



# Automated Metering Infrastructure (AMI) Installation Project

## WaterSMART: Water and Energy Efficiency Grants for FY2019 BOR-DO-19-F004 — Funding Group I

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## SECTION 1: TECHNICAL PROPOSAL

### A. Executive Summary

**Date:** March 19, 2019  
**City:** Santa Ana  
**County:** Orange County  
**State:** California

**Applicant Name:** City of Santa Ana  
**Project Length of Time:** 24 months  
**Estimated Completion Date:** July 1, 2021  
**Located on a Federal Facility:** No

To further increase the City of Santa Ana's water supply reliability and support water conservation and management efforts, the City proposes to convert 25 percent of its 44,565 manual-read water meters that include all of its large meters and 10,749 of the City's oldest meters to advanced metering infrastructure (AMI). This funding will support the replacement of 11,250 manual-read meters with AMI technologies and will allow the City to accomplish various project activities including AMI installation, facilities construction, materials and equipment (registers, meters, meter boxes, lids, software, hardware, AMI tower materials), Meter Data Management System (MDMS), leak detection technologies, interactive web portal installation, as well as pressure-monitoring capabilities. AMI will provide real-time operational modeling information, establish a distribution leak detection system, and provide water-consumption data to allow individuals to manage their water usage. Implementation of this project will result in quantifiable water and energy savings, as well as support broader water reliability benefits by providing the following:

- Estimated water savings of 371 acre-feet per year,
- Associated energy savings of 6,598,432 kilowatt-hours (kWh) per year,
- Reduced time, labor, cost, energy, and Greenhouse Gas emissions compared to the existing metering system, which requires personnel to physically drive to and manually read each meter,
- Immediate water leakage detection, which will reduce energy consumption and water waste by providing a web portal for customer information on consumption data

### B. Background Data

The City of Santa Ana is located in Southern California and has a population of approximately 325,000 people within its 27-square-mile service area. Santa Ana is densely populated and supplies over 12.5 billion gallons of water with 44,565 meter connections.

The City of Santa Ana (City) relies on approximately 71 percent local groundwater from the Orange County Groundwater Basin (OC Basin), 28 percent purchased water from the



Metropolitan Water District (MWD), and 1 percent recycled water through the Orange County Water District (OCWD) Green Acres Project.

The majority of the City’s potable water supply comes from groundwater in the OC Basin. OCWD is responsible for managing the OC Basin, including water quality and groundwater replenishment, and the City manages its 21 groundwater wells and distribution system. The OC Basin is not adjudicated and as such, pumping from the OC Basin is managed through a process that uses financial incentives to encourage groundwater producers to pump a sustainable amount of water. The remaining 28 percent of the City’s water supply is supplemented by the MWD. MWD receives water from the Colorado River via the Colorado River Aqueduct (CRA) and the Lake Oroville watershed in Northern California through the State Water project (SWP). The water obtained from these sources is treated at a regional plant called the Robert B. Diemer Filtration Plant located north of Yorba Linda. Typically, the Diemer Filtration Plant receives a blend of Colorado River water from Lake Mathews through the Metropolitan Lower Feeder and SWP water through the Yorba Linda Feeder. The City manages and maintains seven imported water connections that receive water through MWD’s Orange County and East Orange County Feeder pipelines. The seven metered connections have a total capacity of 60,580 gallons-per-minute and transfer water into the City’s distribution system.

As shown below in Figure 1, the City’s total water demand in 2015 was 36,656 acre-feet and is expected to increase to 39,716 acre-feet by 2040.

**Table 1: Actual and Project Water Demands in Acre Feet**

| Use Type                                    | Actual        | Projected Water Use |               |               |               |               |
|---|---------------|---------------------|---------------|---------------|---------------|---------------|
|   | 2015          | 2020                | 2025          | 2030          | 2035          | 2040          |
| Single-Family                               | 14,084        | 14,093              | 15,138        | 15,242        | 15,238        | 15,260        |
| Multi-Family                                | 10,399        | 10,406              | 11,177        | 11,254        | 11,251        | 11,267        |
| Commercial, Institutional, Industrial (CII) | 12,025        | 12,033              | 12,925        | 13,014        | 13,010        | 13,029        |
| Landscape (Large)                           | 147           | 147                 | 158           | 159           | 159           | 159           |
| <b>Total</b>                                | <b>36,656</b> | <b>36,678</b>       | <b>39,397</b> | <b>39,669</b> | <b>39,658</b> | <b>39,716</b> |

The City maintains 480 miles of transmission and distribution mains, 10 reservoirs with a storage capacity of 49.3 million gallons, seven pumping stations and 26 booster pumps, four pressure regulating stations with pressure reducing and safety valves (PRV/PSV) that allow flows between the water system’s two pressure zones (High Zone to the Low Zone), 21



groundwater wells, and seven import water connections. The City’s Public Works Agency - Water Resources Division oversees and maintains the daily operations of the water system.

The below table provides a summary of the City’s water service accounts and size of meters by customer class, based on numbers from the City’s 2010 Urban Water Management Plan.

**Table 2: Summary of City of Santa Ana Water Service Accounts and Meter Sizes**

| CUSTOMER CLASS                        | APPROXIMATE NUMBER OF ACCOUNTS |
|---------------------------------------|--------------------------------|
| Single-Family Residential             | 35,581                         |
| Multi-Family Residential              | 3,565                          |
| Commercial, Institutional, Industrial | 5,406                          |
| Landscape                             | 12                             |
| <b>TOTAL</b>                          | <b>44,565</b>                  |

| METER SIZE   | NUMBER OF UNITS |
|--------------|-----------------|
| 3/4"         | 5462            |
| 5/8"         | 31387           |
| 1"           | 4139            |
| 1 ½"         | 1401            |
| 2"           | 1675            |
| 3"           | 320             |
| 4"           | 146             |
| 6"           | 35              |
| <b>TOTAL</b> | <b>44,565</b>   |

Because of the drought conditions, on April 14, 2015, MWD took action to reduce water deliveries to its member agencies, including the City of Santa Ana’s share, which was reduced by 15 percent. Following this action, on June 2, 2015, the City Council of Santa Ana declared a Phase 2 Water Supply Shortage. By this resolution, the City Council declared that a water shortage existed and ordered that water customers must reduce their monthly total potable water consumption by 12 percent, using 2013 as the base year. Overall, City of Santa Ana water use decreased by 16.97 percent between June 2015 and February 2016 — the nine months of the initial statewide conservation mandate — achieving a 12 percent reduction.

While the 2016-2017 and the current water conditions have improved, the long-term impacts from the historic drought, as well as continued drought conditions of 2018, have served as a warning for the City to explore new energy efficiency methods to save every drop of its precious water resources.

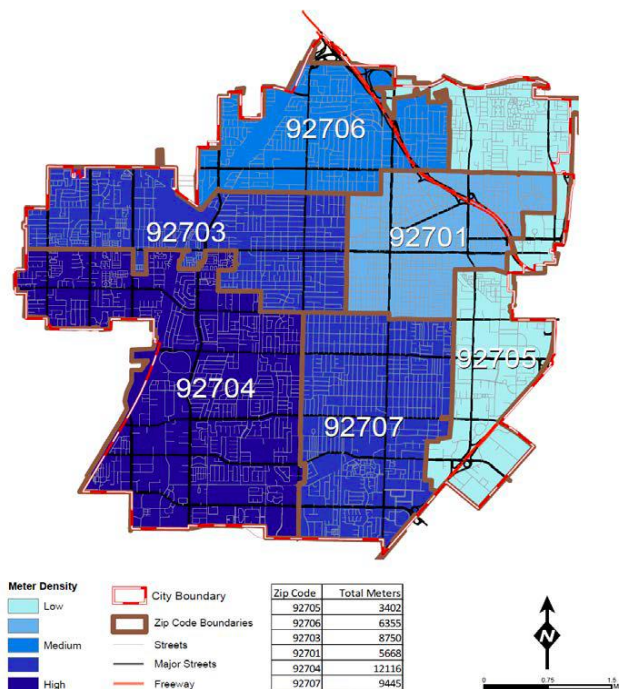


The City of Santa Ana’s current water supply from groundwater production in the OC Basin is limited and MWD has considered the potential impacts climate change may have on the quantity of imported water available; Therefore, the City hopes to help increase the reliability of its water supply through implementation of Advanced Metering Infrastructure (AMI). This water conservation project will address the potential shortfalls in the City’s water supply by directly improving water conservation and management efforts.

This project will focus on 11,250 meters, 501 of the largest meters (3-inch, 4-inch, and 6-inch) and 10,749 of the oldest meters. The largest meters serve apartment complexes and commercial and industrial areas and will result in a larger impact since they serve multiple large user customers and operational areas.

Figure 2 shows a meter density map for the City based on zip code.

