produced makes its way directly to the consumer. To correct for this, we assumed that 10% of the water produced was lost through system leaks. Therefore, we reduced the assumed per person usage by 10%. Next, we relied on U.S. Census Bureau data to determine the average persons per household, which is 2.7 for Sacramento County (www.quickfacts.census.gov). By multiplying the corrected per person usage by the persons per household, we were able to calculate the total daily usage per household in gallons for baseline usage.

Calculation of Project Baseline Usage

Agency	2003-2007 Gross Per Person Usage (gallons)	Per Person Usage with 10% System Loss Assumed (gallons)	Persons Per Household	Daily Use Per Household (gallons)
SSWD	235	212	2.7	571
City of Sacramento	267	240	2.7	649

With the baseline usage established, we were able to calculate the savings potential of the project. We assumed that we could achieve a 20% average annual savings from installing a meter. This is supported by a CUWCC 2004 BMP Costs and Savings Study. By applying the 20% savings, we were able to determine the daily savings per household in gallons. We then multiplied this by the number of meters to be installed in each of the participating agencies and converted the result to annual water savings in acre-feet (multiplied daily result by 365 days/year and divided result by 325,851 gallons per acre-foot). We then assumed a reasonable life expectancy of the meters of 20 years. This assumption is supported by American Water Works Association Manual M6, which indicates that the accuracy for old water service meters is expected to be between 15 and 25 years. We assumed an average in the middle of this range.

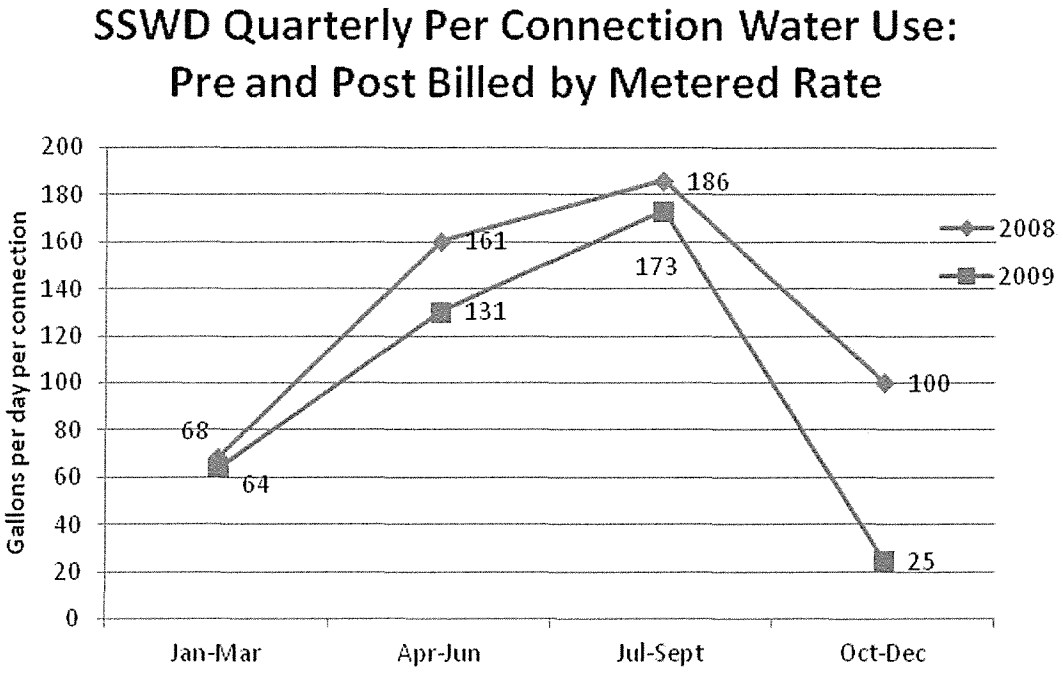
Calculation of Project Savings Potential

Agency	Daily Savings Per Household (gallons)	Number of Meters to be Installed	Total Annual Water Savings (acre-feet)	Total 20-year Lifetime Savings (acre-feet)
SSWD	114	866	111	2,220
City of Sacramento	130	2,799	407	8,140
Totals		**3,665**	**518**	**10,360**

The project will demonstrably improve water management through direct measurement of consumption using meters. In 2004, the California Urban Water Conservation Council (CUWCC) published the BMP Cost and Savings Study confirming that meters combined with commodity based water rates (or volumetric pricing on amount used by the customer) are effective in driving consumer behavior to improved water management by reducing their water consumption. The CUWCC estimated 20 percent savings associated installing meters, which is the basis for the savings calculation in this application.

How have current distribution system losses and/or the potential for reductions in water use by individual users been determined? The detailed calculations for the potential water savings are described in the above section and confirmation of the appropriateness of these estimates is described in the section below.

For individual water user meters installation, refer to studies in the region or in the applicant's service area that are relevant to water use patterns and the potential for reducing such use. Water savings from meters is estimated to be a 20 percent reduction of each customer's pre-metered usage. This is based on California Urban Water Conservation Council 2004 Cost and Savings Study Report. SSWD has verified that this estimate is accurate by analyzing the pre and post meter water use results for over 2,300 SSWD connections. SSWD recorded water use from these customers that recently received meters in 2008 and 2009. An analysis of the pre (metered water use while still on flat rate) and post (metered water use on a metered inclining block rate) meter monthly water use data for these connections indicates that metered customers (on a metered rate) used 24% less water following receiving meters the previous year. This data is presented in the graphic below.



Note: Data based on 2008 and 2009 water use from 2,361 newly metered SSWD connections.

If installing distribution main meters will result in conserved water, please provide support for this determination (including, but not limited to leakage studies, previous leakage reduction projects, etc.). This is not part of the proposed project.

What types (manufacturer and model) of devices will be installed and what quantity of each? The project includes installation of 3,665 residential water meters on existing service connections. Standard details for a residential meter retrofits for each of the participants is shown in **Attachment 2**. The precise manufacturer and model would be determined as part of the competitive selection process to procure an installation contractor. All meters are subject to performance criteria established by the American Water Works Association.

How will actual water savings be verified upon completion of the project? Actual water savings will be verified using the following procedure:

1. After a meter is installed, the customer will begin receiving water usage data while still being billed on a flat-rate basis for one year as required by California law. In some cases, the customer will receive the data in excess of one year as entire service areas are converted to volumetric data at one time.
2. The participants will generate reports of monthly customer usage data for the service areas included in this project and will provide the data to RWA, which will compile the data in a spreadsheet for a minimum of two years post-installation.
3. When volumetric data commences, the data will be compared on a month over month basis (e.g., January 2016 to January 2017) for savings. This will occur for an entire annual cycle to observe not only annual water savings, but savings during higher use periods (e.g., July).

4. When comparisons of flat-rate to volumetric rate savings area made, we will examine monthly temperature and precipitation data for deviations from average conditions to correct for weather conditions that could influence savings.

Subcriterion No. A.1(b)—Improved Water Management

Describe the amount of water better managed. The installation of a meter at a residence provides an opportunity for both the supplier and consumer to better manage supply. Therefore, it was assumed that the average annual water use by each of these customers is subject to better management. Assuming 3,665 customers to receive meters, an estimated 2,597 AF per year will be subject to being better managed by Reclamation and local utilities as a result of this project. The data used in making this calculation are shown in the table below broken down by each participating agency. Additionally, these efficiency improvements will have a direct benefit of assisting with maximizing operational flexibility in times of peak summer demands. For example, water savings will have the potential benefit of adding to storage to Folsom Reservoir and its cold water pool that can be optimized for releases to the Bay-Delta and downstream users.

Summary of Water Better Managed

Agency	Daily Use Per Household (gal)	Annual Use Per Household (ac-ft)	# of Households	Total Water Better Managed (ac-ft/year)
SSWD	571	0.64	866	554
City of Sacramento	649	0.73	2,799	2,043
Total			**3,665**	**2,597**

The percent of average annual supply to be better managed is 2.1 (2,597 ac-ft better managed/124,808 ac-ft 2010 annual demand).

Subcriterion No. A.2.—Percentage of Total Supply

Provide the percentage of total water supply conserved: The percent of average annual water supply to be conserved is 0.4 (518 ac-ft annual conserved/124,808 ac-ft 2010 annual demand).

Subcriterion No. A.3.—Reasonableness of Costs

Total Project Cost = $3,943,168
Acre-Feet Conserved = 518
Water Better Managed = 2,597
Improvement Life = 20

From a water conservation perspective, the cost to benefit of the project is $381 per ac-ft. From a water better managed perspective, the cost to benefit is $76 per ac-ft. From either perspective, these are reasonable costs relative to the cost of new potable water supply.

