

Meeting Date: 2/17/2015

Report Type: Consent

Report ID: 2015-00094

Title: Application for the Department of Water Resources Water-Energy Grant Program

Location: Citywide

Recommendation: Pass a Resolution 1) authorizing the City Manager or the City Manager's designee to: a) apply for a California Department of Water Resources 2014 Water-Energy Grant for the Department of Utilities District Metered Areas (DMA's) for the Water Loss Control Project, up to the maximum grant amount of \$2,500,000, and b) execute the grant agreement if awarded; and 2) authorizing the Director of Utilities and designees to act as the City's agent in connection with the grant application and agreement.

Contact: Julie Friedman, Program Specialist, (916) 808-7898; Michael Malone, Operations Manager, (916) 808-6226, Department of Utilities

Presenter: None

Department: Department Of Utilities

Division: Operations & Maintenance Admin

Dept ID: 14001211

Attachments:

- 1-Description/Analysis
- 2-Background
- 3-Resolution
- 4-Exhibits

City Attorney Review

Approved as to Form
Joe Robinson
2/11/2015 3:08:29 PM

Approvals/Acknowledgements

Department Director or Designee: Bill Busath - 1/29/2015 5:30:37 PM

Description/Analysis

Issue Detail: The City of Sacramento's Water Conservation Plan adopted in 2013 and the Department of Utilities (DOU) 5-year Strategic Plan call for intensifying the City's system-wide leak detection program and reducing water losses to help achieve water use reduction goals mandated by the 2009 Water Conservation Act. To implement the Plan's recommendations, and as the next step for a medium to long-term water loss reduction strategy, DOU is augmenting its leak detection and repair program with District Metered Area (DMA) Management. DMAs are discrete areas of the water distribution system that have a defined boundary typically encompassing 500-5,000 metered service connections, which provide leak detection and water and energy savings via isolation and installation of sub-meters on specific portions of the system.

DOU requests approval to apply for a California Department of Water Resources 2014 Water-Energy Grant to fund the DMA for Water Loss Control Project, up to the maximum grant amount of \$2.5 Million, and to execute all agreements related to the grant if the grant is awarded.

If awarded, this project would be a continuation of an existing pilot DMA project which is currently underway. The expected benefits of implementing this project include working with smaller, more manageable areas; more focused active leakage detection and repair efforts; quicker identification of leaks; and shorter run-time of leaks. DOU's published water loss data in Fiscal Year 2012 showed losses of 135 gallons/connection/day; DOU estimates that the DMA project could reduce those losses by approximately 70 percent (95 gallons/connection/day) resulting in losses of only 40 gallons/connection/day across the water distribution network.

Policy Considerations: The proposed project under this grant application is in line with the City's Water Conservation Plan adopted by City Council in October 2013., The project is also in keeping with the goal to ensure the infrastructure for a safe and reliable water supply, is consistent with the City Council focus areas of public safety, economic development, sustainability and livability, and supports water use reduction efforts in response to ongoing drought conditions. It corresponds with recommended best management practices (BMP's) based on the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding and the American Water Works Association (AWWA) Water Audits and Loss Control Programs.

Economic Impacts: None

Environmental Considerations: The Community Development Department, Environmental Planning Services has reviewed the project and has determined the project is exempt from California Environmental Quality Act (CEQA) review under CEQA Guidelines Section 15061(b)(3). The activity is covered by the general rule that CEQA applies only to projects that have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

Sustainability: The proposed project is consistent with the City's Sustainability Master Plan goal by enabling DOU to protect sources of water and provide a safe and reliable water supply for the Sacramento region.

Commission/Committee Action: Not applicable

Rationale for Recommendation: If awarded, DOU would be able to utilize the DWR grant to fund three to four DMAs within disadvantaged communities (DACs) to help identify existing leaks within the system and to better identify leaks in the future.

Financial Considerations: The maximum potential grant amount is \$2.5 million and there is no local match required. If the grant is awarded, the DOU will request City Council approval to establish revenue and expenditure budgets.

Local Business Enterprise (LBE): Any contracts funded with the grant will comply with applicable LBE requirements.

Background

In 2013, the City of Sacramento adopted a Water Conservation Plan which includes recommendations to intensify the system-wide leak detection program to help achieve the 20 percent per capita water use reduction by 2020 mandated by the 2009 Water Conservation Act.

To respond to the Water Conservation Plan recommendations and as the next step for a medium to long-term water loss reduction strategy, the Department of Utilities (DOU) is augmenting its leak detection and repair program with District Metered Area (DMA) Management. DMAs are discrete areas of the water distribution system that have a defined boundary, typically encompassing 500-5,000 metered service connections, and are used to provide leak detection savings assessments via isolation and installation of sub-meters on specific portions of the system.

DOU proposes to apply for a California Department of Water Resources (DWR) 2014 Water-Energy Grant to fund the DMA for Water Loss Control Project up to the maximum grant amount of \$2.5 Million, and to execute all agreements related to the grant if the grant is awarded.

This grant proposal will provide funding for both City-asset and customer-side leak repairs identified as necessary during this project. It is estimated that approximately 246 million gallons (MG) of water, 245,754 kilowatt-hours (kWh), and 58,113 kilograms of carbon dioxide equivalent (kg of CO₂e) can be saved annually as a result of this project.

Based on DWR's review, the City has, and is currently implementing, Best Management Practices (BMP's) consistent with AB 1420 and, therefore, is eligible to receive water management grant or loan funds.

The traditional approach to leakage control is passive, whereby the leak is repaired only when it becomes visible. The development of acoustic instruments has significantly improved the efficiency of this system, allowing invisible leaks to be located as well, but the application of such instruments over the whole water network is expensive and time-consuming. The proposed solution to this problem is a permanent leakage control system whereby the network is divided into DMAs supplied by a limited number of key mains on which flow meters are installed. In this way, it is possible to regularly quantify the leakage level in each DMA so that the leakage location activity is consistently directed to the areas with the greatest needs.

If awarded, this project would be a continuation of an existing pilot DMA project which is currently underway. The full scope of work includes selecting DMA areas, DMA implementation and analysis, leak detection and repairs, including a program to help qualified low-income homeowners with repairs, and reporting on results. Specifically, three to four DMAs will be set up to undertake field leakage measurements to quantify leakage volume, reduce leakage volumes to optimized levels, and maintain the achieved leakage savings through ongoing DMA monitoring. The selected areas will be

within Disadvantaged Communities (DACs) which will provide the greatest benefit to low income and disadvantaged residents who have limited resources to address service-side leaks within the City. Once leaks have been identified and repaired, the DMA leakage measurements will be repeated to quantify leakage/water savings achieved.

The division of a large water network can be a delicate operation, which will be undertaken with care, as it can cause supply and quality problems. The expected benefits of implementing this project are working with smaller, more manageable areas; more focused active leakage detection and repair efforts; quicker identification of leaks; and shorter run-time of leaks. DOU's most recent water loss data published in Fiscal Year 2012 showed losses of 135 gallons/connection/day; the DMA project could reduce those losses by up to 70 percent (95 gallons/connection/day) resulting in losses of only 40 gallons/connection/day across the distribution network.