**Figure 1: Meter Density Map**



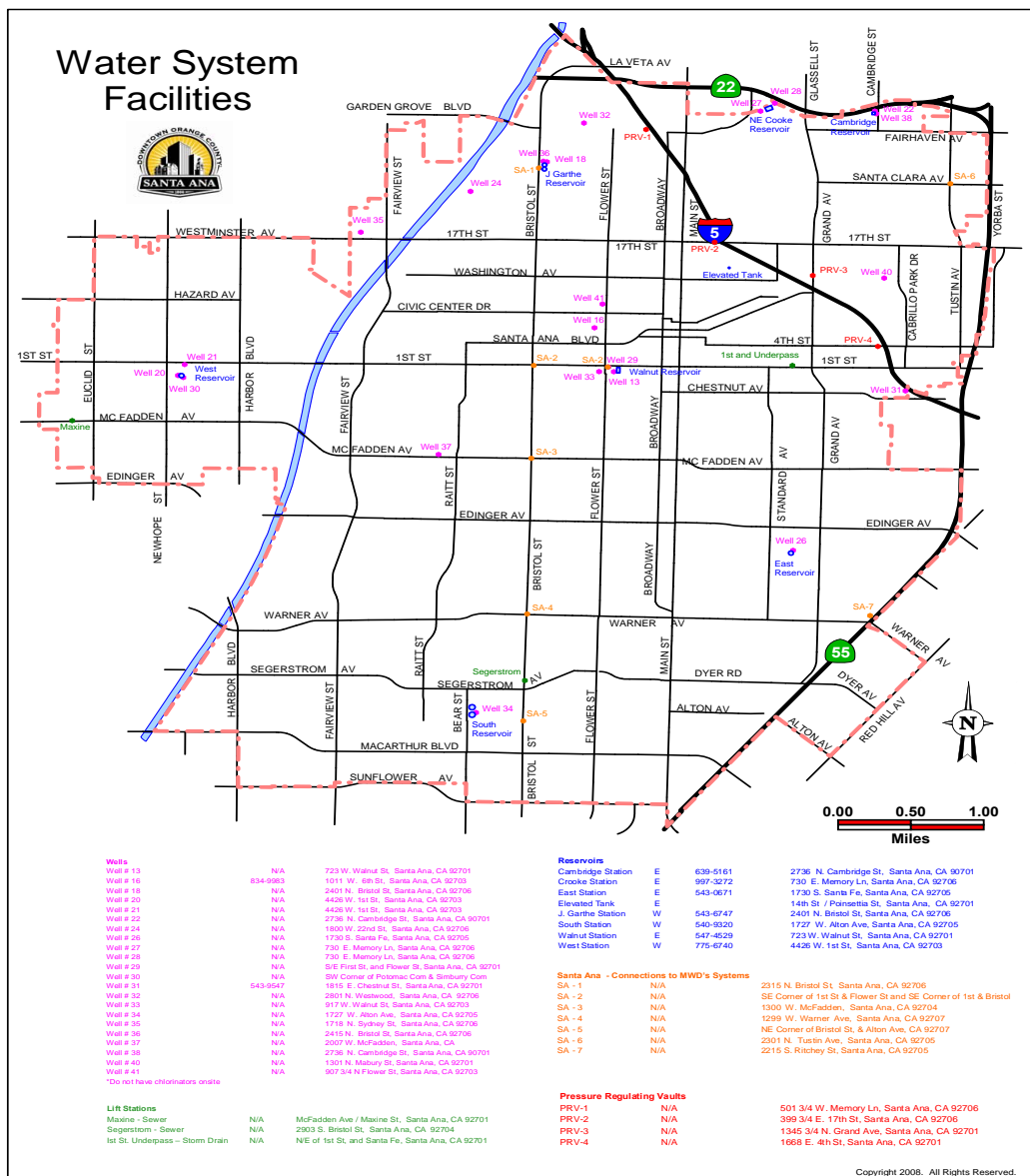
The City of Santa Ana received a grant from the Drought Response Program of Bureau of Reclamation in 2018 for its Well 32 Rehabilitation Improvements



### C. Project Location

The Automated Metering Infrastructure (AMI) Installation Project is located in City of Santa Ana in Orange County, California, approximately 30 miles southeast of Los Angeles. The City of Santa Ana is bounded on the north by the Cities of Garden Grove and Orange, on the east by the Cities of Tustin and Irvine, on the south by the City of Costa Mesa, and on the west by the Cities of Westminster and Fountain Valley. The approximate project latitude is 33°44'N and longitude is 117°52'W. See Figure 3 for a map of the City including the locations of the water system facilities.

Figure 2: Location Map of Existing Water System Facilities







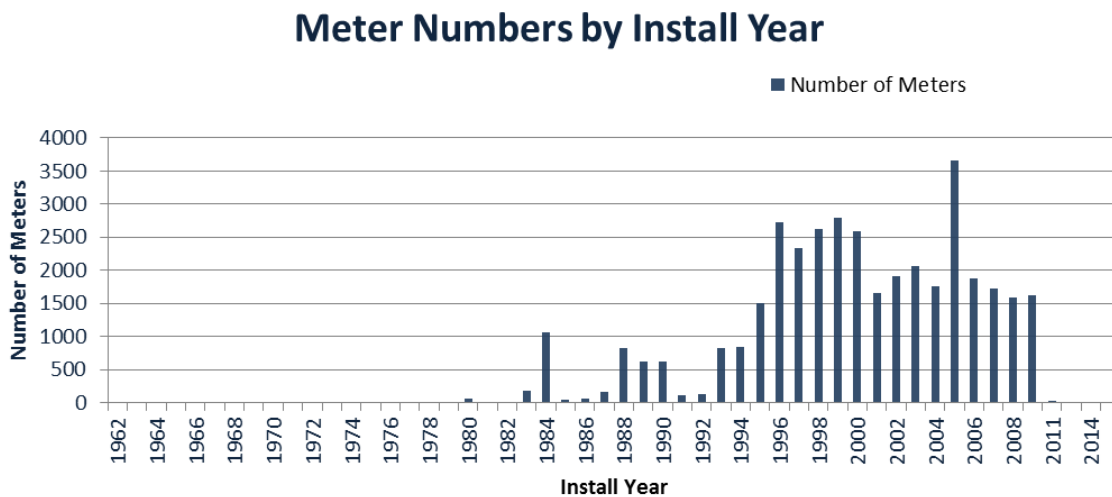
### D. Technical Project Description

The City of Santa Ana’s AMI project addresses the largest sources of water loss for the City and will significantly improve the City’s water management, conservation, and water supply reliability efforts. The current meter reading process involves Public Works personnel who must physically drive to each of the 44,565 metered locations within the City to manually read water meters every other month. The City uses Enquesta for its billing system, which cannot store large volumes of meter reads or easily create billing determinants from the attained data. The City’s existing meter reading system is inefficient due to its excessive labor time to read meters, cost of vehicle maintenance, and Greenhouse Gas emissions from the vehicle miles traveled. Therefore, the City is striving to replace its existing water metering system with Advanced Metering Infrastructure (AMI), which will provide real-time data, as well as allow meters to be read remotely from a central location through a radio-frequency-based fixed communications network. This system will include an interactive web portal, leak detection technologies, Meter Data Management System (MDMS), and pressure monitoring.

City of Santa Ana retained Black & Veatch to prepare an AMI Feasibility Report in 2016, a Road Map to Smart Water Utility to evaluate the use of smart metering technologies for the City. Black & Veatch reviewed the City’s current metering practice and requirements, evaluated the manual meter reading process and accessed the relevant market leading solutions to evaluate available options and scenarios. Following summarize the current issues and practices:

- 1. **Metering Infrastructure:** The Black & Veatch report indicates that 85% of City’s manual read water meters are over 10 years old. Figures 3 shows details of the meters installed by year. The data shows that almost half of the meter population is over 15 years old.

Figure 3: Number of Meters by Installation Year





The City staff replace about 1,500 meters each year under the City's Meter Replacement Program. This translates to over eight years if staff only concentrated on replacing the meters proposed for this project and ignoring all other needs, which is not a practical process and yet requires a long time to address the biggest source of water loss for the City.

In the proposed project, the City will replace all of its large-size meters (3-inch, 4-inch, and 6-inch) a total of 501 meters and 10,749 of the oldest meters.

- 2. Current Meter Accuracy:** As part of preparing the AMI feasibility report, City conducted an accuracy testing for the existing meters and has found that 34,002 meters (approximately 80%) did not meet current accuracy standards and must be replaced. The meters are replaced depending on the size if they are not performing to the desired accuracy level, or become defective. City repairs meters that are 3 inches and larger, if they are old (at least 20 years), then the meters are changed. It is estimated that the aging meters have resulted in non-revenue water losses estimated at a minimum of \$2.9M over life expectancy.
- 3. Meter Reading & Billing Process:** The City has a manual meter-reading process and uses three full-time meter readers. Meter readers use Radix handheld tablets to collect meter data. The City uses Enquesta for its billing system, which cannot store large volumes of meter reads or easily create billing determinants from the attained data. Meters are read on a bi-monthly cycle with half of the meters or approximately 22,250 meters being read in a one-month cycle. The City of Santa Ana has considered migration of all customers to monthly meter reading and billing, but it has been cost-prohibitive because of the significant cost of additional meter-reading resources and changes to the billing systems. The current billing cycle has a significant impact on late detection of water loss.

With implementation of AMI, City will have all of the data required to support monthly billing for 100 percent of its customers without any incremental costs to obtaining the monthly reads that will result in customer awareness of its uses and substantial water savings for the City.

Implementation of the Smart metering technology will allow the City of Santa Ana to:

- Remotely and continuously monitor and diagnose problems, pre-emptively prioritize and manage water waste using data-driven insights.
  - Provide customers with the information and tools they need to make informed choices about their behaviors and water usage patterns via multiple communication paths
- Identify defective or stopped meters from the meter read data. The accuracy of new meters will result in recording actual usage and therefore lower losses.



- Enabling increased support for billing system and customer service representative tools to deliver improved and new customer service experiences.
- Plan engineering planning activities based on accurate water audit.

In the proposed project, the City will transition the oldest meters and the largest meters (3" and greater), as these meters serve apartment complexes, commercial, and industrial areas, which have multiple customers and operational areas, and therefore, will result in a larger impact. In conjunction with the AMI system, a Meter Data Management System (MDMS) will be implemented so that raw meter data can be aggregated, preprocessed, and validated. Unlike the City's existing Equesta system, which cannot store large volumes of hourly meter reads, MDMS can analyze hourly data, provide billing determinants and real-time billing data to both the City and the customers. As a companion product to MDMS, the overall system will be connected to an interactive web portal to allow customers to view their water consumption and changes in rate structure to target any water waste.