We assumed a reasonable life expectancy of the meters of 20 years. This assumption is supported by American Water Works Association Manual M6, which indicates that the accuracy for old water service meters is expected to be between 15 and 25 years. We assumed an average in the middle of this range.

Evaluation Criterion B: Energy-Water Nexus

Subcriterion No. B.1.—Implementing Renewable Energy Projects Related to Water Management and Delivery
This subcriterion is not applicable to the proposed project.

Subcriterion No. B.2.—Increasing Energy Efficiency in Water Management

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water management project. The project is expected to reduce annual energy demand by 240,950 KWh resulting in an estimated reduction in greenhouse gas emissions of 172,000 lbs, as described further in the section below. Energy/greenhouse gas emission benefits are significant from this project given irrigation demands peak in July and August when electricity loads in the region also peak. Electric utilities are forced to import less clean alternative fuels to meet maximum peak demands. For example, Sacramento Municipal Utilities District (SMUD) imports power from natural gas field in New Mexico rather than rely on its wind, solar or hydroelectric sources of power. The participating agencies are in the top 20-consuming customers list for SMUD.

Please provide sufficient detail supporting the calculation of any energy savings expected to result from water conservation improvements. If quantifiable energy savings are expected to result from water conservation improvements, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year. SMUD estimates that on average 1 kWh is saved for every 700 gallons of water delivered within its service area. As a result, this project is estimated to save more 168 million gallons of water each year, which equates to an annual savings of over 240,950 KWh for the 3,665 site improvements. SMUD electricity has an annual average of 714 lbs of CO2 emissions per MWh (Climate Action Registry Report, SMUD, 2007). As a result, this project can save more than an estimated 172,000 lbs of CO2 emissions per year and over the lifetime of 20 years can save on the order of 3.4 million lbs of CO2 emissions associated with the 3,665 sites receiving meters.

Please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements? The participants have a combined more than 150 municipal groundwater wells in the basin with capacities commonly in the 1,000 gallon per minute (gpm) to 2,000 gpm range. Conservation resulting from the proposed project would directly contribute to reduced pumping demands. The amount of reduction would vary by year (wet vs. dry), but the savings estimate of 1 KWh reduction for every 700 gallons saved represents an average of this variability in the region.

Please indicate whether you energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin. The savings estimates are assumed from the point of diversion.

Does the calculation include the energy required to treat the water? The calculation includes the energy required to treat the water.

Will the project result in reduced vehicle miles driven, in turn reducing carbon emissions? Please provide supporting details and calculations. The project is not expected to reduce the vehicle miles driven.

Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system). This is not applicable to the proposed project.

Evaluation Criterion C: Benefits to Endangered Species

For projects that will directly accelerate the recovery of *threatened or endangered species or address designated critical habitats.*

(1) How is the species adversely affected by a Reclamation project? Reclamation projects on the American and Sacramento rivers have modified flow regimes and increased exports of water from the region. Fish species relying on the American River and lower Sacramento River include the endangered winter-run Chinook Salmon, the threatened spring-run Chinook Salmon, and the threatened Steelhead Trout. Approximately 20 miles of the lower American River to the confluence with the Sacramento River and an approximate 40 mile stretch of the lower Sacramento River have been identified under the Endangered Species Act as being critical habitat would be positively impacted by this project.

(2) Is the species subject to a recovery plan or conservation plan under the Endangered Species Act? We are uncertain of the status of recovery or conservation plans for these species.

(3) What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species? This project will improve the volume or flow regimes of water through the habitat area during dry years because this project expands the ability to implement conjunctive use of groundwater and surface water. In particular, this will result in sustaining flows in the lower American River during dry years by providing groundwater to the surface water users thereby reducing their demand on the American River. Conserved water can be maintained in Folsom Reservoir later into the season. This could also improve the temperature of water being released, which benefits these species.

Evaluation Criterion D: Water Marketing

Briefly describe any water marketing elements included in the proposed project. Because each of the collaborating agencies has adequate supplies for their existing and future planned customers, the water conserved by the project could be made available to water markets. Each of

the agencies is participating in Reclamation's Mid-Pacific Region's effort to create a Long Term Water Transfers Program (LTWT), which is still under development. Local agencies have already demonstrated the feasibility of making banked water available for exchange, including more than 7,000 ac-ft that was available to the Reclamation/California Department of Water Resources' (DWR) Environmental Water Account in 2002. The City of Sacramento and SSWD participated in this project and provided water to the 2002 exchange. Additionally, these agencies worked with Reclamation and DWR to provide more than 10,000 ac-ft of water to the 2009 California Drought Water Bank and SSWD provided nearly 5,000 ac-ft to a 2010 Banking Program managed under DWR.

(1) Estimated amount of water to be marketed. The entire annual conserved water of 518 ac-ft could be made available for marketing.

(2) A detailed description of the mechanism through which water will be marketed (e.g., individual sale, contribution to an existing market, the creation of a new water market, or construction of a recharge facility). Each of the participants would be responsible for their own marketing efforts. The mechanisms would include individual year markets that typically arise under dry conditions and participation in the LTWT as managed by Reclamation.

(3) Number of users, types of water use, etc. in the water market. Water made available by local agencies to these bank programs typically remains in Folsom Reservoir, which is managed by Reclamation for water supply deliveries through the Central Valley Project. With Folsom being the nearest upstream reservoir to the California Bay-Delta, this optimizes Reclamation's ability to make the water available for other critical needs (e.g., urban, agriculture, environment, Delta salinity management) in a short period of time.

(4) A description of any legal issues pertaining to water marketing (e.g., restrictions under Reclamation law or contracts, individual project authorities, or State water laws). As evidenced by the ability to participate in the programs listed above, legal issues are not a significant impediment to providing water to a regional or state-managed market. Depending on the nature of the water right (most often a Reclamation Settlement Agreement or a State Board permit), transfers are usually subject to the Warren Act or to approval of the State Water Resources Control Board.

(5) Estimated duration of the water market. The estimated length of savings of the conserved water from this project is 20 years, so individual year transfers could be made throughout that period. The LTWT program is intended to be in place for 10 years.

Evaluation Criterion E: Other Contributions to Water Supply Sustainability

For projects that include other benefits to water supply sustainability.

(a) Will the project make water available to address a specific concern? Yes, the water conserved from this project will be available to address several of the specific concerns listed in this application as described below.

(i) Will the project address water supply shortages due to climate variability and/or heightened competition for finite water supplies (e.g., population growth or drought)? Is the river, aquifer or other source of supply over-allocated? Climatologists predict that climatic warming trends will result in a decline of up to 40 percent of the Sierra snowpack, earlier runoff in the January to March flood season, more frequent and severe droughts. Combined with population growth projections, the climatic warming trends will further exacerbate the conflicts for adequate urban and agricultural water supplies in California. Reducing demands immediately through the proposed project will help mitigate against those impacts. Additionally, both the lower American River and Folsom Reservoir have been significantly over-allocated among competing resources. Part of the solution to the conflict created by this is the Sacramento area Water Forum Agreement, which is described in the collaboration among parties question below. This project is a needed component to help implement the Water Forum Agreement.

(ii) Will the project market water to other users? If so, what is the significance of this (e.g., does this help stretch water supplies in a water-short basin)? While this is not specifically a project to market water, the conserved water would be available for transfer. This has already been demonstrated through SSWD's and the City of Sacramento's participation in past state and federal environmental and drought banking programs as described in the Water Marketing criterion above.

(iii) Will the project make additional water available for Indian tribes? This criteria is not applicable. There are no tribes in the service areas of the participants.

(iv) Will the project help to address an issue that could potentially result in an interruption to the water supply if unresolved? (e.g., will the project benefit an endangered species by maintaining an adequate water supply)? Are there endangered species within the basin or other factors that may lead to heightened competition for available water supplies among multiple water uses? As described in the Benefits to Endangered Species criterion above, there are endangered species that will benefit from the conserved water. The project itself is a result of the Sacramento area Water Forum Agreement, which seeks to provide for an uninterrupted water supply while protecting the lower American River and its inhabitants. The project is an essential component of achieving these results.

(v) Will the project generally make more water available in the water basin where the proposed work is located? Yes, more water will be available in the basin. The conserved water is not needed to accommodate future growth in the region, so it will benefit the broader water basin.