RESOLUTION NO.

Adopted by the Sacramento City Council

GRANT FUNDING APPLICATION FOR THE DEPARTMENT OF WATER RESOURCES WATER-ENERGY GRANT PROGRAM

BACKGROUND

- A. In 2013, the City adopted a Water Conservation Plan which includes recommendations to intensify the system-wide leak detection program to help achieve water use reduction goals.
- B. To implement the Water Conservation Plan recommendations and as the next step for a medium to long-term water loss reduction strategy, the City's Department of Utilities (DOU) is augmenting its leak detection and repair program with District Metered Area (DMA) Management.
- C. DMAs are discrete areas of the water distribution system that have a defined boundary encompassing 500-5,000 metered service connections. DMA Management and leak detection through isolation and submetering can reduce the volume of real water losses, saving water and energy, and reducing greenhouse gas emissions.
- D. The DMA program is eligible for State grant funding under the Department of Water Resources 2014 Water-Energy Grant Program pursuant to Senate Bill No. 103 Section 11 (2013-2014 Regular Session).
- E. The California Department of Water Resources 2014 Water-Energy Grant has a maximum amount of \$2.5 million and does not require local matching funds.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

- Section 1. The City Manager, or the City Manager's designee, is authorized to apply for a California Department of Water Resources 2014 Water-Energy Grant to fund the Department of Utilities District Metered Areas for Water Loss Control Project up to the maximum grant amount of \$2.5 million, and to execute all agreements related to the grant on behalf of the City if the grant is awarded.
- Section 2. The Director of Utilities and the Director's designees are authorized as the City's agent to prepare the necessary data, conduct investigations, conduct all negotiations, and submit all documents required in connection with the grant application and, if the grant is awarded, the grant

agreement, including but not limited to applications, payment requests, and documentation of compliance with all requirements applicable to the grant and completion of the project funded by the grant.

Section 3. The City Council has reviewed the purpose of the application and supports the application being submitted.

Table of Contents:

Exhibit A: City of Sacramento Grant Application to California Department of Water Resources to obtain a 2014 Water-Energy Grant

Proposal Full View

APPLICANT INFORMATION

Organization Name *	Utilities Engineering Services			
Tax ID	999999983			
Point Of Contact *	Division/Address List:			
	Address1:	1395 35th Avenue	Address2:	
	City:	Sacramento	State:	CA
	Zip:	95822		
	First Name:	Michele	Last Name:	GraySamuel
	Email:	mgray-samuel@cityofsacramento.org	Phone (Direct):	9168081400
Point Of Contact Position Title *	Grant Manager			
Proposal Name *	City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control			
Proposal Objective*	City, regional, and state-wide stakeholders have identified the importance of expanding the City's Water Loss Control Program. District Metered Areas (DMAs) Management and leak detection through isolation and submetering can reduce the volume of real water losses, saving water and energy, and reducing greenhouse gas emissions. The proposal should prove to be a viable medium to long-term intervention strategy that can reduce the volume of real losses by about 70 percent, with smaller, more manageable areas; more focused active leakage detection efforts, quicker identification of leaks, and shorter run-time of leaks.			

BUDGET

Other Contribution	0
Local Contribution	0
Federal Contribution	0
Inkind Contribution	0
Amount Requested *	2500000
Total Project Cost *	2500000

GEOGRAPHIC INFORMATION

Latitude *	DD(+/-):	38	MM:	34	SS:	54
Longitude *	DD(+/-):	121	MM:	29	SS:	40
Longitude/Latitude Clarification	City Hall		Location	City of Sacramento		
County*	Sacramento					
Ground Water Basin	Sacramento Valley-North American,Sacramento Valley-South American					
Hydrologic Region	Sacramento River					
Watershed	Valley-American					

LEGISLATIVE INFORMATION

Assembly District*	7th Assembly District,9th Assembly District
Senate District*	6th Senate District
US Congressional District*	District 3 (CA),District 6 (CA)

Project Information

PROJECT NAME: CITY OF SACRAMENTO DEPARTMENT OF UTILITIES DISTRICT METERED AREAS (DMAS) FOR WATER LOSS CONTROL

CITY OF SACRAMENTO DEPARTMENT OF UTILITIES DISTRICT METERED AREAS (DMAS) FOR WATER LOSS CONTROL

Implementing Organization	City of Sacramento
Secondary Implementing Organization	
Proposed Start Date	7/1/2015
Proposed End Date	3/31/2018
Scope Of Work	The scope of work under the City of Sacramento Department of Utilities District Metered Areas (DMAs) Water Loss Control project is comprised of four main tasks- Project Management, DMA Implementation and Analysis, Leak Detection, and a Leak Repair program as detailed more extensively below and in Attachment 3 - Work Plan of this grant proposal package.
Project Description	The City of Sacramento Department of Utilities (Department) is currently augmenting its leak detection and repair program with DMA Management implementation and repair for water loss control. DMA's are discrete areas of the water distribution system that have a defined boundary typically encompassing 500-5,000 metered service connections, and are set up to provide leak detection, water and energy savings via isolation and installation of sub-meters on specific portions of the system. Areas with existing residential meters with Advanced Metering Infrastructure (AMI) technology are preferred and provide the most accurate data. In order to improve the system and provide benefits to reduce water loss, energy consumption, and greenhouse gas emissions, the Department would like to fund three to four DMAs within DAC areas to help identify existing leaks within the system and to better identify leaks in the future. This project will also provide funding for additional leak detection work as well as funding for both City-asset and customer-side leak repairs identified during this project. It is estimated that approximately 246 MG of water, 245,754 kWh, and 58,113 kgCO ₂ e can be saved annually as a result of this project. All funding received from this grant would be used in DAC areas.
Project Objective	District Metered Areas (DMAs) Management and leak detection through isolation and submetering can reduce the volume of real water losses, saving water and energy, and reducing greenhouse gas emissions. The proposal should prove to be a viable medium to long-term intervention strategy that can reduce the volume of real losses by about 70 percent, with smaller, more manageable areas; more focused active leakage detection efforts, quicker identification of leaks, and shorter run-time of leaks.

PROJECT BENEFITS INFORMATION

No records found.

BUDGET

Other Contribution	0
Local Contribution	0
Federal Contribution	0
Inkind Contribution	0
Amount Requested*	2500000
Total Project Cost*	2500000

GEOGRAPHIC INFORMATION

Latitude *	DD(+/-): 38	MM: 34	SS: 54
Longitude*	DD(+/-): 121	MM: 29	SS: 40
Longitude/Latitude Clarification	City Hall	Location	City of Sacramento
County*	Sacramento		
Ground Water Basin	Sacramento Valley-North American,Sacramento Valley-South American		
Hydrologic Region	Sacramento River		
Watershed	Valley-American		

LEGISLATIVE INFORMATION

Assembly District*	7th Assembly District,9th Assembly District
Senate District*	6th Senate District
US Congressional District*	District 3 (CA),District 6 (CA)

Section : Additional Information Tab**Additional Information TAB****Q1. Project Representative**

Provide the name and contact information of the person responsible for executing the grant agreement for the applicant. Persons that are subcontractors to be paid by the grant cannot be listed as the Project Representative.

