Meeting Date: **9/1/2015**

Report Type: Consent

Report ID: 2015-00729

City of SACRAMENTO 15

City Council Report

915 I Street, 1st Floor

www.CityofSacramento.org

Title: Department of Water Resources Water-Energy Grant Award and Supplemental Agreement for District Metered Areas for Water Loss Control

Location: Citywide

Recommendation: Pass a Resolution authorizing the City Manager or the City Manager's designee to 1) establish the newly awarded California Department of Water Resources (DWR) Water-Energy Grant project (G14160100) to utilize funding awarded for District Metered Area (DMA) Management for Water Loss Control; 2) establish revenue and expenditure budgets in an amount not to exceed $2,500,000; and 3) execute Supplemental Agreement No. 1 to Agreement 2014-1006 with Water Systems Optimization, Inc. to continue and augment the DMAs Program for Water Loss Control for an additional amount of $650,504, bringing the agreement's total not-to-exceed amount to $819,897.

Contact: Michael Malone, Operations Manager, (916) 808-6226; Julie Friedman, Program Specialist, (916) 808-7898, 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-Supplemental Agreement

5-Attachment 2 to Exhibit A

6-Attachment 2 to Exhibit B

City Attorney Review

Approved as to Form

Joe Robinson

8/25/2015 1:18:02 PM

Approvals/Acknowledgements

Department Director or Designee: Bill Busath - 8/14/2015 3:09:09 PM

Description/Analysis

Issue Detail:
The Department of Utilities (DOU) is augmenting its water 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. On September 23, 2014, the City Council approved an agreement with Water Systems Optimization, Inc., to design, implement and report on the results of a pilot phase of the DMA program, for a not-to-exceed amount of $169,800.

On June 24, 2015 the Department of Water Resources (DWR) announced the award of the 2014 Water-Energy grants and awarded the City of Sacramento the maximum amount of $2,500,000 for the DMAs Program for Water Loss Control that will save water and energy, and reduce greenhouse gas emissions. The amount of the grant was based on funding three to four DMAs within disadvantaged community areas to help identify existing leaks within the water distribution system and to better identify leaks in the future. This project also provides funding for additional leak detection work as well as funding for both City-asset and customer-side leak repairs identified during this project. Staff requests approval of budgetary actions to utilize this grant funding, and approval of a supplemental agreement to extend the Water Systems Optimization agreement through June 30, 2018, for the performance of additional professional services to continue and augment the DMAs Program for Water Loss Control. The additional cost of $650,504 will be reimbursed from the grant funding.

Policy Considerations:
The DMAs project furthers the City's water conservation efforts, is 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 based on the California Urban Water Conservation Council Memorandum of Understanding and the American Water Works Association 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:
On May 20, 2014 the DOU issued a Request for Qualifications (RFQ) #14141411020 for a DMA Pilot Program for Water Loss Control. Three firms submitted Statements of Qualifications (SOQs). The selection panel evaluated the SOQs submitted and determined Water Systems Optimization, Inc. to be the top-ranked firm to provide these services. On September 23, 2014, the City Council approved an agreement with Water Systems Optimization, Inc., to design, implement and report on the results of the pilot phase of the DMA program, for a not-to-exceed amount of $169,800.

On February 17, 2015, DOU received City Council 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 $2,500,000, and to execute all agreements related to the grant if the grant is awarded (Resolution No. 2015-0042).
On June 24, 2015, the DWR announced the award to the City of Sacramento of the maximum grant amount of $2,500,000, based on funding three to four DMAs within disadvantaged area communities, to help identify existing leaks within the water distribution system, and fund both City-asset and customer-side leak repairs identified during this project. Supplemental services will support the continuation and augmentation of the program through FY2018 and include a program to help qualified low-income and disadvantaged residents with resources for repairs.

Financial Considerations:
The grant award has no requirement for matching funds from the City. The Department will establish a revenue and expenditure budget in the DWR Water-Energy Grant for DMA Management for the Water Loss Control project (G14160100) in an amount not to exceed $2,500,000.