(b) Does the project promote and encourage collaboration among parties? The project is one of many actions being taken as a direct result of a significant collaborative effort in the greater Sacramento region. Though the Sacramento region is proximate to more plentiful water resources than other regions of the state, conflicts still occur. In recognition of over-appropriation of water rights on the American River and future growth pressures, the Sacramento Water Forum began negotiations starting in 1993 to develop a plan for balancing long-term demand growth with the need to protect the lower American River. The Water Forum Agreement was signed in April 2000 by 40 diverse stakeholder interest groups including 19 local water purveyors, and addresses foreseen issues in water management to meet the region's needs through 2030. Among several other key elements, the Water Forum Agreement signatories committed to both conserving water and reducing American River diversions in dry years for the

protection of critical species and habitat. Reclamation has been an important partner in implementation of this Agreement. The Water Forum Agreement was recognized in 2000 the United States Environmental Protection Agency for Outstanding Environmental Achievement.
(i) Is there widespread support for the project? The Water Forum, as a representative of the 40 diverse stakeholder groups signing the Water Forum Agreement, has provided a letter of support for the project. In general, implementation of conservation measures enjoys broad stakeholder support.
(ii) What is the significance of the collaboration/support? Both the Water Forum process and the partnering of the agencies into this regional project represent significant collaboration among parties in the region.
(iii) Will the project help to prevent a water-related crisis or conflict? The project directly implements one of the components of the Water Forum Agreement to improve water use efficiency. Implementation of the Agreement prevents water-related crisis from emerging again in the region.
(iv) Is there frequently tension or litigation over water in the basin? Historically, there was much litigation and tension in the region. Again, the Water Forum Agreement was negotiated over a seven year period to resolve these issues. The project is a necessary component for implementing the Agreement.
(v) Is the possibility of future water conservation improvements by other water users enhanced by completion of this project? Yes, future conservation improvements will be enhanced by implementing this project. In particular, the expense of installing meters is particularly high. Because these projects are not locally cost-effective (i.e., the value of the water conserved is less than the cost of the infrastructure improvements), the funds help incentivize continued investments in water conservation measures.

(c) Will the project increase awareness of water and/or energy conservation and efficiency efforts? The project results in greater customer awareness of their water use and creates cost signals for customers to improve their water efficiency.
(i) Will the project serve as an example of water and/or energy conservation and efficiency within a community? During implementation of the project, each customer receives outreach materials, which help increase community awareness of water efficiency. Subsequent to installation, customers receive use information and volumetric water billing that will also help increase water conservation in the community.
(ii) Will the project increase the capability of future water conservation or energy efficiency efforts for use by others? The project greatly improves capability for future water conservation by customers. It is necessary to provide customers information on their water use through meters and volumetric pricing in order to promote and encourage greater efficiency.
(iii) Does the project integrate water and energy components? While the project does not directly integrate water and energy components, it does reduce energy demand as described in the Energy-Water Nexus section in the application above.

Evaluation Criterion F: Implementation and Results

Subcriterion No. F.1.—Project Planning

Does the project have a Water Conservation Plan, System Optimization Review (SOR), and/or district or geographic area drought contingency plans in place? Each participant has a Conservation Plan and Water Shortage Contingency Plan as part of their 2010 updates to their respective Urban Water Management Plans (UWMPs). Each UWMP of the participants has been determined as complete by the California Department of Water Resources. Each agency participated in a regional System Optimization Review (SOR) completed in December 2012. The SOR grant was awarded to the San Juan Water District (Agreement R10AP20125) to evaluate the lower American River Basin region.

(1) Identify any district-wide, or system-wide, planning that provides support for the proposed project. The regional SOR identified increasing water use efficiency as a key objective. Each of the proposed projects is indentified as a high priority for implementation in the SOR. At the district level, each project has been prioritized in the capital improvement plans of the respective agencies over the next two years.

(2) Identify and describe any engineering or design work performed specifically in support of the proposed project. Sample specifications for residential meter installations of each of the participants are included in Attachment 2 of this application. The participants have extensive experience with planning and design on such projects having completed more than 50,000 residential meter installations since 2004. Preliminary design work for each of the projects is nearly complete, with the specific meter retrofit areas being identified. Maps of the specific service areas to be improved as part of this project are included as **Attachment 1** of this application.

(3) Describe how the project conforms to and meets the goals of any applicable planning efforts, and identify any aspect of the project that implements a feature of an existing water plan(s). The project conforms to the Sacramento area Water Forum Agreement. Implementation of water conservation best management practices, including installation of water meters, is one of the seven foundational elements of the Agreement. The project conforms to the Lower American River Basin Integrated Regional Water Management Plan (IRWMP) adopted by the Regional Water Authority in July 2013. The IRWMP identifies increasing water efficiency as a key objective and meeting 20% per capita reduction in water use in the region by the year 2020. The installation of water meters is one of the highest priority measures to help meet that goal.

Subcriterion No. F.2.—Readiness to Proceed

Describe the implementation plan of the proposed project. Both participating agencies have been installing meter retrofits for more than a decade, so the implementation plan for the proposed project is well defined, including components related to working with grant fund requirements. The project is scheduled to be completed in two phases as described and depicted in the tables below and as shown in the combined detailed graphical schedule included as **Attachment 3**. Project management tasks would commence immediately upon award notification and continue throughout the duration of the two-year project schedule. Upon award,

all participants will provide information necessary for Reclamation to prepare a NEPA analysis and each participant will complete CEQA by October 2014.

Because of differences in when the participants will commence their installations, the final design, contractor selection and installation tasks are shown as two phases. The City of Sacramento will commence its installations in 2014. To do this, they will complete final design by December 2013 and select a contractor by November 2014. Installations will occur between December 2014 through December 2015. SSWD will complete its installations in 2016. To do this, they will complete final design by October 2015 and select a contractor by December 2015. Installations will occur between January 2016 and September 2016.

Semi-annual reports and invoices would begin in March 2015 and continue every six months for the duration of the project. A final project report would be prepared upon project completion in September 2016, unless otherwise specified in the funding agreement. Finally, as noted below under Performance Measures, the participants will continue post-project monitoring beyond the project schedule, but this task was not depicted on the schedule.

Phase 1 - Project Schedule

	2014				2015											
Task/Subtask	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Project Management																
2. Environmental Documentation																
a. CEQA																
b. NEPA																
3. Final Design	Phase 1															
4. Contractor Selection			Phase 1													
5. Meter Installation																
a. Purchase/Install Meters					Phase 1											
b. Installation Inspection					Phase 1											
6. Performance Reporting																
a. Interim Reports/Invoices																
b. Final Report																

Phase 2 - Project Schedule

	2015				2016									
Task/Subtask	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1. Project Management														
2. Environmental Documentation														
a. CEQA														
b. NEPA														
3. Final Design	Phase 2													
4. Contractor Selection			Phase 2											
5. Meter Installation														
a. Purchase/Install Meters					Phase 2									
b. Installation Inspection					Phase 2									
6. Performance Reporting														
a. Interim Reports/Invoices														
b. Final Report														

The schedule assumes that NEPA will be completed by the end of October 2014. This estimate is based on our experience with Reclamation on the 2009 WaterSMART ARRA Grant, the FY 2012 USBR Bay-Delta Restoration CalFed Water Use Efficiency Grant, and the FY 2013 USBR Bay-Delta Restoration CalFed Water Use Efficiency Grant awarded to SSWD. The previous projects are all very similar in nature to the current proposed project. However, sufficient flexibility exists in the project to ensure that construction activities will be completed within the 24-month project duration, even in the event that NEPA compliance were to take up to 6 months as was indicated in the funding opportunity announcement.

Please explain any permits that will be required, along with the process for obtaining such permits. Both participating agencies have been installing meter retrofits for more than a decade, so the permit requirements and process for securing them is well understood. SSWD will require an encroachment permit to access and excavate within the County right-of-way. The City of Sacramento will not require encroachment permits within its own right of way inside the City. SSWD secures an annual encroachment permit through Sacramento County. The only other likely requirements are for contractors to have traffic control and stormwater pollution prevention plans. These permits and activities are routinely acquired as part of ongoing implementation of the meter programs of the participants.

Subcriterion No. F.3.—Performance Measures

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Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project. The primary performance measurement for the meter installation project will be water actually conserved. Prior to the project, customers do not have meters and are billed on a flat rate. After installation, customers stay on the flat rate for

one-year and are provided a comparison of their bill when volumetric rates will be applied following this period.