Julie Friedman Environmental Services Manager 5730 24th St., Building 8 Sacramento, CA 95822 916-808-7898 PHONE 916-808-4036 FAX jfriedman@cityofsacramento.org

Q2. Project Manager

Provide the name and contact information of the Project Manager from the applicant agency or organization that will be the day-to-day contact on this proposal.

Julie Friedman Environmental Services Manager 5730 24th St., Building 8 Sacramento, CA 95822 916-808-7898 PHONE 916-808-4036 FAX jfriedman@cityofsacramento.org

Q3. Applicant Information

Provide the agency name, address, city, state and zip code of the applicant submitting the proposal.

City of Sacramento Department of Utilities 1395 35th Avenue Sacramento, CA 95822

Q4. Disadvantaged Community Project

Select "Yes" if the applicant is claiming that the proposal provides sufficient benefit to a DAC such that the DAC program preference should be applied. If yes, Attachment 7 must be submitted.

- a) Yes
b) No

Q5. Regional Proposal

Indicate if this is a regional proposal by checking the appropriate box(es):

- a) Projects are consistent with an adopted IRWM Plan
b) Proposal involves multiple cooperating entities
c) Not a regional proposal

Q6. System Water Savings

Provide System Water Savings in MG/\$M (Attachment 2 Workbook, System Summary Worksheet, Cell F4).

9,840.0 MG/\$M

Q7. System Energy Savings

Provide System Energy Savings in kWh/\$M (Attachment 2 Workbook, System Summary Worksheet, Cell F5).

9,830,160 kWh/\$M

Q8. Grand Total GHG Savings

Provide the Grand Total GHG Savings in kg CO₂e (Attachment 2 Workbook, System Summary Worksheet, Cell M6).

5,813,311 kg CO2e

Section : Application Attachments Tab

Application Attachments Tab

Attachment 1: Authorization and Eligibility Requirements

Upload "Authorizing" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section VIII of the 2014 Water-Energy Grant Program PSP.

Last Uploaded Attachments:

CityWaterSystemBoundary.zip,Att1_WE14_SAC_EligDoc_1of1.pdf,Att1_WE14_SAC_UWM_1of1.pdf,Att1_WE14_SAC_GWMSWD_1of1.pdf

Attachment 2: Water and Energy Savings and Green House Gas Calculations

Upload "Water and Energy Savings and Green House Gas Calculations" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section VIII of the 2014 Water-Energy Grant Program PSP.

Last Uploaded Attachments: Att2_WE14_SAC_WEGHG_1of1.xlsx

Attachment 3: Work Plan

Upload "Work Plan" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section VIII of the 2014 Water-Energy Grant Program PSP.

Last Uploaded Attachments: Att3_WE14_SAC_Work Plan_1of2.pdf,Att3_WE14_SAC_Work Plan_2of2.pdf

Attachment 4: Budget

Upload "Budget" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section VIII of the 2014 Water-Energy Grant Program PSP.

Last Uploaded Attachments: Att4_WE14_SAC_Budget_1of1.xlsx

Attachment 5: Schedule

Upload "Schedule" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section VIII of the 2014 Water-Energy Grant Program PSP.

Last Uploaded Attachments: Att5_WE14_SAC_Schedule_1of2.pdf,Att5_WE14_SAC_Schedule_2of2.pdf

Attachment 6: Project Monitoring

Upload "Project Monitoring" documentation here. This attachment is mandatory.

Ensure file name is consistent with Section VIII of the 2014 Water-Energy Grant Program PSP.

Last Uploaded Attachments: Att6_WE14_SAC_Monitor_1of1.pdf

Attachment 7: Disadvantaged Community Map

Upload "Disadvantaged Community Map" documentation here. This attachment is optional.

Ensure file name is consistent with Section VIII of the 2014 Water-Energy Grant Program PSP.

Last Uploaded Attachments: DAC GIS Files.zip,Att7_WE14_SAC_DAC_1of2.pdf,Att7_WE14_SAC_DAC_2of2.pdf

ATTACHMENT 1



Office of the City Attorney

City Attorney
James Sanchez

Assistant City Attorneys
Matthew D. Ruyak
Sandra G. Talbott

Supervising Deputy City Attorneys
Gerald C. Hicks
Gustavo L. Martinez
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December 3, 2014

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Michael T. Sparks
Chance L. Trimm
Michael Voss
Lan Wang

Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Attn: IRWM Financial Assistance Branch
Water-Energy Grant Program

Re: **Statement of Authority re City of Sacramento Application for State Funding**

Dear Sir or Madam:

The City of Sacramento ("City") may enter into one or more financing agreements with the State Department of Water Resources ("Department") for grant funding from the Water-Energy Grant Program for one or more of the following projects (the "Projects"):

1. Leak detection and repair program for disadvantaged communities
2. DMA program

In my capacity as a Senior Deputy City Attorney for the City, in connection with the grant funding application(s) of the City to the Department, it is my opinion that:

The City is a charter city duly organized and validly existing pursuant to the laws of the State of California, including the provisions of Article XI of the California Constitution, the California Government Code, and the Sacramento City Charter. As such, the City has full legal authority to enter into a grant funding agreement or agreements for the Projects with the Department. The City is not required to hold an election before entering into such agreements with the Department.

I am furnishing this opinion solely for use in connection with the City's application(s) for grant funding for the Projects, and this letter is not to be used, circulated, quoted or otherwise referred to for any other purpose. This opinion is given solely with respect to facts and laws that exist as of the date of this opinion.

Letter to Department of Water Resources
Re: *City of Sacramento Opinion re Application for State Funding*
December 3, 2014
Page 2

Respectfully submitted,

JAMES C. SANCHEZ
City Attorney



Joe Robinson
Senior Deputy City Attorney

Ground Water Management Compliance

City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control

The project includes several areas within the City of Sacramento's water system boundary. The City overlies the Sacramento Valley-North American and the Sacramento Valley-South American ground water basins. Both basins are listed as High Priority as determined by the CASGEM Program. The Sacramento Central Groundwater Authority is the groundwater monitoring entity for the Sacramento Valley-South American basin. The Sacramento Groundwater Authority is the groundwater monitoring entity for the Sacramento Valley-North American basin. The City of Sacramento is a member of both authorities.

As the project includes several areas within the City's water system, the project location coordinates (38° 34' 54" N, 121° 29' 40" W) are for City Hall. A GIS shape file of the service area boundary is included as Att1_WE14_SAC_GWM_2of2.shp.

Contact Information:

Julie Friedman, Environmental Services Manager
City of Sacramento
Department of Utilities
jfriedman@cityofsacramento.org
Phone: (916) 808-7898

Surface Water Diversion Compliance

City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control

The City of Sacramento currently diverts surface water from the American and Sacramento Rivers via three water rights: 011361 (American River), 011358 (American River), and 000992 (Sacramento River). The City's surface water diversion reports submitted to the SWRCB are in compliance with requirements outlined in Part 5.1 of Division 2 of the Water Code.