The proposed agreement increase is $650,904, for a new not-to-exceed total of $819,907, which will be reimbursed by the DWR Water-Energy grant.

Local Business Enterprise (LBE):
Water Systems Optimization will comply with the City's minimum five percent LBE participation level on this agreement.

Background

On May 20, 2014 the Department of Utilities (DOU) issued a Request for Qualifications (RFQ) #14141411020 for a District Metered Area (DMA) Pilot Study for Water Loss Control. Three firms submitted Statements of Qualifications (SOQs). The selection panel evaluated the SOQs submitted and determined Water Systems Optimization, Inc. (WSO) to be the top-ranked firm to provide these services. The original agreement had a not to exceed amount of $169,800 for a pilot phase of service that is being completed in FY2016-17 and includes designing, developing, implementing, and reporting on results of the program.

On February 17, 2015, the City Council authorized the City Manager or the City Manager's designee to submit an application to the California Department of Water Resources (DWR) to obtain a 2014 Water-Energy Grant, and, if awarded, enter into an agreement to receive the grant for DOU's DMAs for Water Loss Control Project.

On June 24, 2015, the DWR announced the award to the City of Sacramento of the maximum grant amount of $2,500,000, based on funding three to four DMAs within disadvantaged area communities, to help identify existing leaks within the water distribution system, and fund both City-asset and customer-side leak repairs identified during this project. The amount of the grant was based on the number of DMAs and the grant eligibility ranking was based on a number of factors including water and energy savings, greenhouse gas emissions reductions, and disadvantaged area communities benefit.

The DOU Director, as the City Manager's designee, accepted the grant agreement on July 21, 2015. The grant award has no requirement for matching funds from the City.

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 DOU 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 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 approximately 135 gallons/connection/day. DOU estimates that the DMA project could reduce those losses by approximately 70 percent (95 gallons/connection/day), resulting in reducing losses to approximately 40 gallons/connection/day across the water distribution network.

DOU is able to utilize the DWR grant to fund up to four DMAs within disadvantaged area communities. The selected areas 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.

RESOLUTION NO.
2015-0042

Adopted by the Sacramento City Council

SUPPLEMENTAL AGREEMENT AND BUDGETARY ACTIONS TO APPROPRIATE GRANT FUNDING FOR DISTRICT METERED AREA MANAGEMENT FOR WATER LOSS CONTROL

BACKGROUND

A. The Department of Utilities (DOU) is augmenting its water 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.

B. On September 23, 2014, the City Council approved an agreement with Water Systems Optimization, Inc., to design, implement and report on the results of a pilot phase of the DMA program, for a not-to-exceed amount of $169,800.

C. On February 17, 2015, the City Council adopted Resolution No. 2015-0042 authorizing City staff 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 $2,500,000, and to execute the grant agreement if the grant was awarded.

D. On June 24, 2015, the DWR awarded the City the maximum amount of $2,500,000 for the DMAs Program for Water Loss Control based on funding three to four DMAs within disadvantaged community areas to help identify existing leaks within the water distribution system and to better identify leaks in the future. This project also provides funding for additional leak detection work as well as funding for both City-asset and customer-side leak repairs identified during this project.

E. Budgetary actions are needed to utilize the grant funding, and City staff is requesting approval of a supplemental agreement to extend the Water Systems Optimization agreement term through June 30, 2018, to provide professional services to continue and augment the DMAs

Program for Water Loss Control. The additional cost of $650,504 will be reimbursed from the grant funding.

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:

A. Establish the California Department of Water Resources (DWR) Water-Energy Grant for DMA Management for the Water Loss Control project (G14160100) to utilize funding awarded for District Metered Area (DMA) Management for Water Loss Control;

B. Establish revenue and expenditure budgets in the DWR Water-Energy Grant for DMA Management for Water Loss Control project (G14160100) in an amount not to exceed $2,500,000; and

C. Execute Supplemental Agreement No. 1 to Agreement 2014-1006 with Water Systems Optimization, Inc., for an additional amount of $650,504, bringing the Agreement's total not-to-exceed amount to $819,897.