Despite not having pre-project water usage data due to a lack of metered connections in a specific service area, the measurement of project success is a relatively straightforward exercise, including the following:

1. After a meter is installed, the customer will begin receiving water usage data while still being billed on a flat-rate basis for one year as required by California law. In some cases the customer will receive the data in excess of one year as entire service areas are converted to volumetric data at one time.
2. The participants will generate reports of monthly customer usage data for the service areas included in this project and will provide the data to RWA, which will compile the data in a spreadsheet for a minimum of two years post-installation.
3. When volumetric data commences, the data will be compared on a month over month basis (e.g., January 2014 to January 2015) for savings. This will occur for an entire annual cycle to observe not only annual water savings, but savings during higher use periods (e.g., July).
4. When comparisons of flat-rate to volumetric rate savings area made, we will examine monthly temperature and precipitation data for deviations from average conditions to correct for weather conditions that could influence savings.

Evaluation Criterion G: Additional Non-Federal Funding

The non-Federal funding share is 92%
Non-Federal Funding = $3,643,168
Total Project Cost = $3,943,168

Evaluation Criterion H: Connection to Reclamation Project Activities

(1) How is the proposed project connected to Reclamation project activities? This project is integrally linked to Reclamation Mid-Pacific Region facilities and activities, based on water supply sources and potentially reduced diversions of Reclamation project water. All surface water diversions of the collaborative partners in this application are taken primarily from the American River with additional diversions from the Sacramento River.

(2) Does the applicant receive Reclamation project water? The applicant (SSWD) does not directly receive Reclamation project water. However, surface water supplies include surface water from Placer County Water Agency (PCWA), the City of Sacramento, and occasional Section 215 Central Valley Project (CVP) water from Reclamation. The PCWA water supply ranges from 12,000 to 29,000 acre-feet per year (ac-ft/yr) and is available when the March through November unimpaired inflow into Folsom Reservoir is greater than 1,600,000 acre-feet (ac-ft). SSWD is eligible to purchase Section 215 Reclamation CVP water when it is available in average and wet water years. SSWD has an agreement with the City of Sacramento to receive up to 20 million gallons per day (mgd) of American River water.

The City of Sacramento has a 245,000 ac-ft appropriative surface diversion from American River under Reclamation Settlement agreement; 81,000 ac-ft appropriative surface diversion from Sacramento River under Reclamation Settlement agreement.

(3) Is the project on Reclamation project lands or involving Reclamation facilities? The project is not located on Reclamation project lands, but the surface water diversions for the collaborative partners in this application are integrally linked to operations at Folsom Reservoir, Shasta Lake, and the California Bay-Delta. Conservation achieved through the project will help reduce diversions related to these facilities, which is particularly helpful during dry conditions. Additionally, the potential to bank and market conserved water will create even greater supply benefits during dry times to Reclamation and add operational flexibility to manage for supply and quality upstream of the critical Bay-Delta during these drier periods.

(4) Is the project in the same basin as a Reclamation project or activity? The project is located entirely within the lower American River Basin, which is a integrally linked to Reclamation Mid-Pacific Region facilities and activities.

(5) Will the proposed work contribute water to a basin where a Reclamation project is located? The proposed project will contribute water benefits both within the lower American River Basin and to the California Bay-Delta, which provides benefit to Reclamation.

Performance Measures

Performance Measure No. A.2 - Measuring Devices. The primary performance measurement for the residential meter installation project will be water actually conserved. Prior to the project, customers do not have meters and are billed on a flat rate. After installation, customers stay on the flat rate for one-year and are provided a comparison of their bill when volumetric rates will be applied following this period.

Despite not having pre-project water usage data due to a lack of metered connections in a specific service area, the measurement of project success can be achieved using the following process:

1. After a meter is installed, the customer will begin receiving water usage data while still being billed on a flat-rate basis for one year as required by California law. In some cases the customer will receive the data in excess of one year as entire service areas are converted to volumetric data at one time.
2. The participants will generate reports of monthly customer usage data for the service areas included in this project and will provide the data to RWA, which will compile the data in a spreadsheet for a minimum of two years post-installation.
3. When volumetric data commences, the data will be compared on a month over month basis (e.g., January 2014 to January 2015) for savings. This will occur for an entire annual cycle to observe not only annual water savings, but savings during higher use periods (e.g., July).
4. When comparisons of flat-rate to volumetric rate savings area made, we will examine monthly temperature and precipitation data for deviations from average conditions to correct for weather conditions that could influence savings.

Note that this comparison cannot be prepared immediately at the end of construction, because of the one-year transition period. This comparison will be provided to Reclamation after conclusion of the grant, so it is not shown as a project task in the schedule and budget.

Environmental and Cultural Resources Compliance

(1) Will the project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts. The proposed work will involve minor excavation at the location where the water meter will be installed. All work will be performed in compliance with local and state stormwater pollution prevention requirements to ensure required erosion control measures are implemented.

(2) Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project? There are none known in the project area.

(3) Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "waters of the United States?" If so, please describe and estimate any impacts the project may have. There are no wetlands or other surface waters inside the project boundaries that fall under CWA jurisdiction.

(4) When was the water delivery system constructed? SSWD's water distribution system is comprised of two former water district systems that were consolidated in 2002 when SSWD was formed (Arcade Water District, established in 1954, and Northridge Water District, established in 1956). The City of Sacramento's water delivery system was constructed beginning in the 1850's, with public water becoming available in 1854.

(5) Will the project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously. The project will not modify any features of an irrigation system.

(6) Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question. No listed or eligible structures are associated with the project.

(7) Are there any known archeological sites in the proposed project area? There are no known archeological sites in the project area.

(8) Will the project have a disproportionately high and adverse effect on low income or minority populations? The project will not adversely impact low income or minority populations.

(9) Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands? The project will have no impacts on tribes or tribal lands.

(10) Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area? The project will have no impacts related to invasive species.

Required Permits or Approvals

The likely permits required are encroachment permits where disturbances in county or city rights of way will occur. SSWD will require an encroachment permit to access and excavate within the County right-of-way. The City of Sacramento will not require encroachment permits within its own right of way inside the City. SSWD secures an annual encroachment permit through Sacramento County. The only other likely requirements are for contractors to have traffic control and stormwater pollution prevention plans. These permits and activities are routinely acquired as part of ongoing implementation of the meter programs of the participants.

Letters of Project Support

A letter of support from the Sacramento area Water Forum is included on the following page.

Official Resolution

A resolution is scheduled for adoption by the SSWD Board of Directors at its regular meeting on January 27, 2014 and will be submitted to Reclamation the following day. A draft of the resolution as it is being presented to the SSWD is included on the following pages.

January 15, 2014

Mr. Rob Roscoe
3701 Marconi Ave, Suite 100
Sacramento, CA 95821

WATER FORUM
Sacramento City-County Office of Metropolitan Water Planning

Subject: Support for proposed project under WaterSMART: Water and Energy Efficiency Grants for Fiscal Year 2014

Dear Mr. Roscoe:

I am writing in support of the Sacramento Suburban Water District's regionally-coordinated grant proposal for the WaterSMART: Water and Energy Efficiency Grant Program.

The Water Forum is a stakeholder organization representing over 40 business, environmental, public, and water interests in the Sacramento region. Through execution of the Water Forum Agreement in April 2000, members agreed to a series of actions to achieve the Water Forum's two co-equal 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.

Water use efficiency is an integral element of the Water Forum Agreement. Each water supplier in the region committed to implementing a comprehensive water conservation plan. We appreciate your efforts to accelerate meter installations as they are a critical element in achieving our water conservation goals for the region and the Water Forum Agreement. We also appreciate your leadership role in coordinating multiple water suppliers in the region on the application.

The Water Forum hopes the Bureau of Reclamation recognizes the value to the Sacramento region and to the broader California Bay-Delta as a result of implementing meter installation programs.

Sincerely,

Tom Gohring
Executive Director

2831 G Street, Suite 100 • Sacramento, CA 95816 • Voice 916-808-1999 • Website www.waterforum.org

DRAFT RESOLUTION NO. 14-XX

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SACRAMENTO SUBURBAN WATER DISTRICT AUTHORIZING AN APPLICATION FOR FUNDING ASSISTANCE THROUGH THE BUREAU OF RECLAMATION'S WATERSMART AND ENERGY EFFICIENCY GRANT PROGRAM

WHEREAS, the United States Bureau of Reclamation ("Reclamation") has implemented the WaterSMART Program to provide eligible agencies and organizations with grants to encourage water conservation and water use efficiency, increase the use of renewable energy and improve energy efficiency, benefit endangered and threatened species, facilitate water markets, and carry out activities to address climate-related impacts on water or prevent any water-related crisis or conflict;

WHEREAS, Reclamation has solicited proposals from public water suppliers and other water users for a new round of grant funding under the WaterSMART Program, which proposals are due on or before January 23, 2014;

WHEREAS, the Board of Directors of the Sacramento Suburban Water District ("SSWD") has identified itself as an eligible applicant under Reclamation's WaterSMART Water and Energy Efficiency Grant Program; and

WHEREAS, SSWD is interested in pursuing grant funding assistance under the WaterSMART Program in the amount of $300,000 for a regionally-collaborated effort to implement a water meter retrofit program.