Contact Information:

Dan Sherry
City of Sacramento
Department of Utilities
dsherry@cityofsacramento.org
Phone: (916) 808-1419

DEPARTMENT OF WATER RESOURCES

1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791



August 29, 2014

Mr. William Granger
Water Conservation Administrator
City of Sacramento
1395 35th Avenue
Sacramento, California 95822

Dear Mr. Granger:

The Department of Water Resources (DWR) has reviewed City of Sacramento's (City) Self-Certification Statement – Table 1 submitted on July 16, 2014, regarding implementation of the Urban Best Management Practices (BMPs).

The purpose of DWR's review is to determine the City's eligibility to receive water management grant or loan funds. DWR has followed the *AB 1420 Compliance Requirements* dated January 1, 2009. For detailed information, please visit <http://www.water.ca.gov/wateruseefficiency/finance/>.

Based on DWR's review of the information in Table 1, the City has and is currently implementing the BMPs consistent with AB 1420 and, therefore, is eligible to receive water management grant or loan funds.

DWR reserves the right to request additional information and documentation, including reports from the City to substantiate the accuracy of the information provided in Table 1. DWR may reverse or modify its eligibility determination and notify you and the funding agency if inaccuracies are found in the supporting documentation or in Table 1.

If you have any questions, please contact me at (916) 651-7034 or Betsy Vail at (916) 651-9667.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Brostrom".

Peter Brostrom
Urban Water Unit
Water Use and Efficiency Branch

California State Water Resources Control Board
California Department of Water Resources
California Department of Public Health



**CERTIFICATION FOR
COMPLIANCE WITH WATER METERING REQUIREMENTS
FOR FUNDING APPLICATIONS**

In 2004, Assembly Bill 2572 added section 529.5 to the Water Code, providing that, commencing January 1, 2010, urban water suppliers must meet certain volumetric pricing and water metering requirements in order to apply for permits for new or expanded water supply, or state financial assistance for the following types of projects:

1. wastewater treatment projects
2. water use efficiency projects (including water recycling projects)
3. drinking water treatment projects

For the purposes of compliance with Section 529.5, a "water use efficiency project" means an action or series of actions that ensure or enhance the efficient use of water or result in the conservation of water supplies.

Please consult with your legal counsel and review sections 525 through 529.7 of the Water Code before completing this certification.

Applicants Affected

This requirement applies to urban water suppliers.

"Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers.

When Certification is Required

State Water Resources Control Board (SWRCB): The application for financial assistance must include a completed and signed certification form demonstrating compliance with the water metering requirements.

Department of Water Resources (DWR) funding applications: This certification must be completed and submitted with the funding application. Check the specific proposal solicitation package for directions on applicability and submittal instructions.

Department of Public Health (DPH) Safe Drinking Water State Revolving Fund Program: This certification must be completed and submitted with the executed Notice of Acceptance of Application (NOAA).

California State Water Resources Control Board
California Department of Water Resources
California Department of Public Health



**CERTIFICATION FOR
COMPLIANCE WITH WATER METERING REQUIREMENTS
FOR FUNDING APPLICATIONS**

Funding Agency name: Department of Water Resources
Funding Program name: 2014 Water-Energy Grant Program
Applicant (Agency name): City of Sacramento
Project Title (as shown on application form): City of Sacramento DMA
Water Loss Program

Please check one of the boxes below and sign and date this form.

As the authorized representative for the applicant agency, I certify under penalty of perjury under the laws of the State of California, that the agency is not an urban water supplier, as that term is understood pursuant to the provisions of section 529.5 of the Water Code.

As the authorized representative for the applicant agency, I certify under penalty of perjury under the laws of the State of California, that the applicant agency has fully complied with the provisions of Division 1, Chapter 8, Article 3.5 of the California Water Code (sections 525 through 529.7 inclusive) and that ordinances, rules, or regulations have been duly adopted and are in effect as of this date.

I understand that the Funding Agency will rely on this signed certification in order to approve funding and that false and/or inaccurate representations in this Certification Statement may result in loss of all funds awarded to the applicant for its project. Additionally, for the aforementioned reasons, the Funding Agency may withhold disbursement of project funds, and/or pursue any other applicable legal remedy.

Dan Sherry
Name of Authorized Representative
(Please print)

[Signature]
Signature

Intervenor Engineering Div. Manager
Title

12/10/14
Date

ATTACHMENT 2

Within System (lifetime)			
System Water Savings:	9,840,000	MG/\$M	
System, End-Use & EE/RE Savings:	9,830,160	kWh/\$M	
System, End-Use & EE/RE GHG Emission Reductions:	2,325,324	kg CO ₂ e/\$M	

Grand Total (lifetime)			
Water Savings:	24,600,000	MG	
Energy Savings:	24,575,400	kWh	
GHG Emissions Reduction:	5,813,311	kg CO ₂ e	

System Summary

	Total Project Cost	Water Savings		Energy Savings		GHG Reduction	
		Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
Project 1	\$ 2,500,000	246.000 MG/year	24,600.000 MG	245,754 kWh/year	24,575,400 kWh	58,133 kg CO ₂ e/year	5,813,311 kg CO ₂ e
Project 2	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 3	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 4	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 5	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 6	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 7	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 8	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 9	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 10	\$ -	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Total	\$ 2,500,000	246.000 MG/year	24,600.000 MG	245,754 kWh/year	24,575,400 kWh	58,133 kg CO ₂ e/year	5,813,311 kg CO ₂ e

Imported Water Summary

	Energy Savings		GHG Reduction	
	Annual	Lifetime	Annual	Lifetime
Project 1	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 2	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 3	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 4	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 5	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 6	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 7	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 8	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 9	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 10	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Total	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e

Hot Water Heating System Summary

	Energy Savings		GHG Reduction	
	Annual	Lifetime	Annual	Lifetime
Project 1	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 2	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 3	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 4	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 5	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 6	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 7	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 8	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 9	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 10	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Total	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e

Energy Efficiency and Renewable Energy (EE/RE) Summary

	Energy Savings		GHG Reduction	
	Annual	Lifetime	Annual	Lifetime
Project 1	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 2	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 3	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 4	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 5	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 6	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 7	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 8	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 9	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 10	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Total	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e

Total System Summary (System + Water Heating + EE/RE)

	Water Savings		Energy Savings		GHG Reduction	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
Project 1	246.000 MG/year	24,600.000 MG	245,754 kWh/year	24,575,400 kWh	58,133 kg CO ₂ e/year	5,813,311 kg CO ₂ e
Project 2	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 3	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 4	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 5	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 6	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 7	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 8	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 9	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 10	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Total	246.000 MG/year	24,600.000 MG	245,754 kWh/year	24,575,400 kWh	58,133 kg CO ₂ e/year	5,813,311 kg CO ₂ e