The resulting water savings are estimated to be 371 acre-feet per year, with an associated energy savings of 6,598,432 kilowatt-hours (kWh) per year. In addition to savings in water usage and energy consumption, this project will significantly reduce City of Santa Ana's carbon footprint based on vehicle miles travelled.

This project directly aligns with the City's strategic plan to utilize new technologies to increase operational efficiencies, improve delivery of services, and enhance communication and education in the community. Because the City has completed all of its feasibility reports, implementation of this project is expected to be completed within 24 months after funding approval. The following tasks will be completed as part of this project:

### **Task 1: Design Phase**

The City is processing the contract for an independent AMI Project Manager that will be awarded on April 15, 2019.

The Project Manager will develop:

- a. A detailed implementation plan that includes design and specifications as well as proposal documents and all other pertinent engineering tasks for the meter installation project and software development.
- b. Technical support services during construction and integration phase
- c. Develop and conduct a public outreach plan

### **Task 2: Project Implementation and Construction**

- a. Advertise to receive proposal for procurement and installation of smart meters and related appurtenances
- b. Award contract at a regularly scheduled City of Santa Ana City Council meeting
- c. Review and approve submittals and shop drawings for required construction materials
- d. Equipment procurement for meter reading tower/hardware and software will follow the



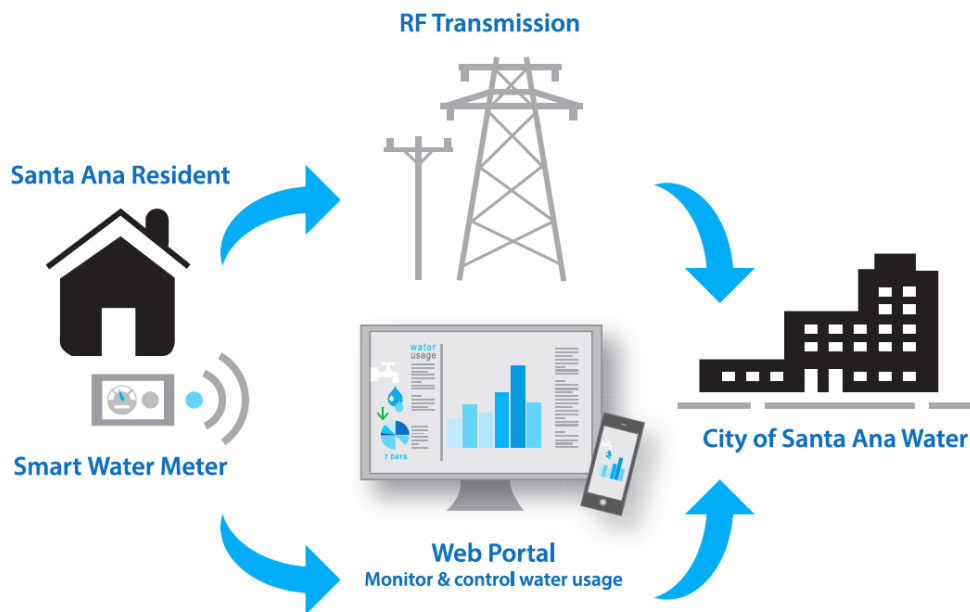
- specifications of AMI system chosen in procurement process
- e. Installation of AMI towers and replacements of 11, 250 meters
- f. Construction management by Santa Ana Public Works staff to include compliance with plans and specifications, inspection of all work performed, process of invoices and change orders, grant compliance measures, transfer of current system, testing, and oversight of all aspects of the contracts.

### Task 3: System Interface

- a. Schedule Information Technology department staff to monitor software installation
- b. Perform all the required software testing and migration of billing data to the new platform
- c. Schedule training for customer service staff to learn AMI system

See Figure 4 for a conceptual map of the AMI system.

*Figure 4: Proposed AMI System Conceptual Map*



### Task 4: Public Outreach

- a. Develop a comprehensive customer and stakeholder communications plan
- b. Conduct neighborhood meetings, customer notifications, community outreach and engagement.



## E. Evaluation Criteria

### E.1.1. Evaluation Criterion A—Quantifiable Water Savings

*Up to 30 points may be awarded for this criterion. This criterion prioritizes projects that will conserve water and improve water use efficiency by modernizing existing infrastructure. Points will be allocated based on the quantifiable water savings expected as a result of the project. Points will be allocated to give greater consideration to projects that are expected to result in more significant water savings. All applicants should be sure to address the following: Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project. Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.*

Implementation of the AMI system for 25 percent of City’s existing largest and oldest water meters is expected to conserve over 371 acre-feet per year. This is calculated by:

*Describe current losses: Please explain where the water that will be conserved is currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?*

With more than 80 percent of the existing meters operating beyond their life expectancy, the main source of current water loss is from having meters that are beyond their life expectancy. In addition, the two-month billing does not allow the customers to take the expected steps in a timely manner to avoid water loss. This translates to double the water loss as compared to any other agency with one-month billing process. Due to the urban setting of the City, the water lost is either absorbed through storm drain system or seepage into the ground.

This AMI implementation project involves updating 11,250 of the City’s largest and oldest meters, which will result in substantial water savings from large apartment complexes, commercial, and industrial properties.

The City of Santa Ana’s current water supply from groundwater production in the OC Basin is limited and MWD has considered the potential impacts recent droughts and climate change may have on the quantity of imported water available. Therefore, the City is eager to increase the reliability of its water supply through implementation of Advanced Metering Infrastructure (AMI). This water conservation project will address the potential shortfalls in the City’s water supply by directly improving water conservation and management efforts.

*Describe the support/documentation of estimated water savings: Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Note:*



projects that do not provide sufficient supporting detail/calculations may not receive credit under this section. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal. In addition, please note that the use of visual observations alone to calculate water savings, without additional documentation/data, are not sufficient to receive credit under this section. Further, the water savings must be the result of reducing or eliminating a current, ongoing loss, not the result of an expected future loss.

According to the certified water loss audit, the City of Santa Ana apparent water loss for the FY 2017-18 was 850 AF/Year. [http://wuedata.water.ca.gov/awwa\\_plans](http://wuedata.water.ca.gov/awwa_plans)

The reported water loss is directly related to the water meters in place past their life expectancy.

Although 25 percent of the meters will be replaced, the City plans to replace the largest meters. Accounting for meter sizes, it translates to large meters contributing to 38 percent of the water loss estimated to be:  $850\text{AFY} \times .38 = 323 \text{ AFY}$

Non-revenue water consists of three components: unbilled authorized consumption (e.g. hydrant flushing, firefighting, and blow-off water from well start-ups), real losses (e.g. leakage in mains and service lines, and storage tank overflows), and apparent losses (unauthorized consumption, customer metering inaccuracies and systematic data handling errors).

While replacement of the existing metering system with AMI technologies will directly reduce customer metering inaccuracies, this project will also reduce real losses through the implementation of leak detection and pressure monitoring. This amount for the FY 2017-18 is 788 AF. According to technical articles agencies are capable of saving considerable amount of water. The technical paper by Frank Tantzky (allstadtwerke in 2011) notes that "the effort and cost of localization has been reduced by 98 percent." Remaining very conservative, it is assumed that there will be another 15 percent of water savings due to pressure monitoring and advanced leak detection. Therefore, the estimated water savings is calculated as **323 AFY x 1.15 = 371 AFY**

#### **Energy Savings by Reducing City of Santa Ana's Water System Electrical Usage:**

City of Santa Ana averaged the monthly KWH used in all of its facilities and dividing it by Total System Flow Provided the average of 440.2 KWH used per AF of water. The annual energy savings for City of Santa Ana's system energy usage as a result of this project would therefore be:

**11,250 meters = 1020 AF x 440.2 kWh/AF = 163,314 kWh/year**



**Energy Savings from Reduced Vehicle Miles Driven:**

This project would create an additional energy savings through reducing fossil fuel consumption. By replacing the manually-read meters with AMI meters, City staff will no longer need to drive to the 11,250 meter locations to record water usage data. It is conservatively assumed that .2 miles is driven for each meter.

**11,250 meters x .2 miles/meter x 6 (no of times meters are read per year) = 13,500 miles/year**

Using EPA’s average of 21.5 miles/gallon and adding 10% for the stop-and-go condition, we estimate the following:

**13,500 miles per year / 21.5 miles per gallon = 628 x 1.10 = 691 gallons/year**

U.S. EPA parameters specify 1.25 therms/gallon of fuel and 29.3 kWh/therm. Using these values, there will be **approximately 25,308 kWh/year that will be saved as a result of this project.**

**Energy savings from hot water leakage**

Some water loss is due to leakage from hot water lines and faucets. DWR has developed a tool entitled *Estimates of Water Savings, Energy Savings, and GHG Emissions Reduction*, which can be found at [http://www.water.ca.gov/waterenergygrant/docs/Attachment2\\_Worksheet.xlsx](http://www.water.ca.gov/waterenergygrant/docs/Attachment2_Worksheet.xlsx). This tool calculates energy savings from electric and natural gas hot water heating systems. It has been determined that 40 percent of customer losses are indoor. Of this amount, 60 percent of the loss is hot water. Assuming that within its service area, 20 percent of hot water losses are from electric water heaters, and 80 percent are from gas water heaters. Using the DWR tool, the combined energy savings for both types of hot water heating systems was calculated to be **6,409,810 kWh/year based on 371 AFY of water savings.**

**Total Energy Savings**

As shown below in Table 3, the total energy savings as a result of this project would therefore be **6,598,432 kWh per year as a result of 371 AFY reduction in potable water use.**

*Table 3: Summary of Total Energy Savings from Project Implementation*

| Total Energy Savings  |                                    |
|-----------------------|------------------------------------|
| Source of Energy      | Energy Savings (kWH) for 1,020 AFY |
| System Usage          | 163,314                            |
| Reduced Vehicle Miles | 25,308                             |
| Hot Water             | 6,409,810                          |
| <b>Total:</b>         | <b>6,598,432</b>                   |





Please address the following questions according to the type of infrastructure improvement you are proposing for funding. See Appendix A: Benefit Quantification and Performance Measure Guidance for additional guidance on quantifying water savings.