NOW, THEREFORE, be it resolved by the Board of Directors as follows:

1. The Board has reviewed the scope and purpose of SSWD's grant funding application, finds that the Project will serve both the needs of the District's ratepayers and satisfy the goals of the WaterSMART Program, and, on that basis, supports staff's submittal of the grant funding application to Reclamation.

2. SSWD is capable of funding the minimum 50-percent cost share required to obtain grant funding under the WaterSMART Water and Energy Efficiency Grant Program. Collaborating agencies will verify their funding capabilities through letters of commitment to be included with the application.

3. The General Manager of SSWD is hereby authorized to apply for grant funding from Reclamation's WaterSMART Program as part of a regional collaborative effort and to execute any related documents, including entering into a grant funding agreement with Reclamation and any regional partners.

4. The General Manager and staff are directed to take all other actions necessary to secure funding for the Projects under the WaterSMART Water and Energy Efficiency Grant Program.

PASSED AND ADOPTED by the Board of Directors of the Sacramento Suburban Water District on the 27th day of January 2014, by the following vote:

AYES:
NOES:
ABSENT:

By: _____
Kevin M. Thomas
President, Board of Directors
Sacramento Suburban Water District

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I hereby certify that the foregoing resolution was duly and regularly adopted and passed by the Board of Directors of Sacramento Suburban Water District at a meeting hereof held on the 27th day of January 2014.

By: _____
Robert S. Roscoe
General Manager/Secretary
Sacramento Suburban Water District

Project Budget

Funding Plan and Letters of Commitment

(1) How you will make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant. SSWD will acquire its cost share from its CIP budget approved by its Board of Directors and funded by customer water rates. The cost-share funds will be expended on the purchase and installation of the meters that are planned for installation as part of this project. Nearly all of the cost share is direct monetary contribution with a small amount of in-kind sources for project design and inspection as noted in the summary of funding sources table below.

(2) Describe any in-kind costs incurred before the anticipated project start date that you seek to include as project costs. There are no costs included before the project start date.

(3) Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment. The City of Sacramento is a funding partner, and its direct and in-kind contributions are noted in the summary of funding sources below. The required letter of commitment is included in this application as **Attachment 4**.

(4) Describe any funding requested or received from other Federal partners. There is no funding requested or received from other Federal partners for the proposed project.

(5) Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied. There are no pending funding requests for the proposed project.

Summary of Non-Federal and Federal Funding Sources.

Funding Sources	Funding Amount
Non-Federal Entities	
1. SSWD	$1,051,340.00
2. City of Sacramento	$2,556,340.00
3. SSWD (In-Kind Contributions)*	$10,495.00
4. City of Sacramento (In-Kind Contributions)*	$24,993.00
Non-Federal Subtotal:	$3,643,168.00
Other Federal Entities	
Other Federal Subtotal:	$0.00
Requested Reclamation Funding:	$300,000.00
Total Project Funding:	$3,943,168.00

Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		TOTAL COST
	$/Unit and Unit	Quantity	
1. SALARIES AND WAGES --Position title x hourly wage/salary x est. hours for assisted activity. Describe this information for each position.			
Project Manager	$60/hr.	128	$7,680.00
Project Engineer	$50/hr.	160	$8,000.00
Project Inspector	$30/hr. @ 15 minutes/meter	7,213	$27,488.00
2. FRINGE BENEFITS – Explain the type of fringe benefits and how are they applied to various categories of personnel.			
N/A			$0.00
3. TRAVEL—dates; location of travel; method of travel x estimated cost; who will travel			
N/A			$0.00
4. EQUIPMENT—Leased Equipment use rate + hourly wage/salary x est. hours for assisted activity—Describe equipment to be purchased, unit price, # of units for all equipment to be purchased or leased for assisted activity: Do not list contractor supplied equipment here.			
N/A			$0.00
5. SUPPLIES/MATERIALS--Describe all major types of supplies/materials, unit price, # of units, etc., to be used on this assisted activity.			
Meters, meter boxes, meter lid, and meter setter.	$452.93/unit	3,665	$1,660,000.00
6. CONTRACTUAL/CONSTRUCTION—Explain any contracts or sub-Agreements that will be awarded, why needed. Explain contractor qualifications and how the contractor will be selected.			
Contractor installation of meters	$609.82/unit	3,665	$2,235,000.00
7. ENVIRONMENTAL and REGULATORY COMPLIANCE COSTS – Reference cost incurred by Reclamation or the applicant in complying with environmental regulations applicable to this Program, which include NEPA, ESA, NHPA etc.			
NEPA	$5,000/analysis	1	$5,000.00
8. OTHER –List any other cost elements necessary for your project; such as extra reporting, or contingencies in a construction contract.			
None		1	$0.00
TOTAL DIRECT COSTS--			$3,943,168.00
9. INDIRECT COSTS - What is the percentage rate **%** . If you do not have a Federally-approved Indirect Cost Rate Agreement or if unapproved rates are used - Explain Why.			
N/A			$0.00
TOTAL PROJECT/ACTIVITY COSTS			$3,943,168.00

Budget Narrative

Salaries and Wages. RWA staff will act as the overall project manager coordinating the participants and Reclamation, and preparing interim reports, reimbursement invoices, and final project reporting (project **Tasks 1 and 6**). Project participating agencies will provide in-house project engineers to prepare CEQA categorical exemptions, complete final design, and bid and select contractors (project **Tasks 2 – subtask 1, 3, and 4**) assuming 16 hours, 40 hours, and 24 hours per agency, respectively for those tasks. Project participating agencies will provide in-house field inspectors to ensure proper installation of meters assuming an average of 15 minutes per inspection for each meter installed (project **Task 5 – subtask 2**). **Attachment 5** includes documentation to substantiate the labor rates in the proposal. This includes a paystub for the RWA project manager, which shows a bi-weekly pay of $4,903.85 (or just over $60 per hour). Also included are the salary bands for SSWD. The Engineering Services Manager and Senior Inspector are the two positions that will work on the project. These ranges are consistent with the estimates of $50 and $30 per hour for the respective positions.

Fringe Benefits. No Fringe Benefits were assumed. The rates shown above are for the base hourly wage. Fringe Benefits were not included as we are not seeking grant reimbursement for these expenses.

Travel. No travel is required for the project.

Equipment. No equipment will be purchased for the project. Costs for meters and associated parts are identified in the supplies/materials category. However, note that the meters and associated parts are identified as equipment on Standard Form 424, because that was the closest expense category on that form.

Supplies/Materials. Supplies include a minimum of a meter, meter box, meter lid, and meter setter. Examples of these supplies can be seen in **Attachment 2** of this application, which includes standard specifications of each of the participants. Based on preliminary cost estimates developed by each participant, an average cost of supplies was assumed at $452.93 per residential meter retrofit.

Contractual/Construction. The participants will contract out meter installation following a selection process in compliance with funding agreement terms. Based on preliminary cost estimates developed by each of the participants, an average cost of installation was assumed at $609.82 per residential meter retrofit. This estimate is based on extensive experience in implementing meter retrofits over the past decade. Typical expenses include; mobilization, signage, erosion control, construction photos, installing meters in a landscaped or non-landscaped area. Routinely, the projects encounter the need for additional excavation, locating, concrete, abandonment of services, installing additional service line or relocation of meters.