Combined Summary (System + Imports + Water Heating + EE/RE)

	Water Savings		Energy Savings		GHG Reduction	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
Project 1	246.000 MG/year	24,600.000 MG	245,754 kWh/year	24,575,400 kWh	58,133 kg CO ₂ e/year	5,813,311 kg CO ₂ e
Project 2	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 3	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 4	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 5	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 6	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 7	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 8	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 9	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Project 10	0.000 MG/year	0.000 MG	0 kWh/year	0 kWh	0 kg CO ₂ e/year	0 kg CO ₂ e
Total	246.000 MG/year	24,600.000 MG	245,754 kWh/year	24,575,400 kWh	58,133 kg CO ₂ e/year	5,813,311 kg CO ₂ e

Attachment 2
Estimate of Water Savings, Energy Savings, and GHG Emissions Reduction

Project Name: City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control
Total Project Cost: \$2,500,000

Project Assumptions		
Step 1: Enter the baseline (pre-project) volume of water associated with the project	493	MG/year
Step 2: Enter the volume of water that will be delivered after the project is implemented.	247	MG/year
Step 3: Enter the volume of hot water saved from the project's electric water heating system (the summation of step 3 and step 4 must not exceed annual volume of water savings). If not applicable, enter "0".	0	MG/year
Step 4: Enter the volume of hot water saved from the project's natural gas water heating system (the summation of step 3 and step 4 must not exceed annual volume of water savings). If not applicable, enter "0".	0	MG/year
Step 5: Enter the useful life in years for the project	100	years
Step 6: Enter the percentage of water that is imported	0%	
Step 7: Enter the Energy Intensity (EI) of the System associated with the project's water savings	999	kWh/MG
Step 8: Enter the total output emission rate specific to the power supplier or use the default value of 0.278	0.23655	kg CO ₂ e/kWh
Step 9: Enter EI associated with the Supply and Conveyance segment of the imported water or enter "0" if imported water is not applicable	0	kWh/MG
Step 10: Enter any additional annual energy savings from energy efficiency and renewable energy (EE/RE), etc.	0	kWh/year

Note: on a separate sheet provide the basis for the estimates and information sources for factors entered

Note: values below are determined from the above Project Assumptions

Units

Water Savings		
1) Annual volume of water savings within System	246	MG/year
2) Annual volume of imported water savings	0	MG/year
3) Annual volume of hot water heating system savings	0	MG/year
4) Lifetime volume of water savings within System	24600	MG
5) Lifetime volume of imported water savings	0	MG
6) Lifetime volume of hot water heating system savings	0	MG

Energy Savings		
1) Annual energy savings within System	245,754	kWh/year
2) Annual energy savings from imported water	0	kWh/year
3) Annual energy savings from electric hot water heating system	0	kWh/year
4) Annual energy savings from natural gas hot water heating system (used to calculate total energy saving)	0	kWh/year
5) Total annual energy savings from electric and natural gas hot water heating systems	0	kWh/year
6) Annual energy savings from natural gas hot water heating system (used to calculate GHG emission)	0	therms/year
7) Lifetime energy savings within System	24,575,400	kWh
8) Lifetime energy savings from imported water	0	kWh
9) Lifetime energy savings from electric hot water heating system	0	kWh
10) Lifetime energy savings from natural gas hot water heating system	0	kWh
11) Total lifetime energy savings from electric and natural gas hot water heating systems	0	kWh
12) Lifetime energy savings from natural gas water heating system	0	therms
13) Additional lifetime energy savings from Energy Efficiency and Renewable Energy (EE/RE), etc.	0	kWh

GHG Emission Reductions		
1) Annual GHG emission reductions within System	58,133	kg CO ₂ e/year
2) Annual imported GHG emission reductions	0	kg CO ₂ e/year
3) Annual GHG emission reductions from electric hot water heating	0	kg CO ₂ e/year
4) Annual GHG emission reductions from natural gas hot water heating system	0	kg CO ₂ e/year
5) Total annual GHG reductions from electric and natural gas hot water heating system	0	kg CO ₂ e/year
6) Lifetime GHG emission reductions within System	5,813,311	kg CO ₂ e
7) Lifetime GHG emission reductions from imported water	0	kg CO ₂ e
8) Lifetime GHG emission reductions from electric heating system	0	kg CO ₂ e
9) Lifetime GHG emission reductions from natural gas water heating system	0	kg CO ₂ e
10) Total lifetime GHG emission reductions from electric and natural gas hot water heating systems	0	kg CO ₂ e
11) Additional annual GHG emission reductions from Energy Efficiency and Renewable Energy (EE/RE), etc.	0	kg CO ₂ e/year
12) Additional lifetime GHG emission reductions from Energy Efficiency and Renewable Energy (EE/RE), etc.	0	kg CO ₂ e

Project Summary		
Total annual water savings	246	MG/year
Total lifetime water savings	24600	MG
Total annual energy savings	245,754	kWh/year
Total lifetime energy savings	24,575,400	kWh
Total annual GHG emission reductions	58,133	kg CO ₂ e/year
Total lifetime GHG emission reductions	5,813,311	kg CO ₂ e

ATTACHMENT 3

Work Plan

City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control

Project Description

The City of Sacramento Department of Utilities (the Department) is currently augmenting its leak detection and repair program with District Metered Area (DMA) Management. DMAs are discrete areas of the water distribution system that have a defined boundary typically encompassing 500-5,000 metered service connections, and are set up to provide leak detection savings assessment via isolation and installation of sub-meters on specific portions of the system. Areas with existing residential meters with Advanced Metering Infrastructure (AMI) technology are preferred and provide the most accurate data.

The traditional approach to leakage control has been a passive one, whereby the leak is repaired only when it becomes visible. The development of acoustic instruments has significantly improved the situation, allowing invisible leaks to be located as well. But the application of such instruments over the whole of a large water network is an expensive and time-consuming activity. The solution is a permanent leakage control system, whereby, the network is divided into DMAs supplied by a limited number of key mains, on which flow meters are installed. In this way, it is possible to regularly quantify the leakage level in each DMA so that the leakage location activity is always directed to the worst parts of the network.

The project will provide a viable medium to long term intervention strategy that will continue to increase water use efficiency throughout the City. This project is a continuation of the initial pilot-study DMA project which is currently underway. Through this project, the Department will be able to use DMA management as a tool to assess water savings, determine which parts of the distribution system are experiencing the highest level of leakage and determine areas that have limited leakage, so that resources can be targeted to the greatest effect.

The full scope of work will include selecting DMA study areas, DMA implementation and analysis, leak detection and repairs including a homeowner repair funding program to qualified low income residents, and reporting on results. As part of the scope, three to four DMAs will be set up to undertake field leakage measurements to quantify leakage volume, reduce leakage volumes to optimized levels and maintain the achieved leakage savings through ongoing DMA monitoring. The selected areas will be within Disadvantaged Communities (DACs) which will provide the greatest benefit to low income and disadvantaged residents who have limited resources to address service-side leaks within the City, increasing the savings on water losses. Once leaks have been identified and repaired, the DMA leakage measurements will be repeated to quantify leakage/water savings achieved.