SUPPLEMENTAL AGREEMENT

Project Title and Job Number: District Metered Areas (DMAs) for Water Loss **Date:** 7-30-15
Purchase Order #: **Supplemental Agreement No.:** 2014-1006-1

The City of Sacramento ("City") and Water Systems Optimization, Inc. (WSO) ("Contractor"), as parties to that certain Professional Services Agreement designated as Agreement Number 2014-1006, including any and all prior supplemental agreements modifying the agreement (the agreement and supplemental agreements are hereafter collectively referred to as the "Agreement"), hereby supplement and modify the Agreement as follows:

1. The scope of Services specified in Exhibit A of the Agreement is amended as follows:

   Contractor shall perform additional services through June 30, 2018, as specified in Attachment 2 to Exhibit A, attached hereto and incorporated by this reference. Contractor shall be compensated for these additional services in accordance with the fee and rate schedules set forth in Attachment 2 to Exhibit B, attached hereto and incorporated by this reference.

2. In consideration of the additional and/or revised services described in section 1, above, the maximum not-to-exceed amount that is specified in Exhibit B of the Agreement for payment of Contractor's fees and expenses, is Increased by $650,904, and the Agreement's maximum not-to-exceed amount is amended as follows:

Agreement's original not-to-exceed amount:	$169,083.00
Net change by previous supplemental agreements:	.00
Not-to-exceed amount prior to this supplemental agreement:	$169,083.00
Increase by this supplemental agreement:	$650,904.00
New not-to exceed amount including all supplemental agreements:	$819,987.00

3. Contractor agrees that the amount of increase or decrease in the not-to-exceed amount specified in section 2, above, shall constitute full compensation for the additional and/or revised services specified in section 1, above, and shall fully compensate Contractor for any and all direct and indirect costs that may be incurred by Contractor in connection with such additional and/or revised services, including costs associated with any changes and/or delays in work schedules or in the performance of other services or work by Contractor.

4. Contractor warrants and represents that the person or persons executing this supplemental agreement on behalf of Contractor has or have been duly authorized by Contractor to sign this supplemental agreement and bind Contractor to the terms hereof.

5. Except as specifically revised herein, all terms and conditions of the Agreement shall remain in full force and effect, and Contractor shall perform all of the services, duties, obligations, and conditions required under the Agreement, as supplemented and modified by this supplemental agreement.

Approval Recommended By:

Julie Nielsen
Project Manager

Approved As To Form By:

City Attorney

Approved By:

(COO-WSO)
Contractor REINHARD STURM

Attested To By:

Approved By:

City of Sacramento

City Clerk

(Rev. 9-17-12)

Attachment 1 to Exhibit A

Scope of Work

The proposed scope of work is designed to assist the DOU in successfully implementing this project.

Task 1 - Project Management and Reporting

The goal of this task is to effectively manage the coordination and project management activities associated with this contract. This task also includes coordination, invoicing, and reporting to DWR per the requirements of the grant agreement.

Task 1 includes the following subtasks and activities:

- **Project Management and Reporting for this three year project include:**
  - Invoicing, file management, and contract management throughout duration of project (approximately 37 months).
  - DWR contract management including coordination, invoicing, and reporting.
  - Coordination and meetings with City and project teams.

Task 2 – Select 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. Steps and services necessary to successfully select up to four DMAs include:

- Regular meetings with DOU.
- Collection and review of maps to identify up to four suitable areas for DMA implementation.
- Run a hydraulic model in all four potential study areas. The hydraulic model will consider: number of supply points needed, location of supply points, minimum flow and pressure requirements, and fire flow requirements.
- Produce a TM on the findings of task 2 and meet with DOU to discuss findings and recommendations for selection of DMA.
- Achieve consensus for DMA selection.

Task 3 – DMA Implementation and Analysis

Based upon the final DMA's selected, the project team will assist the DOU in implementing the chosen DMAs. DOU staff will isolate the DMA boundaries and purchase and install meters on all supply lines coming into the DMA. Once the DMA boundaries have been isolated, the project team will collect data 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.