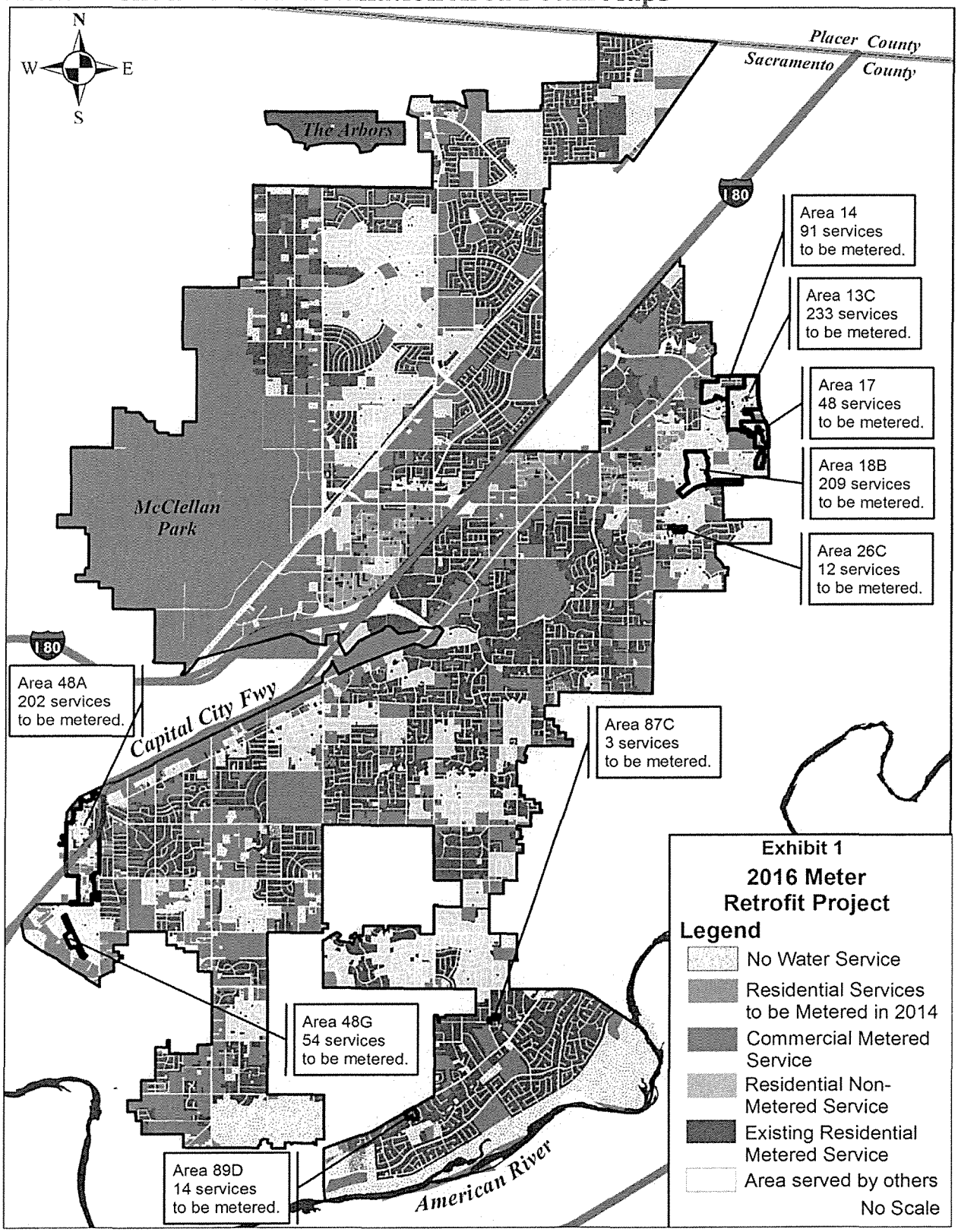
Environmental and Regulatory Compliance. As discussed under the project tasks, regulatory compliance is typically limited to the annual rights-of-way in some cases, and stormwater mitigation plans. Those costs were included in the salaries and wages above. Environmental compliance will include preparing a CEQA categorical exemption by each participant. Again,

those costs are captured in salaries and wages above. The final assumed environmental cost is for NEPA compliance. NEPA costs were estimated at $5,000 for Reclamation expenses acting as the lead agency. This is consistent with costs from a previous award from Reclamation under an American Recovery and Reinvestment Act grant in 2009, the FY12 Bay-Delta Restoration Program Grant, and the FY13 Bay-Delta Restoration Program Grant.

Other. There are no other assumed costs for the project.

Indirect Cost. There are no assumed indirect costs for the project.

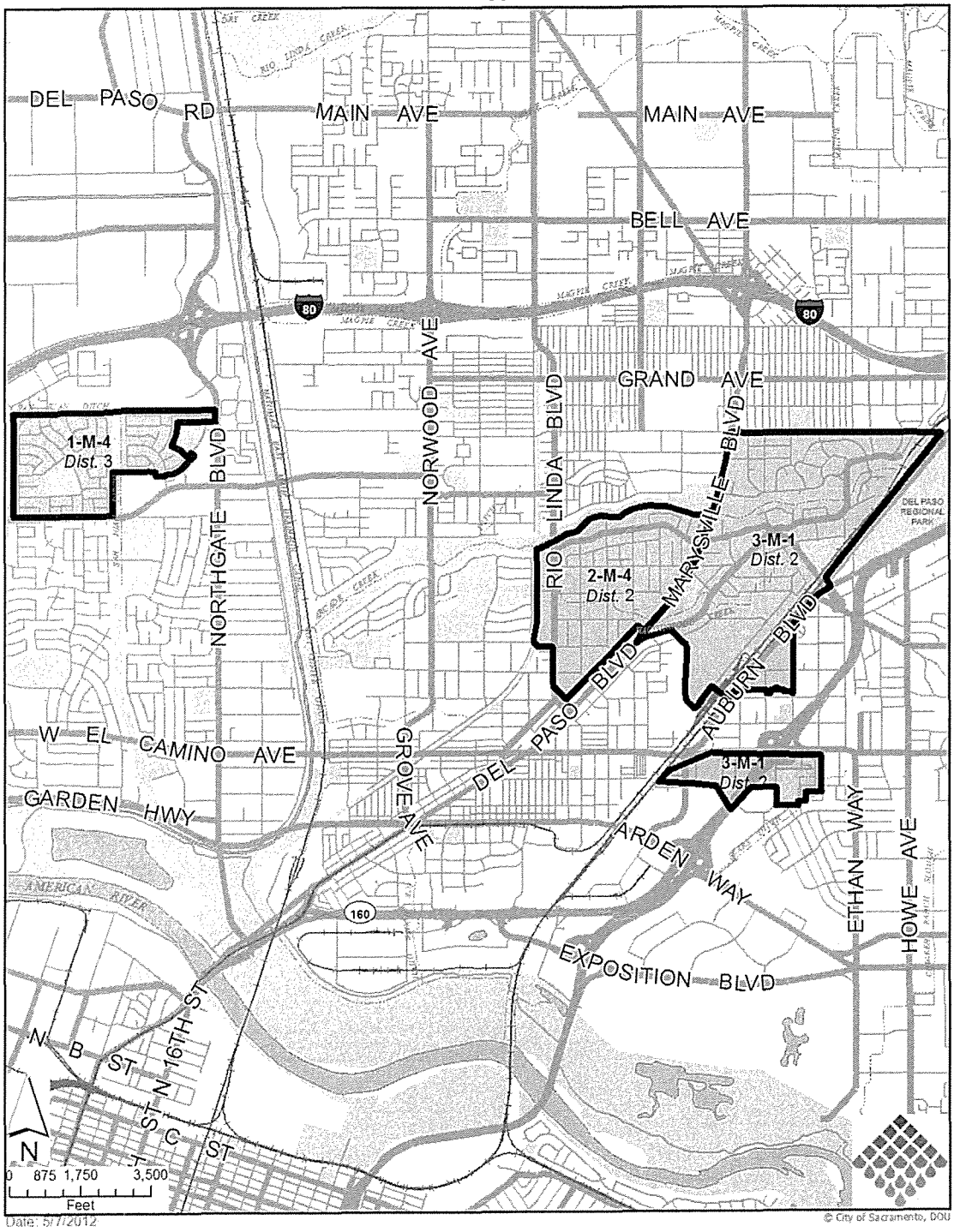
Attachment 1 – Meter Installation Area Detail Maps