The division of a large water network can be a delicate operation, which if not undertaken with care, can cause supply and quality problems. The expected benefits of implementing this project are working with smaller, more manageable areas; more focused active leakage

detection efforts, quicker identification of leaks, and shorter run-time of leaks. By implementing the proposed DMA's and associated repairs, the volume of real losses could be reduced from 135 gallons/connection/day (fiscal year 2012 data) to 40 gallons/connection/day across the distribution network. This will be a 70% reduction in water losses across the distribution network.

Task 1 – Project Management

This task is for the general management of the project and includes the management of City staff, consultants, general oversight of compliance measures and efforts relating to the management of the project including DWR grant coordination, invoicing, and reporting.

Deliverables for this task will be monthly invoices, required quarterly reporting, and completion reports to DWR.

Task 2 – DMA Implementation and Analysis

Task 2.1 – Select Final DMA Study Areas

The goal of this task is to create an additional three to four DMA's coinciding within the City of Sacramento's water distribution service area and DAC areas. The project team will select the final DMA study areas to be funded under this project by looking at the following criteria: DMA size, infrastructure requirements, water quality, hydraulic integrity of DMA, number of supply points into the DMA, inflow chamber design, possible backup supply point, minimum flow and pressure requirements for fire flow and insurance, customer base in DMA, looping and redundancy requirements, and target leakage level.

The data the Department would expect to receive from this project includes baseline customer use, an idea of background leakage, and recognition of the subtle (unreported) leaks that develop with time, and reduction of leakage losses to optimized levels. This is the information that the Department hopes to obtain from the DMA areas, which would then allow the Department to focus the leak detection crew's attention in order to maintain the achieved low levels of leakage.

Task 2.2 – Implement One-year Study

Based upon the final DMA's selected, the chosen areas will be implemented. The boundaries will be isolated and meters will be installed on all supply lines coming into the DMA. Once the DMA boundaries have been isolated, data will be collected and a Water Loss Baseline will be calculated by utilizing the DMA supply meter data collected and the AMR/AMI consumption data from the billing database, which will produce a mass

balance. In addition, the project team will quantify leakage losses in the selected DMAs based on the “Minimum Night Time Flow” measurement principle. These measurements will accurately quantify the leakage volume in each of the DMAs.

Task 2.3 – Report on Results

From the data collection and analysis, the project consultant will compile a report summarizing the results and give a presentation regarding the results. A list of priority areas for leak detection crews to focus on will be compiled.

Deliverables for this task include technical a memorandum summarizing selected DMA attributes, report detailing DMA analysis results, and locations for leak detection crews to concentrate their efforts.

Task 3 – Leak Detection and Fixes

This task includes leak detection and isolation following the results of the DMA studies. Department and contract leak detection crews will isolate leak locations and areas of concern using information and data obtained during the Task 2 phase. This phase is estimated to take 9 months.

Deliverables for this task are a compiled list of leaks found stating location, recommended resolution method, and cost for repair.

Task 4 – Leak Repairs

Repairs to identified leaking infrastructure are the final component of this project following the initial identification through the DMA Implementation task and isolation during the Leak Detection task.

Task 4.1 – Main Line/City Asset Repairs and Replacements

Under this task, the Department will use in-house staff and outside contractors to perform repairs and replacements to City-owned infrastructure as identified during the leak detection phase of the project. It is anticipated that 14 months will be required for this phase of the project.

Deliverables for this task are completed City-asset repairs within the DAC-areas funded through this project.

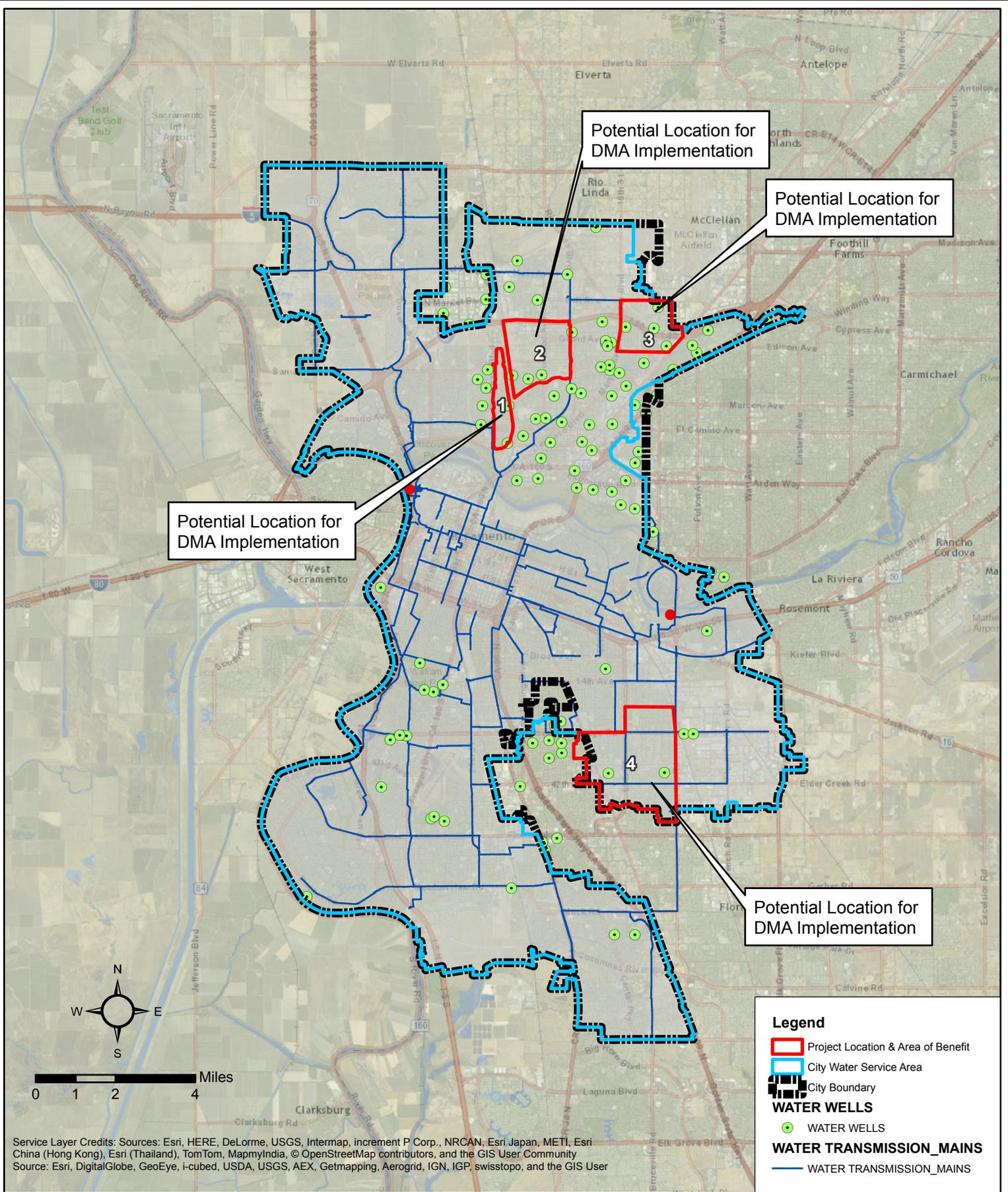
Task 4.2 – DAC Homeowner Funding Repair Program