(2) *Municipal Metering: Municipal metering projects can provide water savings when individual user meters are installed where none exist to allow for unit or tiered pricing, when existing individual user meters are replaced with advanced metering infrastructure (AMI) meters, and when new meters are installed within a distribution system to assist with leakage reduction. To receive credit for water savings for a municipal metering project, an applicant must provide a detailed description of the method used to estimate savings, including references to documented savings from similar previously implemented projects. Applicants proposing municipal metering projects should address the following:*

- a. *How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.*

See the above for estimated average annual water savings that are expected from the project, including the reasoning and calculations for this estimate. After project implementation, actual water savings will be verified by comparing historical data for water usage prior to implementation of the AMI meters system.

- b. *How have current distribution system losses and/or the potential for reductions in water use by individual users been determined?*

As indicated in the City of Santa Ana AMI Feasibility Report, current meters are operating beyond their life expectancy and over 80% of the meter readings are less than accurate. The accuracy of new meters and the change from bi-monthly billing will result in substantial water savings.

The installation of the AMI system will consist of smart meters that communicate over a radio frequency (RF) network to the software application that remotely collects the meter reads, alarms and events. The meters will provide hourly readings on a daily basis and this data will be provided to the customers on a web portal. Customers can also set alerts that automatically notify them via email or text if usage rises above certain preset limits. As noted earlier, City of Santa Ana has identified customer education and outreach as an essential part of implementing this project. The City has started the process by preparation of the AMI Fact Sheet that is already posted on the website.

The technical paper by Frank Tantzky (allbstadtwerke in 2011) notes that "the average run-time of a leak event has been reduced to one and a half days". Considering current bi-monthly billing process, means that the average Santa Ana customer may not be able





to act on their excessive water usage or leakage for about 75 days as compared to 1.5 days. Customer education and incentive to reduce their water bills will have a great impact in water conservation.

- c. *For installing individual water user meters, 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. In the absence of such studies, please explain in detail how expected water use reductions have been estimated and the basis for the estimations.*

The City of Santa Ana has been proactively studying the proposed project and maintains numerous planning documents addressing water shortages and conservation alternatives including:

- City of Santa Ana Drought Action Plan-See the following link:  
<https://www.dropbox.com/home/work/ess/projects/SA%20SRF/City%20of%20Santa%20Ana/From%20Santa%20Ana/AMI/From%20SA?preview=Drought+Action+Plan.pdf>
- AMI Feasibility Report: A Roadmap to a Smart Water Utility Report (2016)-See the following link:  
<https://www.dropbox.com/home/work/ess/projects/SA%20SRF/City%20of%20Santa%20Ana/From%20Santa%20Ana/AMI/From%20SA?preview=City+of+Santa+Ana+AMI+Feasibility+Report+Final+10192016+MD.pdf>
- City of Santa Ana Permanent Water Conservation requirements (Municipal Code section 39-106)- See the following link:  
[https://library.municode.com/ca/santa\\_ana/codes/code\\_of\\_ordinances?nodeId=PTIITHCO\\_CH39WASE\\_ARTVIWASHCOPL\\_DIV4REGOWACOPH\\_S39-106PEWACOREROAGWAWA](https://library.municode.com/ca/santa_ana/codes/code_of_ordinances?nodeId=PTIITHCO_CH39WASE_ARTVIWASHCOPL_DIV4REGOWACOPH_S39-106PEWACOREROAGWAWA)
- Annual Water Loss Audit Report (State Required)- See the following link:  
[http://wuedata.water.ca.gov/awwa\\_plans](http://wuedata.water.ca.gov/awwa_plans)
- Urban Water Management Plan (2015) – See the following link:  
[https://www.santa-ana.org/sites/default/files/Documents/urban\\_water\\_management\\_plan.pdf](https://www.santa-ana.org/sites/default/files/Documents/urban_water_management_plan.pdf)
- City of Santa Ana Water Master Plan (2017) – See the following link:  
<https://www.santa-ana.org/sites/default/files/Documents/2017WaterMasterPlan.pdf>

These planning documents recognize water conservation as the most cost-effective way to remedy current and future water resource management issues. This was proven by the impressive reduction of water usage during the recent California drought. As noted above, the City of Santa Ana is committed to saving the City's precious water resources and has a permanent water conservation policy that requires repair of leaks within 48



hours of notification. However, as demonstrated, the City and its customer do not currently have the proper tools to proactively reduce water waste and this effort is limited to visual observation or delayed identification of leaks.

AMI technologies serve as reliable management tool to help with identifying customer use patterns and performing real time audits to enhance water and energy efficiency and sustainability for the City. Recognizing this great potential, the City retained Black & Veatch to develop an AMI Feasibility Report: A Roadmap to a Smart Water Utility Report in 2016, to understand how the City can best leverage the AMI technologies to provide higher levels of customer service and water usage information to enable water conservation by customers, as well as improve the water system operations and efficiency. This Feasibility Report suggests that conversion of manual-read meters to AMI technologies will provide significant benefits to the City.

The City of Santa Ana is dedicated to supporting water reliability and water conservation. On May 19, 2015, the City passed a Water Conservation Ordinance No. NS-2877 (See Appendix D of the 2015 UWMP). The purpose of the Water Conservation Ordinance is to encourage reduced water consumption within the City through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City. It provides procedures, rules, and regulations for mandatory water conservation that gain results while minimizing the effect of a water shortage on the City's water customers.

- d. *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.). Please provide details underlying any assumptions being made in support of water savings estimates (e.g., how leakage will be reduced once identified with improved meter data).*

The City of Santa Ana will not be installing distribution main meters as part of the proposed project. This AMI implementation project involves updating 10,749 of the City's oldest meters, and all of the City's largest meters — meter sizes 3-inch and greater (501 meters) — which serve apartment complexes, commercial, and industrial properties.

- e. *What types (manufacturer and model) of devices will be installed and what quantity of each?*

The manufacturers and models of devices and materials will be selected through a competitive bid process.

- f. *How will actual water savings be verified upon completion of the project?*



To verify the amount of water savings, historical water usage data prior to implementation of the AMI system will be compared with water usage data after implementation of the AMI system for two years.

### **E.1.2. Evaluation Criterion B — Water Supply Reliability**

*Up to 18 points may be awarded under this criterion. This criterion prioritizes projects that address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflicts in the region. Note that an agreement will not be awarded for an improvement to conserve irrigation water unless the applicant agrees to the terms of Section 9504(a)(3)(B) of Public Law 111-11 (see p. 52 of the FOA for additional information).*

*Please address how the project will increase water supply reliability. Proposals that will address more significant water supply shortfalls benefitting multiple sectors and multiple water users, will be prioritized. General water supply reliability benefits (e.g., proposals that will increase resiliency to drought) will also be considered. Please provide sufficient explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:*

1. *Will the project address a specific water reliability concern? Please address the following:*
  - o *Explain and provide detail of the specific issue(s) in the area that is impacting water reliability, such as shortages due to drought, increased demand, or reduced deliveries. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)?*

Southern California has experienced several significant droughts in the last 15 years, which has resulted in drastic decrease of water supplies. The City currently relies on a combination of valuable local groundwater from the OC Basin managed by OCWD, as well as imported water from the MWD. Prior to 2018 winter, the snowpack and groundwater levels decreased due to severe dry conditions, reducing the amount of local groundwater supply and imported water available for the City.

Because of the persistent drought conditions in recent years, MWD took action to reduce water deliveries to its member agencies, including the City of Santa Ana, effective July 1, 2015, enforcing heavy surcharges if the specified allocations were exceeded. The City of Santa Ana's water deliveries were reduced by 15 percent. Following this action, on June 2, 2015, the City Council of Santa Ana declared a Phase 2 Water Supply Shortage that implemented additional regulations and restrictions on the delivery of water. By this resolution, the City Council declared that a water shortage existed throughout the area served by the City of Santa Ana Water Resources Division and ordered that water



customers must reduce their monthly total potable water consumption by 12 percent, using 2013 as the base year. Overall, the City of Santa Ana's water use decreased by 16.97 percent between June 2015 and February 2016, the nine months of the initial statewide conservation mandate. Although this is a step forward, the City hopes to further increase its water conservation efforts and water reliability through the implementation of AMI, as climate change and environmental impacts continue to influence water sources.

As shown in the City's 2015 UWMP, the City's population is projected to increase from 335,299 in 2015 to 343,766 by 2040. The City's total water demand is expected to increase from 36,656 acre-feet in 2015 to 39,716 acre-feet or over 8% by 2040.

The City of Santa Ana is one of MWD's 26 member-agencies (including 14 cities, 11 municipal water districts, and one county water authority), and implementation of AMI will increase water supply reliability and help ensure the City serves as a responsible member by reducing its dependence on the finite supply from MWD, and implementation will also help prepare for population growth and increasing water demands.

The City is dedicated to improving its water conservation efforts and this project will support water reliability during times of drought and help prepare for projected increases in water demands.

- *Describe how the project will address the water reliability concern? In your response, please address where the conserved water will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

The City is fully dependent on MWD and OCWD for its water supply and coordinates its long-term and water-shortage planning with these agencies. The City can better contribute to supporting water reliability in the region by developing robust water conservation efforts and the effectively maintaining its water production assets. The AMI system will streamline water conservation management efforts to support the reliability of the City's water supply. This project will also increase water supply reliability by allowing the City and customers within the service area to effectively manage and monitor water usage through an interactive web portal. Implementation of leak detection technologies will help preserve the City's valuable water supply by ensuring that water leakages are identified and addressed immediately, so that the City can



better maintain the reliability of its assets.