SSWD Service Areas for Meter Installation Project

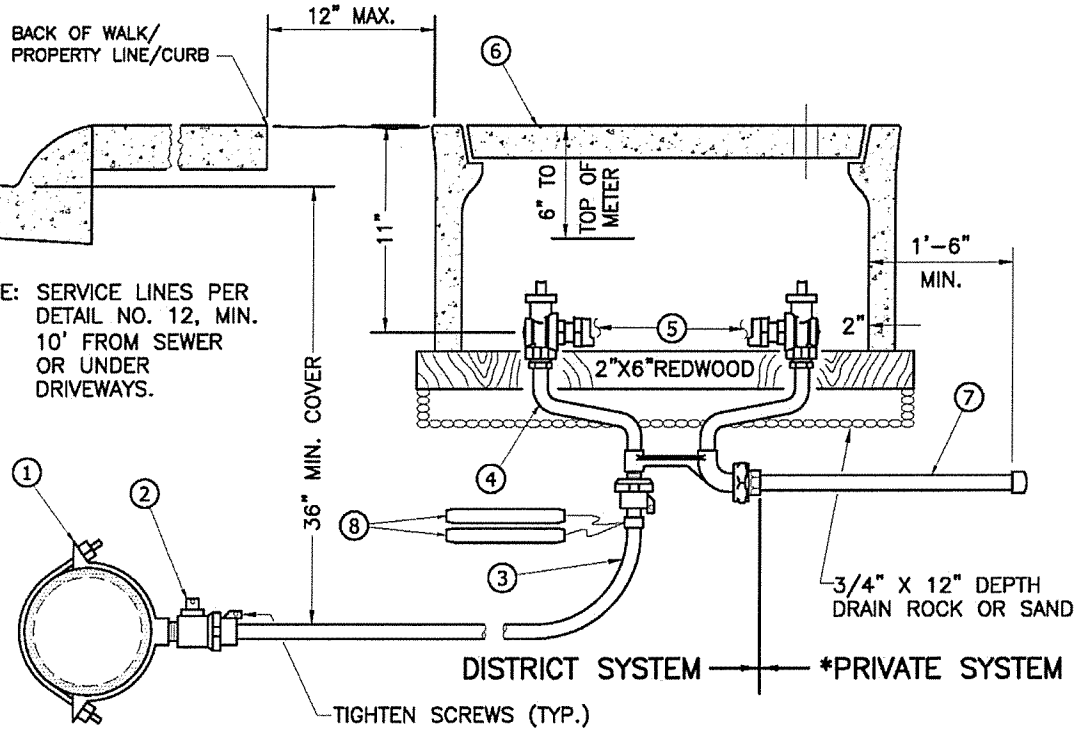
LOCATION MAP

S. Natomas & Hagginwood WMR



City of Sacramento Service Areas for Water Meter Installation Project

Attachment 2 – Meter Retrofit Sample Specifications



NOTE: SERVICE LINES PER DETAIL NO. 12, MIN. 10' FROM SEWER OR UNDER DRIVEWAYS.

1. 1" SERVICE SADDLE, FIP AS PER SEC. 2–1.08 (a), STD. SPECS.
2. 1" CORP. COCK, MIP X COMP., AS PER SECTION 2–1.08 (b), STD. SPECS.
3. 1" TYPE K POLYETHYLENE–COATED COPPER TUBING, AS PER SEC. 2–1.08 (c) STD. SPECS.
4. 1" COPPER SETTER: W/CT PACK JOINT INLET AND FIP OUTLET AS PER SECTION 2–1.08 (d), STD. SPECS.
5. WATER METER TO BE INSTALLED BY CONTRACTOR, PAID FOR BY DEVELOPER AT FURNISH ONLY FEE.
6. 1" CONCRETE METER BOX (MARKED "WATER"): AS PER SECTION 2–1.08 (d).
7. BRASS NIPPLE – 18" LONG, FIP CAP (1" MINIMUM).
8. 2 – 4# HIGH PURITY COPPER SERVICE LINE ANODES WITH INSULATED SOLID CORE COPPER WIRE 10 FEET LONG AND BRASS CABLE TO PIPE CLAMP. ANODES TO BE USED ONLY ON EXISTING COPPER SERVICE LINES, AS PER SECTION 2–2.11 STD. SPECS.

NOTES:

POLYETHYLENE ENCASEMENT WILL BE REQUIRED FOR ALL COPPER PIPE INSTALLATION. ENCASEMENT MATERIAL AND INSTALLATION METHODS SHALL CONFORM TO AWWA STANDARD C–105.

*PRIVATE SYSTEM TO CONFORM WITH SACRAMENTO CO. STANDARDS
DISTRICT SYSTEM SHALL INCLUDE METER BOX

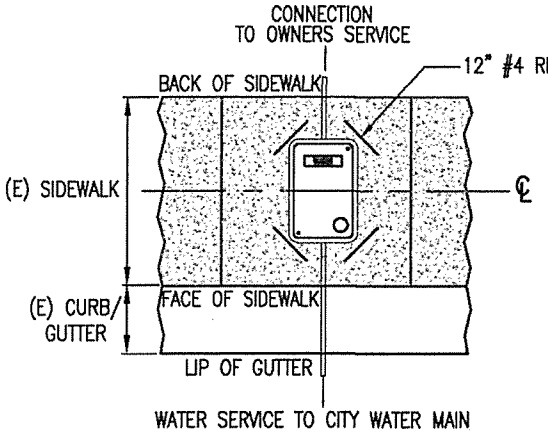
SACRAMENTO SUBURBAN WATER DISTRICT
PHONE (916) 972–7171
3701 MARCONI AVENUE
SUITE 100
SACRAMENTO, CA
95821–5346

STANDARD DETAIL

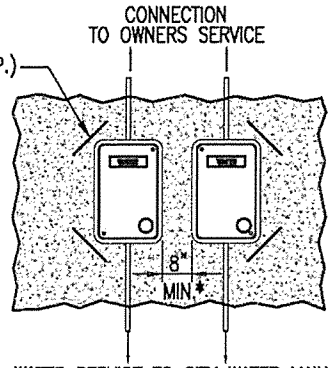
TYPICAL 3/4" & 1" METERED
RESIDENTIAL WATER SERVICE

DATE: DECEMBER 2008 | STD. DET. NO. 13

60



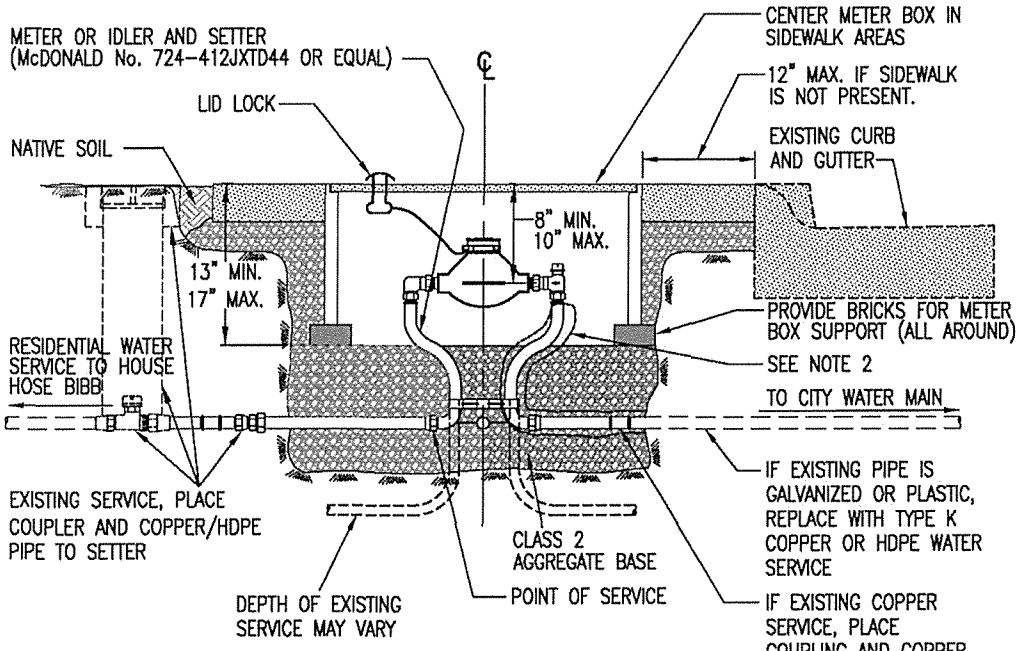
SIDEWALK INSTALLATION



*IF GREATER THAN 14", ADD 4-12" #4 REBARS

CONCRETE INSTALLATION

PLAN VIEW



NOTES:

1. STRAIGHT METER VALVE MAY BE USED IN LIEU OF METER SETTER ON SERVICES WITH 20" OR LESS OF COVER.
2. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE SHALL BE REQUIRED ON CONCRETE TUBBING.
3. IF THERE IS LESS THAN 3 FEET FROM THE (E) CS TO THE BOW, THEN THE (E) WATER SERVICE BETWEEN THEM SHALL BE REPLACED PER CITY STANDARD.