Under this task, the Department will develop a DAC Homeowner Funding Repair program that will aid in the funding of service-side repairs for residents of the DAC

areas. Historically, service-side leaks are common within the City; this repair funding program will decrease the burden on low-income area residents to fix property owner service-side leaks. This task includes program start-up, outreach, and funding of the repairs. Program start-up activities will include development of the DAC-area repair funding program, program structure, funding criteria, and funding mechanism. Outreach will include bill inserts, mailers, and other outreach activities designed to provide information about the program to homeowners in the selected areas. The funding program will last approximately 14 months and will provide funding for approximately 125 service-side leak repairs for DAC-area water users.

Deliverables for this task are completed service-side repairs for homeowners within the DAC-areas.

There are no environmental compliance or permitting costs associated with the initial DMA implementation, leak detection, and repair phases. City-asset replacements may require further environmental compliance or permitting costs which will be identified as necessary as they are identified.



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 Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

SYSTEM MAP

City of Sacramento Department of Utilities
 District Metered Areas (DMAs) for Water Loss Control



ATTACHMENT 4

City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control
DWR Water-Energy Grant Application
December 12, 2014

Work Plan Tasks	Requested Grant Funding	Federal Contribution	Local Contribution	Inkind Contribution	Total
Task 1 - Project Management					\$ 32,739
Personnel Services	\$ 32,239	\$ -	\$ -	\$ -	\$ 32,239
Land/Easement Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -
Grantee Expenses	\$ 500	\$ -	\$ -	\$ -	\$ 500
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -
Professional and Consultant Services	\$ -	\$ -	\$ -	\$ -	\$ -
Construction/Implementation Cost	\$ -	\$ -	\$ -	\$ -	\$ -
Task 2 - DMA Implementation and Analysis					\$ 777,793
Personnel Services	\$ 36,793	\$ -	\$ -	\$ -	\$ 36,793
Land/Easement Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -
Grantee Expenses	\$ 1,000	\$ -	\$ -	\$ -	\$ 1,000
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -
Professional and Consultant Services	\$ 320,000	\$ -	\$ -	\$ -	\$ 320,000
Construction/Implementation Cost	\$ 420,000	\$ -	\$ -	\$ -	\$ 420,000
Task 3 - Leak Detection					\$ 233,812
Personnel Services	\$ 153,312	\$ -	\$ -	\$ -	\$ 153,312
Land/Easement Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -
Grantee Expenses	\$ 500	\$ -	\$ -	\$ -	\$ 500
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -
Professional and Consultant Services	\$ 80,000	\$ -	\$ -	\$ -	\$ 80,000
Construction/Implementation Cost	\$ -	\$ -	\$ -	\$ -	\$ -
Task 4 - Leak Repairs					\$ 1,455,772
Task 4.1 - Main line/City Asset Repairs and Replacements					\$ 827,724
Personnel Services	\$ 327,524	\$ -	\$ -	\$ -	\$ 327,524
Land/Easement Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -
Grantee Expenses	\$ 200	\$ -	\$ -	\$ -	\$ 200
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -
Professional and Consultant Services	\$ -	\$ -	\$ -	\$ -	\$ -
Construction/Implementation Cost	\$ 500,000	\$ -	\$ -	\$ -	\$ 500,000
Task 4.2 - DAC Homeowner Funding Repair Program					\$ 628,048
Personnel Services	\$ 67,548	\$ -	\$ -	\$ -	\$ 67,548
Land/Easement Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -
Grantee Expenses	\$ 30,500	\$ -	\$ -	\$ -	\$ 30,500
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -
Professional and Consultant Services	\$ 30,000	\$ -	\$ -	\$ -	\$ 30,000
Construction/Implementation Cost	\$ 500,000	\$ -	\$ -	\$ -	\$ 500,000
					\$ 2,500,000

ATTACHMENT 5



City of Sacramento Department of Utilities
 District Metered Areas (DMAs) for Water Loss Control
 DWR Water-Energy Grant Application
 December 12, 2014



ID	Task Name	Duration	Start	Finish	2015				2016				2017				2018				
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3				
1	City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control	926 days	Fri 12/12/14	Fri 6/29/18																	
2	Grant Submission	1 day	Fri 12/12/14	Fri 12/12/14																	
3	City Council Resolution	1 day	Tue 2/10/15	Tue 2/10/15																	
4	Grant Award	1 day	Thu 4/30/15	Thu 4/30/15																	
5	Task 1 - Project Management	783 days	Wed 7/1/15	Fri 6/29/18																	
6	Project Management	761 days	Wed 7/1/15	Wed 5/30/18																	
7	DWR Coordination and Invoicing	761 days	Wed 7/1/15	Wed 5/30/18																	
8	DWR Reporting	766 days	Fri 7/24/15	Fri 6/29/18																	
9	Task 2 - DMA Implementation and Analysis	421 days	Wed 7/1/15	Wed 2/8/17																	
10	Task 2.1 - Select Final DMA Study Areas	6 mons	Wed 7/1/15	Tue 12/15/15																	
11	Task 2.2 - Implement One-year Consumption Monitoring	365 edays	Tue 12/15/15	Wed 12/14/16																	
12	Task 2.3 - Report on Results	2 mons	Thu 12/15/16	Wed 2/8/17																	
13	Task 3 - Leak Detection and Fixes	180 days	Thu 2/9/17	Wed 10/18/17																	
14	Leak Detection Crews Isolate Leaks	9 mons	Thu 2/9/17	Wed 10/18/17																	
15	Task 4 - Leak Repairs	741 days	Fri 5/29/15	Fri 3/30/18																	
16	Task 4.1 - Main Line/City Asset Repairs and Replacements	14 mons	Mon 3/6/17	Fri 3/30/18																	
17	Task 4.2 - DAC Homeowner Funding Repair Program	741 days	Fri 5/29/15	Fri 3/30/18																	
18	Program Development	9 mons	Fri 5/29/15	Thu 2/4/16																	
19	Program Outreach	28 mons	Fri 2/5/16	Thu 3/29/18																	
20	Program Funding	14 mons	Mon 3/6/17	Fri 3/30/18																	

Schedule – Description of Timeline

City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control

The City of Sacramento Department of Utilities (Department) will be ready to proceed with work once the Department of Water Resources Water Energy Grant (Grant) is awarded. The proposed scope of the Grant is a continuation from the first phase of District Metered Area (DMA) implementation which is currently underway. Because of this minimal start-up will be required for this project to proceed.

If during the course of the repair phase of the project, environmental compliance or other permitting becomes required, it will become a high priority task for the team to complete. Environmental compliance and permitting are not currently anticipated to be required under the scope of the project.