Water savings realized by implementation of the AMI system, will supplement the groundwater in the OC Basin benefitting the region and all member agencies. It will also reduce the City's need for purchase of expensive imported water from MWD.

- *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

No additional mechanisms will be necessary to allocate the conserved water for its intended use. The conserved water will be used to supplement the groundwater supply from the OC Basin and reduce the need to purchase imported water.

- *Indicate the quantity of conserved water that will be used for the intended purpose.*

The total estimated amount of conserved water, 371 acre-feet, will be used to supplement the City's finite water supply from the OC Basin, as well as offset the need to purchase costly imported water.

2. *Will the project make water available to achieve multiple benefits or to benefit multiple water users? Consider the following:*

- *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*

This AMI installation project will benefit municipal, industrial, and environmental sectors. This project will benefit the municipal sector by improving overall operational efficiency for the City's water distribution system and meter reading system, ensuring faster identification of and solutions to water leaks, reducing meter reading costs, and improving data accuracy to help staff better optimize the water distribution system, and improving billing for customers. In addition, this project involves transitioning the City's largest meters, including the industrial customers, to AMI technologies. Industrial users are one of the largest water consumers for the city and this transition will enhance overall operational efficiencies, reduce water waste and leaks, and reduce overall costs from overuse of water. Most importantly, the project will benefit the overall environment by enhancing water reliability, conserving valuable water, reducing greenhouse gas emissions, and improving water conservation management.

- *Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship*



*of the species to the water supply, and whether the species is adversely affected by a Reclamation project.*

The project involves implementing advanced metering infrastructure throughout the urban areas of the City of Santa Ana and will not directly benefit specific species. However, this project will enhance water reliability, conserve water, reduce greenhouse gas emissions, and improve water conservation management, which will benefit the surrounding environment and wildlife overall.

- *Will the project benefit a larger initiative to address water reliability?*

As it was noted earlier, City of Santa Ana responded to MWD that called on its 26-member agency for water conservation. The City of Santa Ana (City) relies on approximately 71 percent local groundwater from the Orange County Groundwater Basin (OC Basin), and 28 percent purchased water from the Metropolitan Water District (MWD) and therefore, any amount of water savings by implementation of the AMI system, will benefit the member agencies and their water users.

- *Will the project benefit Indian tribes?*

No, this project will not affect Indian tribes.

- *Will the project benefit rural or economically disadvantaged communities?*

The City of Santa Ana has an average median household income below state and federal levels. According to the U.S Census Bureau (2013-2017), the median household income is \$57,151 in 2017 dollars, with 19.5 percent of the population in poverty. The median household income in California (2013-2017) was 67,169. This AMI installation project will be applied to many of the large meters serving apartment complexes including residential customers with low-income households.

- *Describe how the project will help to achieve these multiple benefits. In your response, please address where the conserved water will go and where it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

The conserved water will be used to supplement the groundwater supply from the OC Basin and reduce the need to purchase imported water for the City of Santa Ana. Reduced draw from the OC Basin will benefit MWD and its 26-member agencies and their customers that covers the coastal and most heavily populated portions of Southern California.



3. *Does the project promote and encourage collaboration among parties in a way that helps increase the reliability of the water supply?*

The City of Santa Ana is committed to keeping its community informed and has prepared an [AMI Fact Sheet](#) to educate the public about AMI technologies. Implementation of the AMI system allows a better customer services and promotes partnership between its customer and the agency that will be very beneficial in meeting current and future water conservation goals. The fact sheet is available at <https://www.santa-ana.org/sites/default/files/Documents/AMIFactsheetFinal.pdf>

- *Is there widespread support for the project?*

The proposed project has widespread support among City of Santa Ana customers and water management agencies. Reducing leaks and increasing customer awareness of water usage provides a benefit to the entire service area in the form of reduced water rates and amore resilient water supply. As discussed previously, imported water is considered to be the least reliable supply for City of Santa Ana and also the most expensive. Therefore, the water savings achieved through this project are expected to reduce reliance on imported supplies. Reductions in imported supplies will allow the City to have a more reliable supply in the face of water-related crises such as earthquakes, flooding and drought.

- *What is the significance of the collaboration/support?*

Also, the City of Santa Ana customer service personnel will have direct and real time access to AMI usage information from the customer's meter. These personnel will be trained to utilize this data in assisting customers in identifying leaks and usage patterns to improve water conservation. Since adoption of the water conservation mandates, City of Santa Ana has observed a positive response expressed by the behavior modification. With greater level of customer education, City expects to see a quick transition by its customers to utilize the real-time data provided after AMI implementation. Customer response on the recent water conservation is indicative of their support to continue with more savings when AMI is implemented.

- *Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?*

Improving meter reading accuracies and implementing an interactive web portal will help City residents the opportunity to be more involved in daily management of their water usage and for a more robust response to water conservation. They will be notified of irregular water usage and will be able to





take necessary action to remedy the situation and improve overall conservation.

- *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*

This project will not directly prevent a water-related crisis. However, in times of drought, the water conservation benefits from this project will help alleviate the City’s reliance on valuable groundwater and imported water supplies, as well as prepare the City for future needs. In addition, implementation of the AMI system, will help educate the commercial, industrial owners and residents of the City on their water use patterns that will be very beneficial in achieving the water conservation goals of the city and the financial goals of the water customers. This will allow the City to have optimum water usage from the OC Basin resulting in reduced competition for the water supply.

- *Describe the roles of any partners in the process. Please attach any relevant supporting documents.*

Not applicable.

4. *Will the project address water supply reliability in other ways not described above?*  
No.

### **E.1.3. Evaluation Criterion C — Implementing Hydropower**

This criterion is not applicable to this project.

### **E.1.4. Evaluation Criterion D — Complementing On-Farm Irrigation Improvements**

This criterion is not applicable to this project.

### **E.1.5. Evaluation Criterion E — Department of Interior Priorities**

*Up to 10 points may be awarded based on the extent that the proposal demonstrates that the project supports the Department of the Interior priorities. Please address those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the priorities listed, and whether the connection to the priority(ies) is well supported in the proposal.*

1. *Creating a conservation stewardship legacy second only to Teddy Roosevelt*





- a. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment;

Advanced smart meter technologies have a proven track record in providing real time water-consumption data by allowing for remote meter-reading from a central location through a radio frequency transmission network. The City of Santa Ana plans to use this technology to more efficiently manage its limited water resources and streamline water conservation measures.

- b. Examine land use planning processes and land use designations that govern public use and access;
- c. Revise and streamline the environmental and regulatory review process while maintaining environmental standards.
- d. Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity;
- e. Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands;
- f. Identify and implement initiatives to expand access to DOI lands for hunting and fishing;
- g. Shift the balance towards providing greater public access to public lands over restrictions to access.

## 2. *Utilizing our natural resources*

- a. Ensure American Energy is available to meet our security and economic needs;

Energy savings achieved by implementing the AMI system, will be realized through reduced purchases of imported water, reduced process and distribution of water. In addition, there will a significant reduction in vehicle miles travelled and fuel supplies. The reduction of greenhouse gas will result in a cleaner environment and reduced energy spent dealing with its impacts.

- b. Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications;
- c. Refocus timber programs to embrace the entire 'healthy forests' lifecycle;
- d. Manage competition for grazing resources.

## 3. *Restoring trust with local communities*

- a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;
- b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.

## 4. *Striking a regulatory balance*



- a. Reduce the administrative and regulatory burden imposed on U.S. industry and the public;
  - b. Ensure that Endangered Species Act decisions are based on strong science and thorough analysis.
5. *Modernizing our infrastructure*
- a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure;

Implementation of AMI is a modernization project for City's aging water infrastructure and valuable assets that will replace the current outdated manual-read meters with the latest available technology in the industry. Leak-detection technologies and accurate meter readings will allow the City to swiftly address failures or discrepancies in the system and plan for the future needs accordingly. This project for implementation of advanced smart meter technologies and modernizes City procedures directly supports the White House initiative to modernize infrastructure in USA.

- b. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;
- c. Prioritize DOI infrastructure needs to highlight: 1) Construction of infrastructure; 2) Cyclical maintenance; 3) Deferred maintenance.

The City of Santa Ana proposed AMI installation project is a direct example of construction of infrastructure that will replace manual-read meters that are past their life expectancy with advanced smart meters and therefore reducing the cyclical maintenance requirements. Installing an advanced automated metering system will provide real-time information for correcting water leaks and system discrepancies rather than having a deferred maintenance system for meter replacement.

## **E.1.6. Evaluation Criterion F — Implementation and Results**

### *E.1.6.1. Subcriterion F.1 — Project Planning*

*Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Please self-certify or provide copies of these plans where appropriate to verify that such a plan is in place. Provide the following information regarding project planning:*

*Identify any district-wide, or system-wide, planning that provide support for the proposed project. This could include a Water Conservation Plan, SOR, Drought Contingency Plan or*



*other planning efforts done to determine the priority of this project in relation to other potential projects.*

As mentioned above, the City of Santa Ana has developed numerous planning documents addressing water shortages and conservation alternatives including:

- City of Santa Ana Permanent Water Conservation requirements (Municipal Code section 39-106) —  
[https://library.municode.com/ca/santa\\_ana/codes/code\\_of\\_ordinances?nodeId=PTIITHCO\\_CH39WASE\\_ARTVIWASHCOPL\\_DIV4REGOWACOPH\\_S39-106PEWACOREROAGWAWA](https://library.municode.com/ca/santa_ana/codes/code_of_ordinances?nodeId=PTIITHCO_CH39WASE_ARTVIWASHCOPL_DIV4REGOWACOPH_S39-106PEWACOREROAGWAWA)
- Water Conservation Ordinance No. NS-2877 – (Appendix D of the 2015 UWMP)
- City of Santa Ana Strategic Plan – Community Facilities and Infrastructure:  
<file:///D:/Dropbox/Dropbox/Work/ESS/Projects/SA%20SRF/City%20of%20Santa%20Ana/From%20Santa%20Ana/Strategy%20Plan%20-%20CommunityFacilitiesandInfrastructure.pdf>
- City of Santa Ana Drought Action Plan
- Urban Water Management Plan (2015)
- City of Santa Ana Water Master Plan (2017) <https://www.santa-ana.org/sites/default/files/Documents/2017WaterMasterPlan.pdf>
- AMI Feasibility Report: A Roadmap to a Smart Water Utility Report (2016)
- City of Santa Ana Capital Improvement Program 2018-2019 – See the following link: <https://www.santa-ana.org/sites/default/files/FY18-19-CIP.pdf>

*Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect*

The 2017 Water Master Plan addresses the need for the current replacement of the aging water meters and leak detection technologies by implementation of AMI system. The City of Santa Ana Drought Action Plan recognizes the importance of implementation the AMI system by requiring completion of the AMI feasibility report as one of its goals. Since completion of the report, the City of Santa Ana has been striving to identify the necessary funding to implement the project.