REV.	DATE	DESCRIPTION
1		
2		
3		

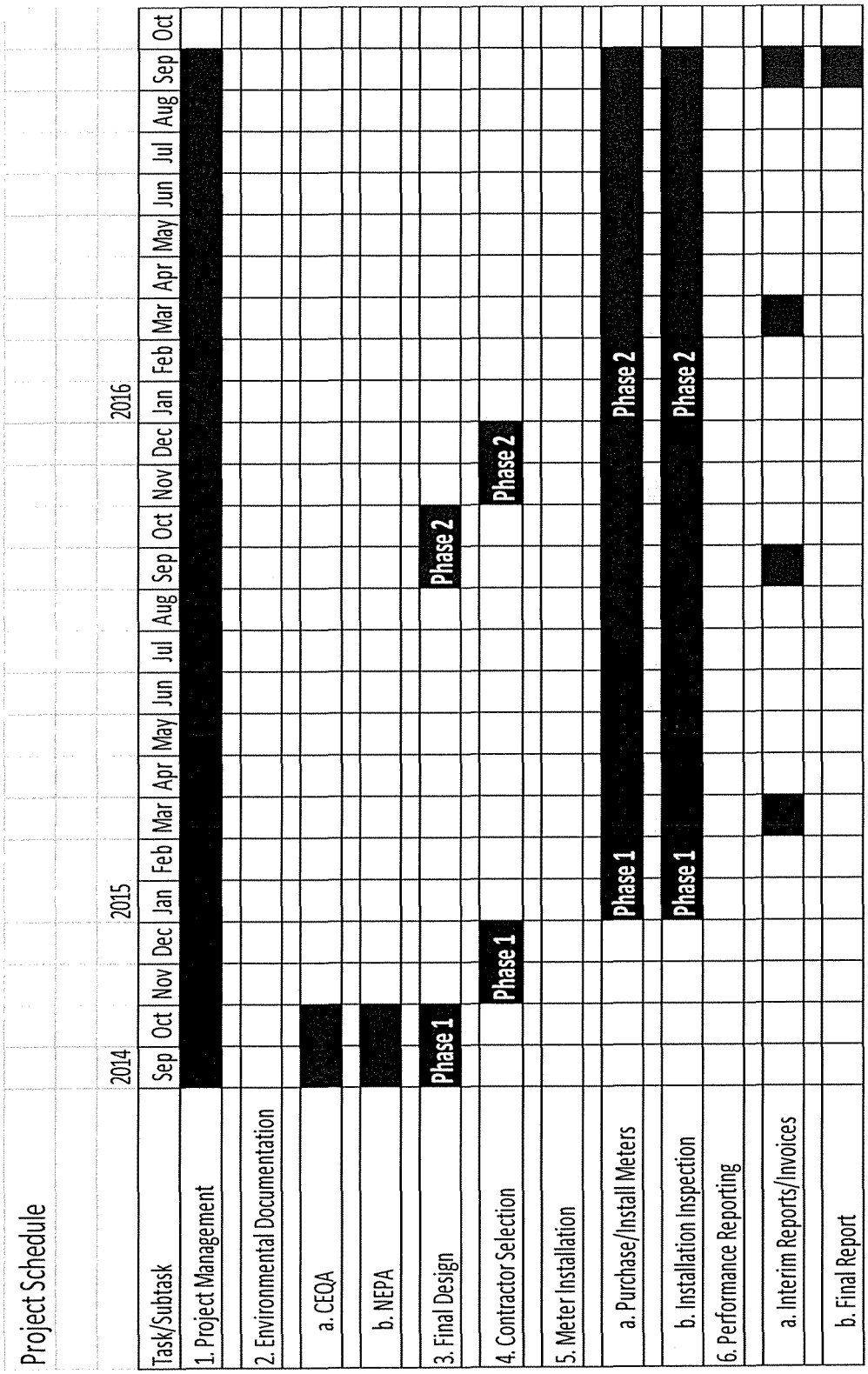
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

RETROFIT OF 1-INCH WATER SERVICE WITHIN EXISTING SIDEWALK

APPR'D BY: _____ NO SCALE
DATE: DWG. NO. **W-402R**

R:\Utilstds_New_Std_Details\Meter_Retrofit_Details\W402R

Attachment 3 – Detailed Project Schedule



Attachment 4 – Funding Letter of Commitment

Department of Utilities
Office of the Director

CITY OF SACRAMENTO
CALIFORNIA

1395 35th Avenue
Sacramento, CA 95822-2911
phone (916) 808-1400
fax (916) 808-1497/1498

January 21, 2014

Rob Roscoe
Sacramento Suburban Water District
3701 Marconi Avenue, Suite 100
Sacramento, CA 95821

Subject: Funding Commitment for the Sacramento Regional Residential Water Meter Installation Project: Funding Opportunity Announcement No. R14AS00001

Dear Mr. Roscoe:

I am writing on behalf of the City of Sacramento to confirm our commitment and support of the regional water meter installation project. We understand that Sacramento Suburban Water District (SSWD) is acting as the lead grant applicant in our collaborative effort in seeking assistance for the metering programs in the Sacramento region, which will help us meet our water use efficiency goals.

To show our commitment to the metering project, our agency has budgeted more than $2.7 million toward the installation of 2,799 residential water meters in our capital improvement program budget in the current fiscal year. This funding will be available to meet the cost-share requirements for the City of Sacramento's portion of the project.

We encourage Reclamation to recognize the value of awarding a grant to increase the number of meters installed to assist the region in our water use efficiency goals, which will provide benefit to Reclamation's operations in the California's Central Valley.

Sincerely,

Dave Brent
Utilities Director

Attachment 5 – Documentation of Hourly Rates

1012 MM5
Regional Water Authority
5620 BIRDCAGE ST.,
SUITE 180
SACRAMENTO, CA 95610

Earnings Statement

ADP EASYPAY

Pay Period: 12/21/2013 to 1/03/2014
Pay Date: 1/03/2014

Employee Number: 1012
Department Number:
Social Security Number: XXX-XX-3711
Marital Status: MARRIED
Number Of Allowances: 04
Rate:

ROBERT J SWARTZ
[redacted]

Hours and Earnings			
Description	Hours	This Period	Year-To-Date
SALARY		4903.85	4903.85

Taxes and Deductions		
Description	This Period	Year-To-Date
457B2	50.00	50.00
FICA	375.14	375.14
FED WT	661.54	661.54
CA ST	316.62	316.62
VACBAL		303.70
SCRBAL		480.00

Gross Pay Year To Date	Gross Pay This Period	Total Deductions This Period	Net Pay This Period
$4,903.85	$4,903.85	$1,403.30	$3,500.55

SSWD PAY/SALARY BANDS - CY 2013 (effective 3/4/13)

NON-EXEMPT POSITIONS				
Title	Minimum	Maximum	Annual Range	
Customer Service Representative I	2,858.00	3,492.67	34,296.00	41,912.04
Administrative Assistant I	3,001.00	3,666.00	36,012.00	43,992.00
Distribution Operator I Water Conservation Technician I	3,149.00	3,848.00	37,788.00	46,176.00
Production Operator I	3,307.00	4,040.40	39,684.00	48,484.80
Customer Service Representative II Engineering Drafter	3,470.00	4,239.73	41,640.00	50,876.76
Administrative Assistant II	3,642.00	4,452.93	43,704.00	53,435.16
Distribution Operator II Water Conservation Technician II	3,829.00	4,678.27	45,948.00	56,139.24
Facilities & Fleet Specialist Production Operator II Purchasing Specialist Senior Engineering Technician	4,017.00	4,908.80	48,204.00	58,905.60
Accountant Field Operations Coordinator GIS/IT Technician	4,216.00	5,153.20	50,592.00	61,838.40
Environmental Compliance Technician Senior Inspector	4,427.00	5,409.73	53,124.00	64,916.76
Distribution Foreman	4,649.00	5,681.87	55,788.00	68,182.44
GIS Coordinator Electrical & Instrumentation Technician Production Foreman	4,880.00	5,962.67	58,560.00	71,552.04
Environmental Compliance Coordinator	5,127.00	6,266.00	61,524.00	75,192.00
Assistant Controller Assistant Engineer	5,386.00	6,581.47	64,632.00	78,977.64
EXEMPT POSITIONS				
Title	Minimum	Maximum	Annual Range	
Executive Assistant Human Resources Coordinator Water Conservation Supervisor	5,086.00	6,881.33	61,032.00	82,575.96
Administrative Services Manager Superintendent (Distribution, Field Services, Production)	5,340.00	7,224.53	64,080.00	86,694.36
Associate Engineer Information Technology Manager	5,608.00	7,588.53	67,296.00	91,062.36
Operations Manager	7,160.00	9,685.87	85,920.00	116,230.44
Engineering Manager (CIP, Engineering Services)	7,517.00	10,171.20	90,204.00	122,054.40
Finance Director	7,897.00	10,680.80	94,764.00	128,169.60
Assistant General Manager	8,708.00	11,779.73	104,496.00	141,356.76
General Manager	Contract Salary			

SSWD Administrative Office
3701 Marconi Avenue, Suite 100 | Sacramento, CA 95821-5346 | Ph: 916.972.7171 | Fax: 916.972.7639
Business Hours: Monday-Friday 8:00 a.m. to 4:30 p.m. | sswd.org

(Rev. 01/09/14)