The Department understands that all work must be completed under this grant funding by April 1, 2018.

ATTACHMENT 6

Proposal Monitoring Plan

City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control

Water, energy, and greenhouse gas (GHG) reductions resulting from the proposed project will be monitored by the City of Sacramento Department of Utilities (the Department) in several ways including annual water audits, meter data, and leak data.

The Department conducts annual water audits of its water system for reporting to the California Urban Water Conservation Council. The Department performs the water audit using methodology from the American Water Works Association (AWWA) M36 Water Audits and Loss Control Programs document. Water savings from this project will be captured in the annual audit and provided as water losses in gallons/connection/day.

The project will also focus on areas with Advanced Metering Infrastructure (AMI) meters installed allowing the Department to provide data showing the reductions in water losses from service-side leaks. AMI meters provide consumption data in short-increment time frames allowing the Department to easily identify and report consumption reductions once the leaks are fixed. This will allow the Department to identify the amount of water, energy, and GHG savings through the service-side leak repair program.

Leak detection and construction crews repairing or replacing leaking City-owned assets such as pipes, fittings, and valves can estimate leakage rates of these items by using the methodology in the AWWA M36 manual. These estimates will be used to quantify an estimate of water, energy, and GHG reductions through these repairs.

Further details of the monitoring and subsequent reporting will be finalized through the agreement development process per the grant solicitation package.

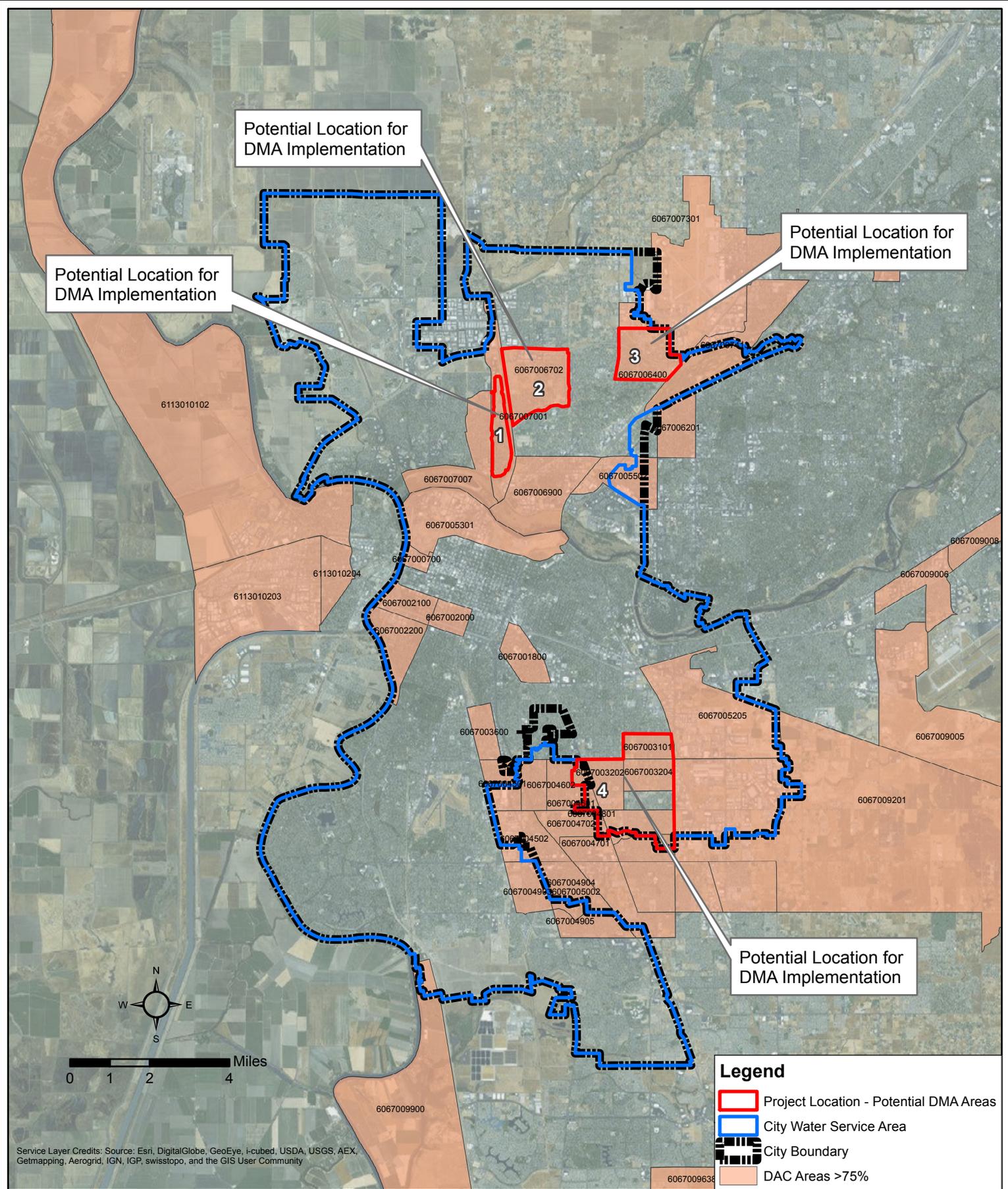
ATTACHMENT 7

Disadvantaged Community – Description of Benefits

City of Sacramento Department of Utilities District Metered Areas (DMAs) for Water Loss Control

The City of Sacramento Department of Utilities (Department) is proposing to use the funds from the Department of Water Resources Water Energy Grant to implement water loss reduction measures within areas of its service boundary that are also Disadvantaged Area Communities (DAC's) census areas ranking higher than 76% according to the CalEnviroScreen 2.0 Tool on December 12, 2014. Under this project the Department will be first selecting areas of its system that are suitable for analysis under the District Metered Area (DMA) program and are also DAC areas. These areas will then have DMA's implemented. The results from the DMA analysis will provide guided direction for Department and contract leak detection staff to find and isolate leaking areas of the water system for both City-asset and service-side leaks. The project funds will also go to leak repairs and fixes of both City-asset and service-side leaks within DAC areas. An outreach and funding program will be established to assist DAC-area residents in the repair of service-side leaks. As such, all grant funds will be spent to benefit DAC areas and thus will provide water, energy, and greenhouse gas (GHG) reductions to these DAC census-area residents.

The Department has pre-selected several potential DMA areas within DAC areas as shown on the DAC Map. Potential DMA areas will be analyzed for suitability under the DMA measurement methodology through hydraulic analysis, discussions with the Department staff, system characteristics, and other criteria. Also, the Department's meter installation program is progressing very rapidly and more areas that are concurrently metered and DAC areas will be available for funding under this grant proposal. If the areas currently pre-selected are not the best suited to DMA methodology, other areas that meet the DAC and system criteria will be selected alternatively. These areas will provide the same level of water, energy, and GHG savings.



DAC MAP

City of Sacramento Department of Utilities
 District Metered Areas (DMAs) for Water Loss Control