In addition, The City's Five-Year Strategic Plan sets the following as primary objectives for its goal to maintain its infrastructure:

- Establish and maintain a Community Investment Plan for all City assets.
- Address deferred maintenance on City buildings and equipment.

the City's Strategic Plan clearly identifies investing resources and technology to extend the service life of existing infrastructure to protect the City's investment and support a



high quality of life standard as the strategy to reach its goals. Implementation of the AMI project will achieve these goals by increasing metering accuracy, eliminating the need for manual meter reading, as well as implementing an interactive web portal which provides City attained information to customers, facilitates communication and water conservation actions between the City and customers, and creates a platform for robust community interaction for water conservation goals of the City.

#### *E.1.6.2. Subcriterion F.2 — Performance Measures*

*Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure, see Appendix A: Benefit Quantification and Performance Measure Guidance.*

*All Water and Energy Efficiency Grant applicants are required to propose a “performance measure” (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with Water and Energy Efficiency Grant recipients describing the performance measure and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of Water and Energy Efficiency Grants.*

*Note: program funding may be used to install necessary equipment to monitor progress. However, program funding may not be used to measure performance after project construction is complete (these costs are considered normal operation and maintenance costs and are the responsibility of the applicant).*

The City of Santa Ana proposes to use the following performance measures to quantify the benefits of the AMI system upon completion of the project:

#### Performance Measure No. 1: Improving Water Management through the implementation of monitoring tools

- The historical average amount of water utilized by a household or commercial entity as per meter data on file with the District
- Before and after water consumption data will be evaluated using at least one-year of post project data.
- Before and after water supply (production) data will be evaluated using at least one-year of post project data
- Project total savings will be compared with historical water production data to identify trends in water use, evaluate future water needs, and estimate City of



Santa Ana capacity

**Performance Measure No. 2: Increasing Energy Efficiency in Water Management**

- The City of Santa Ana will be also be calculating the quantity of energy savings resulting from the water use data by comparing pre-and-post project energy billings for water production and distribution, taking into account changes in pricing structure that would affect the anticipated cost savings.
- Anticipated cost savings are based on reduction of energy usage for water production and distribution due to a lesser demand for water.

*E.1.6.3. Subcriterion F.3 – Readiness to Proceed*

*Applicants that describe a detailed plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.*

*Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

**Table 4: Outline of Estimated AMI Implementation Plan**

| Estimated AMI Implementation Plan                              |  |   |         |
|--|--|---|---------|
| Task   | Phase  | Start   | Finish  |
| <b>Task 1: Design Phase</b>                                    | Contract with an AMI Project Manager   | Completed   |         |
|  | Process CEQA   | Completed   |         |
|  | Preparation of detailed implementation plan                                  | 5/2019  | 8/2019  |
| <b>Task 2: Project Implementation &amp; Construction Phase</b> | Advertise / Review of Proposals / award of contract                          | Immediately upon Notice of Award estimated Aug 2019 | Jan-20  |
|  | Implementation Period  | Jan-20  | July-21 |
| <b>Task 3: System Interface</b>                                | System testing and billing interface   | Jan-22  | July-21 |
| <b>Public Outreach</b>   | Conduct neighborhood meetings, consumer notifications / community engagement | Jan-22  | July-21 |

*Describe any permits that will be required, along with the process for obtaining such permits.*



There are no permit requirements for this project.

*Identify and describe any engineering or design work performed specifically in support of the proposed project.*

All engineering and design work to start construction upon notice of award of grant funding has been completed. With completion of the AMI feasibility report, the City of Santa Ana has been progressing to prepare for implementation of the project. City plans to use a consultant to manage this important project. Requests for proposals were issued and the selection committee has completed its review of proposals. City of Santa Ana will be awarding the contract in it April 16, 2019 Council meeting.

*Describe any new policies or administrative actions required to implement the project.*

There are no new policies or administrative actions needed. As a regular process, the award of the contracts need to be approved by the City Council that have been stipulated in the schedule.

*Describe how the environmental compliance estimate was developed. Has the compliance cost been discussed with the local Reclamation office?*

The CEQA process was completed by City staff. The compliance cost has not been discussed with Reclamation.

**E.1.7. Evaluation Criterion G — Nexus to Reclamation Project Activities**

*Up to 4 points may be awarded if the proposed project is in a basin with connections to Reclamation project activities. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.*

- *Is the proposed project connected to Reclamation project activities? If so, how? Please consider the following:*

The City is not connected to Reclamation project activities.

- *Does the applicant receive Reclamation project water?*  
Not applicable.
- *Is the project on Reclamation project lands or involving Reclamation facilities?*  
Not applicable.
- *Is the project in the same basin as a Reclamation project or activity?*  
Not applicable.
- *Will the proposed work contribute water to a basin where a Reclamation project is located?*  
Not applicable.



- Will the project benefit any tribe(s)?

No, this project will not have an impact on any tribes.

**E.1.8. Evaluation Criterion H — Additional Non-Federal Funding**

Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided using the following calculation:

*Table 5: Percentage of Non-Federal Funding for Project*

| Percentage of Non-Federal Funding |                    |                             |
|-----------------------------------|--------------------|-----------------------------|
| Non-Federal Funding Amount        | Total Project Cost | Non-Federal Funding Percent |
| \$3,433,388                       | \$3,733,388        | 92%                         |



## SECTION 2: PROJECT BUDGET

### Standard Form 424 Budget Information C

This document is included in the separate submission with all of the City of Santa Ana’s completed Standard Form 424 copies.

#### A. Funding Plan and Letters of Commitment

The City of Santa Ana does not have any third-party funding sources or expected Federal funding sources outside of this application for assistance. Currently, the City does not have any pending funding requests for this project outside of this application and will provide the funding from the Water Utility Capital Project Funds that will be allocated as part of the Capital Improvement Program for the proposed project.

#### B. Budget Proposal

*Table 6: Total Project Costs by Source*

| SOURCE  | AMOUNT             |
|---|--------------------|
| Costs to be reimbursed with the requested Federal funding | <b>\$300,000.</b>  |
| Costs to be paid by the applicant                         | <b>\$3,433,388</b> |
| Value of third party contributions                        | <b>\$0</b>         |
| <b>Total Project Cost</b>                                 | <b>\$3,733,388</b> |

*Table 7: Summary of Funding Sources*

| Funding Sources                                | Amount             |
|--|--------------------|
| City of Santa Ana - Cash Contributions         | \$3,353,825        |
| City of Santa Ana value of in-house resources* | \$79,563           |
| Other Federal Entities                         | \$0                |
| Bureau of Reclamation                          | \$300,000          |
| <b>Total:</b>                                  | <b>\$3,733,388</b> |





**Table 8: Budget Proposal**

| BUDGET ITEM DESCRIPTION   | COMPUTATION   |          | Quantity Type | TOTAL COST          |
|---|---------------|----------|---------------|---------------------|
|   | \$/Unit       | Quantity |               |                     |
| <b>Salaries and Wages</b>   |               |          |               | <b>\$51,158</b>     |
| Water Resources Director  | \$84.09/Hour  | 72       | Hour          | \$6,054             |
| Project Manager   | \$69.47/Hour  | 208      | Hour          | \$14,450            |
| Water Service Supervisor  | \$44.34/Hour  | 468      | Hour          | \$20,330            |
| Information Services & Network Manager                            | \$76.19/Hour  | 96       | Hour          | \$7,314             |
| Customer Service Representative                                   | \$31.35 /Hour | 96       | Hour          | \$3010              |
| <b>Fringe Benefits</b>  |               |          |               | <b>\$28,405</b>     |
| Water Resources Director  | \$31.89 /Hour | 72       | Hour          | \$2,296             |
| Project Manager: Senior Civil Engineer                            | \$48.55/Hour  | 208      | Hour          | \$10,098            |
| Water Service Supervisor  | \$23.77/Hour  | 468      | Hour          | \$11,124            |
| Information Services & Network Manager                            | \$39.16/Hour  | 96       | Hour          | \$3,759             |
| Customer Service Representative                                   | \$11.74/Hour  | 96       | Hour          | \$1,127             |
| <b>Equipment</b>  |               |          |               | <b>\$2,114,437</b>  |
| Meters & BTU Units  | \$187.95/Each | 11,250   |               | \$2,114,437         |
| <b>Supplies and Materials</b>                                     |               |          |               |                     |
| Not Applicable  |               |          |               |                     |
| <b>Contractual/Construction</b>                                   |               |          |               | <b>\$1,183,388.</b> |
| Installation of AMI system for 11,250 meters                      | \$82.35/meter | 11,250   |               | \$926,387           |
| Network hardware & Installation                                   | \$55,000/EA   | 1        | Each          | \$55,000            |
| Software & system integration                                     | \$177,000     | 1        | Each          | \$177,000.          |
| Environmental & regulatory compliance consultant                  | \$250/Hour    | 100      | Hour          | \$ 25,000.          |
| <b>Third-Party Contributions</b>                                  |               |          |               |                     |
| None  |               |          |               | \$0                 |
| <b>Other</b>  |               |          |               | <b>\$356,000</b>    |
| Develop Implementation Plan, bid documents & support installation |               |          | Hour          | \$356,000           |
| <b>Total Direct Costs</b>   |               |          |               | <b>\$3,733,388</b>  |
| <b>Indirect Costs</b>   |               |          |               |                     |
|   |               |          |               |                     |
| <b>Total Estimated Project Costs</b>                              |               |          |               | <b>\$3,733,388</b>  |



## **C. Budget Narrative**

### **Salaries and Wages:**

The Program Manager for this project will be Nabil Saba, PE and the direct City Project Manager will be Rudy Rosas, PE, throughout design and construction. They will be assisted with support from Information System and customer service representative for system integration. Key personnel are listed in Table 8. The salaries for these employees are not anticipated to be escalated within the contract implementation period.