Steps and services necessary to successfully implement up to four DMAs and to quantify and monitor leakage losses in each DMA include:

- Verification of hydraulic integrity of DMA boundary valves through deployment of pressure loggers.
- Prepare list of boundary valves not holding tight for DOU to replace these valves (if any).
- Provide assistance with supply meter selection and selection of data collection technologies to be used.
- The project team will locate, design, provide construction documents, assist the City in bidding, and provide engineering services during construction for the construction of meter vaults in the 4 chosen DMAs. This task assumes 16 meter vault locations.
- Develop DMA customer data base.
- Collection and analysis of consumption data for each DMA.
- Assessment and quantification of water loss baseline (before intervention) for each DMA through development of a mass balance and the "Minimum Night Time Flow" measurement principle.
- Monitoring of water loss in each DMA – pre and post leak detection and repair.

From the data collection and analysis, the project team 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 4 - Leak Detection

Task 4 includes leak detection and isolation of distribution side leaks and customer side leaks, following the results of the DMA studies. The project team will also assist the leak detection activities with mapping and database tracking.

Deliverables for this task are a compiled list of leaks found stating location, recommended resolution method, cost for repair, estimated flow rate, repair priority, owner, occupier, leak/no leak, date of leak detection. Approximately twenty attributes will be tracked as part of this phase.

Task 5 – Leak Repair Phase Assistance

Task 5 includes leak repair phase assistance for both City-asset and homeowner repairs. Assistance for the City-asset repairs under subtask 5.1 is limited to mapping, recommendations of asset replacement or repair, and database tracking.

Under subtask 5.2, the project team will assist DOU with development of a program to implement homeowner repair program. This task includes development of program alternatives, working with City staff to choose a preferred program, and aid in implementing the program. The project team will provide program outreach support by providing mapping and support at community meetings as needed. Program database tracking and management will be provided by the project team to develop, populate, and maintain database for tracking homeowner repairs including contractor and repair information. Database will be developed to aid in management of the program for the City and for reporting to DWR. Approximately twenty attributes in addition to task 4 will be tracked as part of this phase. Database will be designed with the ability to interact with existing City databases as needed.

Attachment 2 to Exhibit B

Fee Schedule

Compensation for services performed in this proposal will be billed monthly on a percentage complete basis with a not to exceed amount of $650,904.

Task 1	Project Management and Coordination	$ 126,836
Task 2	Select DMA Study Areas	$ 110,118
Task 3	DMA Implementation and Analysis	$ 140,240
Task 4	Leak Detection	$ 136,852
Task 5	Leak Repairs	$132,858
	Total Directs	$4,000
	Total Fee:	**$650,904**

Optional Services not included in scope or budget:

a. DMA meter procurement and installation
b. DMA meter data logger procurement and installation
c. Water quality monitoring
d. Environmental Investigation and Clearance
e. SWPPP
f. Traffic Control Plans
g. Waterline Hydraulic Analysis/Sizing
h. Design of City-owned asset repairs or replacements
i. Design of homeowner-side repairs
j. PRV and/or Flowmeter Design
k. SCADA/Electrical Plans
l. Other Utility Coordination
m. Special Structures/Calculations
n. Survey/Easement Coordination
o. Encroachment Permit Processing
p. Construction Management or Inspection
q. Construction Staking/Layout
r. Meetings in addition to those specified above
s. Any work not specifically mentioned in this Scope of Services

Attachment 2 to Exhibit B

RATE SHEET
City of Sacramento Department of Utilities (DOU)
Supplemental Agreement 2014-1006

District Metered Areas (DMAs) Pilot Study for Water Loss

Staff Member	Billable Hourly Rate
WSO	
Technical Project Advisor	$260
Project Director	$250
Project Manager	$120
Leak Detection Specialist	$110
Parsons Brinckerhoff	
Project Manager - Lead Engineer	$146
Supervising Manager	$247
Program Development Principal Engineer	$331
Senior Supervisory Engineer II	$242
Senior Supervisory Engineer I	$170
Database Specialist	$118
GIS Specialist	$111
Engineer II	$95
Engineer I	$80
Admin Assistant	$70
Project Accountant	$138