### **Fringe Benefits:**

Fringe Benefits are included in Table 8 for key staff involved in the proposed project.

The salary rates for all positions is available below:

[http://www.ci.santa-ana.ca.us/personnel/documents/salary\\_schedule.pdf](http://www.ci.santa-ana.ca.us/personnel/documents/salary_schedule.pdf)

### **Travel:**

Travel is not included in this proposal

### **Equipment:**

Cost estimate from Feasibility Report conducted by Black & Veach was used to determine the costs of equipment for this project.

### **Materials and Supplies:**

Material and supply for this project were included as part of the equipment cost and part of the contractor's work and has been estimated as part of the installation cost.

### **Contractual/Construction:**

City of Santa Ana is awarding the contract to retain an independent Project Management Consultant to run the AMI program on April 15, 2019. The Project Management Consultant is responsible to prepare the bid documents for advertising the opportunity. The most qualified proposer will be awarded the contract to install the system. The cost for the equipment and installation costs were identified in the AMI Feasibility Report: A Roadmap to a Smart Water Utility Report (2016) prepared by Black & Veatch.

### **Third-Party In-Kind Contributions:**

There are no third-party contributions towards this project.



**Environmental and Regulatory Compliance Costs:**

The project is categorically exempt from the provisions of CEQA. However, \$25,000 has been allocated for environmental and cultural report studies if that would be necessary under Federal regulations.

**Other Expenses:**

As described above, the City of Santa Ana has retained a project manager to oversee the AMI project development and implementation.

**Indirect Costs:**

These costs are included in Table 8, the Budget Proposal summary.

**Total Costs:**

The total cost of the project is included in Table 8, the Budget Proposal summary.



## SECTION 3: ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

*To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should consider the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include the answers to:*

The internal evaluation of the project has determined that the project falls under Categorical Exemption for CEQA as identified by the State Resources Agency. (CEQA Guidelines 14 CCR Section 15300-15331). The Notice of Exemption was filed on July 31, 2018.

The major part of the project involves replacement of existing meters and does not require any earth disturbance for this part of the project. The location of the towers has been identified to be within the compounds of the Public Works Utility Yard and/or Civic Center Plaza. Both locations have been fully disturbed with construction of multiple buildings, full site pavement and various facilities.

Because there is “no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment,” the project will have a Categorical Exemption.

*Will the proposed 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.*

Two locations have been identified for the antenna locations:

- City Public Works Maintenance Facility: 220 S. Daisy Street, Santa Ana,
- City Hall Campus located at 20 Civic Center Plaza, Santa Ana, CA.

Repeat Network Collectors will be installed on existing light poles as needed for data transmission.

Both locations are developed sites that are fully paved. In addition, both sites have gone through full environmental process examining the cultural resources and biological impacts. As it is demonstrated in the pictures below, both sites include several elements that required



displacement of soil that were considered in their environmental documents at the time of development.

As shown in the pictures below, the Public Works Maintenance Facility includes a pump station for both regular gas and GNC that contain many underground tanks. In addition, the facility includes several large and/or multi-story building requiring deep foundations that have resulted in disturbed soil.

The City Hall campus houses the Federal Building, State of California offices along with the City of Santa Ana city hall building and parking structure. All of these buildings are multi-stories with deep foundations requiring extensive soil disturbance. Also, the whole site is fully paved. The environmental process for each of these structures considered impacts to cultural resources and biological impacts.

Therefore, the location of the antenna structures on these two sites will not have any adverse impacts on the cultural or biological resources.

**Tower Location 1: Public Works Maintenance Facility**



Administration Building



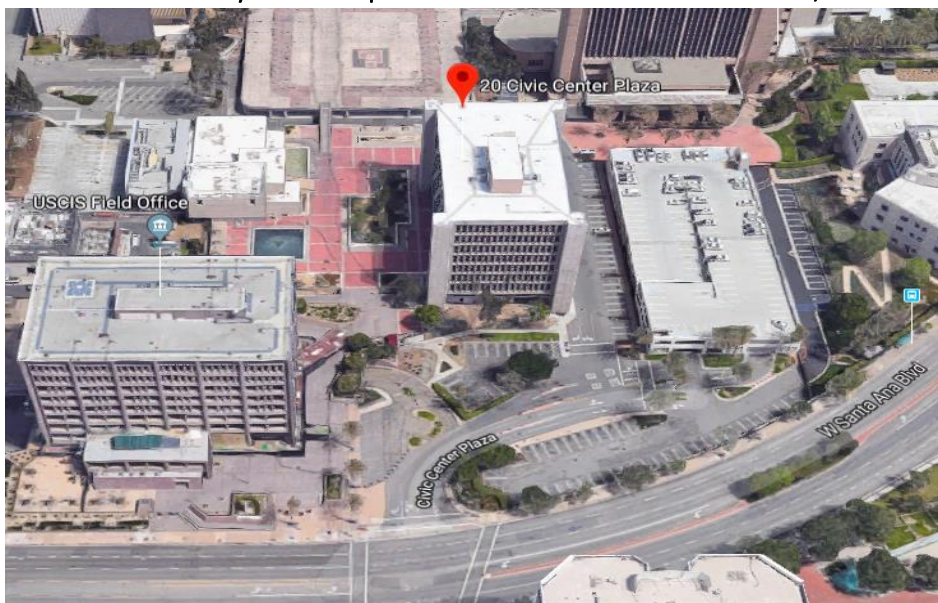


City of Santa Ana Automated Metering Infrastructure (AMI) Installation Project  
WaterSMART 2019 Water and Energy Efficiency Grants



City Corporate Yard

Antenna Location 2: City Hall Campus located at 20 Civic Center Plaza, Santa Ana, CA.





*City of Santa Ana Automated Metering Infrastructure (AMI) Installation Project  
WaterSMART 2019 Water and Energy Efficiency Grants*

- *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 no known species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area.

- *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 proposed project may have.*

Replacement of the meters and Installation of the towers have been identified to be within existing private and City properties and will not affect any of the creeks within the city boundary.

- *When was the water delivery system constructed?*

The City was, for many years, a ranching community with some farming. To serve this growing agricultural and domestic community, a municipal water system was formed in 1886.

- *Will the proposed 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.*

No; the proposed project will not result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, canals, or flumes).

- *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; there are no buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places within the proposed project area.

- *Are there any known archeological sites in the proposed project area?*

No; there are no known archeological sites in the proposed project area.



*City of Santa Ana Automated Metering Infrastructure (AMI) Installation Project  
WaterSMART 2019 Water and Energy Efficiency Grants*

- *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*
- *Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

No; the proposed project will NOT have a disproportionately high and adverse effect on low income or minority populations. In fact, the proposed project will have a **POSITIVE** effect on the local (and within the OC Basin) population, including low income and minority populations, of which Santa Ana has historically had one of the lowest per capita incomes in all of Orange County. The local population (of which more than 78 percent was of Hispanic or Latino race in 2010) will benefit from the energy efficiency and water savings that AMI implementation will bring. In addition, the drought-stricken basin-wide population will benefit from the increased availability of water supply.

- *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

No; the proposed project will NOT contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

## **SECTION 4: REQUIRED PERMITS OR APPROVALS**

No permits or approvals other than the contract approvals that have been noted in the schedule section are anticipated to be required in order to implement the project.

## **SECTION 5: LETTERS OF SUPPORT**

Per Reclamation's application guidelines in Section D.2.2.7. Letters of Support, all statements of support from interested stakeholders are included in Appendix 3.

## **SECTION 6: OFFICIAL RESOLUTION**

The draft resolution included below has been scheduled for approval by the City of Santa Ana Council on April 16, 2019.





RESOLUTION NO. 2019-XXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA ANA AUTHORIZING AN APPLICATION FOR GRANT FUNDING BY THE BUREAU OF RECLAMATION'S WATERSMART WATER AND ENERGY EFFICIENCY GRANT PROGRAM FOR THE AUTOMATED METER INFRASTRUCTURE PROJECT

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SANTA ANA AS FOLLOWS:

**Section 1.** The City Council of the City of Santa Ana hereby finds, determines and declares as follows:

A. The City of Santa Ana provides potable water for all of the City's businesses and residents. The City charges for water used by these customers using traditional mechanical meters that must be read manually by the City and have no additional capabilities.

B. The City desires to implement an Automated Meter Infrastructure (AMI) Project. The proposed future AMI Project involves, among other things, the replacement of existing water meters with new smart meters that communicate via radio or similar technology and enable the City to implement technological enhancements such as automated meter reads, usage notifications and interactive customer portals.

C. By upgrading to an AMI system, customers can be supplied with on-demand, real time water consumption data enabling them to make more informed decisions about their water use. Case studies have shown that communities that upgrade to AMI systems can achieve water consumption savings of up to 15 percent.

D. In 2016, the City completed an AMI feasibility study to evaluate the applicability and costs associated with an AMI project. The cost of fully deploying such a project for the City is approximately \$14,000,000.

E. The United States Department of the Interior offers financial assistance in the form of grant funding through its Bureau of Reclamation's WaterSMART (Sustain and Manage America's Resources for Tomorrow) Water and Energy Efficiency Grant Program for this type of project. The program provides up to a maximum of \$1,500,000 in grant funding, but not to exceed 50% of the total project cost.

F. The City desires to fund part of the cost of the AMI Project with grant funding from the WaterSMART Water and Energy Efficiency Program.

**Section 2.** The City Council of the City of Santa Ana hereby authorizes and directs the Executive Director of Public Works, or his or her designee, to sign and submit, for and on behalf of the City of Santa Ana, a grant application from the Bureau



of Reclamation’s WaterSMART Water and Energy Efficiency Program for the AMI Project up to the amount of \$1,500,000.

**Section 3.** The Executive Director of Public Works, or his or her designee, is designated to provide the assurances, certifications, and commitments required for the grant application, including executing a financial assistance or similar agreement with the Bureau of Reclamation within established deadlines and any amendments or changes thereto.

**Section 4.** The Executive Director of Public Works, or his or her designee, is designated to represent the City of Santa Ana in carrying out the City’s responsibilities under the grant agreement, including certifying disbursement requests on behalf of the City and compliance with applicable state and federal laws.

**Section 5.** If a grant award is made by the Bureau of Reclamation, the City of Santa Ana commits to providing up to \$1,500,000 in matching funds for the AMI Project plus any remaining balance.

**Section 6.** This Resolution shall take effect immediately upon its adoption by the City Council, and the Clerk of the Council shall attest to and certify the vote adopting this Resolution.

ADOPTED this \_\_\_\_ day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
Miguel A. Pulido  
Mayor

APPROVED AS TO FORM:  
Sonia R. Carvalho, City Attorney

By: \_\_\_\_\_  
John M. Funk  
Assistant City Attorney

AYES: Councilmembers \_\_\_\_\_

NOES: Councilmembers \_\_\_\_\_

ABSTAIN: Councilmembers \_\_\_\_\_



NOT PRESENT: Councilmembers \_\_\_\_\_

**CERTIFICATE OF ATTESTATION AND ORIGINALITY**

I, Maria D. Huizar, Clerk of the Council, do hereby certify the attached Resolution No. 2019 - \_\_\_\_\_ to be the original resolution adopted by the City Council of the City of Santa Ana on \_\_\_\_\_, 2019.

Date: \_\_\_\_\_

\_\_\_\_\_  
Clerk of the Council  
City of Santa Ana

**APPENDICES:**

Appendix 1: Proof of SAM Registration

Appendix 2: CEQA Notice of Exemption

Appendix 3: Letters of Support



## Appendix 1: PROOF OF SAM REGISTRATION

**SANTA ANA, CITY OF**  
DUNS: 083153247 CAGE Code: 4H8L9  
Status: Active  
Expiration Date: 08/16/2019  
Purpose of Registration: All Awards

20 CIVIC CENTER PLZ FL 8  
SANTA ANA, CA, 92701-4058,  
UNITED STATES

### Entity Overview

#### Entity Registration Summary

DUNS: 083153247  
Name: SANTA ANA, CITY OF  
Business Type: US Local Government  
Last Updated By: Daniel Ortiz  
Registration Status: Active  
Activation Date: 08/16/2018  
Expiration Date: 08/16/2019

#### Exclusion Summary

Active Exclusion Records? No



## Appendix 2: CEQA Notice of Exemption

**FILED**  
JUL 31 2018  
ORANGE COUNTY CLERK-RECORDER DEPARTMENT  
BY: NA DEPUTY

Recorded in Official Records, Orange County  
Hugh Nguyen, Clerk-Recorder  
  
NO FEE  
201885000839 3:25 pm 07/31/18  
323 OR02 Z01  
0.00 50.00 0.00 0.00 0.00 0.00 0.00 0.00

MAYOR  
Miguel A. Pulido  
MAYOR PRO TEM  
Michele Martinez  
COUNCIL MEMBERS  
P. David Benavides  
Vicente Sarmiento  
Jose Solorio  
Sal Tinajero  
Juan Villegas



CITY MANAGER  
Raul Godinez II  
CITY ATTORNEY  
Sonia R. Carvalho  
CLERK OF THE COUNCIL  
Maria D. Huizar

30-2018-0811

### CITY OF SANTA ANA

PLANNING & BUILDING AGENCY  
20 Civic Center Plaza (M-20)  
P.O. BOX 1988 • Santa Ana, California 92702  
(714) 867-2700 • Fax (714) 973-1461  
www.santa-ana.org

### NOTICE OF EXEMPTION

From the Requirements of the California Environmental Quality Act (CEQA)  
Fee Exemption per California Government Code Section 6103

To: COUNTY CLERK  
County of Orange  
P.O. Box 238  
Santa Ana, CA 92702

From: City of Santa Ana  
Planning & Building Agency  
20 Civic Center Plaza M-20  
Santa Ana, CA 92702

**Project Title:** Advanced Meter Infrastructure (AMI)  
**Project Number(s):** PWA-2018-1098-CITY  
**Project Location:** 1 CityWide (Partial)  
**City:** Santa Ana

**Date of Approval:** 08/01/2018

**County:** Orange

**ER Number:** ER-2018-88

**Project Description:** This project includes replacement of existing water meters and installation of new smart water meters and related appurtenances for water meter services.

**Applicant Name:** Rodolfo Rosas, City of Santa Ana  
**Applicant Address:** 20 Civic Center Plaza  
SANTA ANA, CA 92702

**Name of Public Agency Approving Project:** City Council  
**Name of Person or Agency Carrying Out Project:** Rosas, Rodolfo

- Exempt Status:**
- Ministerial (Sec. 15268)
  - Declared Emergency (Sec. 15269 (a))
  - Emergency Project (Sec. 15269 (b through e))
  - General Rule (Sec. 15061(b)(3)/(5))
  - Statutory Exemption:
  - Categorical Exemption: 15301(b)

**Reason(s) Why Project is Exempt From CEQA:**  
15301(b) consists of repair/maintenance of existing public facilities.

**POSTED**

JUL 31 2018

ORANGE COUNTY CLERK-RECORDER DEPARTMENT  
BY: NA DEPUTY

**City Contact:** Rudy Rosas

**Telephone:** (714) 647-3379

**Signature:**  **Title:** Assistant Engineer II **Date:** 7/31/18

SANTA ANA CITY COUNCIL

|  |  |   |  |  |  |  |
|--|--|---|--|--|--|--|
| Miguel A. Pulido<br>Mayor<br>mpulido@santa-ana.org | Michele Martinez<br>Mayor Pro Tem, Ward 2<br>mmartinez@santa-ana.org | Vicente Sarmiento<br>Ward 1<br>vsarmiento@santa-ana.org | Jose Solorio<br>Ward 3<br>jsolorio@santa-ana.org | P. David Benavides<br>Ward 4<br>pbenavides@santa-ana.org | Juan Villegas<br>Ward 5<br>jvillegas@santa-ana.org | Sal Tinajero<br>Ward 6<br>sttinajero@santa-ana.org |
|--|--|---|--|--|--|--|



City of Santa Ana Automated Metering Infrastructure (AMI) Installation Project  
WaterSMART 2019 Water and Energy Efficiency Grants



State of California - Department of Fish and Wildlife  
**2018 ENVIRONMENTAL FILING FEE CASH RECEIPT**  
DFW 753.5a (Rev. 01/01/18) Previously DFG 753.5a

[Print](#) [StartOver](#) [Finalize&Email](#)

RECEIPT NUMBER:  
30-2018 0811  
STATE CLEARINGHOUSE NUMBER (if applicable)  
N/A

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

|  |                   |  |
|--|-------------------|--|
| LEAD AGENCY<br><b>CITY OF SANTA ANA</b>        | LEAD AGENCY EMAIL | DATE<br><b>07/31/2018</b>              |
| COUNTY/STATE AGENCY OF FILING<br><b>Orange</b> |                   | DOCUMENT NUMBER<br><b>201885000839</b> |

PROJECT TITLE  
**ADVANCED METER INFRASTRUCTURE (AMI)**

|   |                         |                                       |
|---|-------------------------|---------------------------------------|
| PROJECT APPLICANT NAME<br><b>RODOLFO ROSAS, CITY OF SANTA ANA</b> | PROJECT APPLICANT EMAIL | PHONE NUMBER<br><b>(714) 647-3379</b> |
|---|-------------------------|---------------------------------------|

|   |                          |                    |                          |
|---|--------------------------|--------------------|--------------------------|
| PROJECT APPLICANT ADDRESS<br><b>20 CIVIC CENTER PLAZA</b> | CITY<br><b>SANTA ANA</b> | STATE<br><b>CA</b> | ZIP CODE<br><b>92702</b> |
|---|--------------------------|--------------------|--------------------------|

PROJECT APPLICANT (Check appropriate box)

Local Public Agency     School District     Other Special District     State Agency     Private Entity

CHECK APPLICABLE FEES:

- Environmental Impact Report (EIR) \$3,168.00 \$ 0.00
- Mitigated/Negative Declaration (MND)(ND) \$2,280.75 \$ 0.00
- Certified Regulatory Program document (CRP) \$1,077.00 \$ 0.00

- Exempt from fee
  - Notice of Exemption (attach)
  - CDFW No Effect Determination (attach)
- Fee previously paid (attach previously issued cash receipt copy)

- Water Right Application or Petition Fee (State Water Resources Control Board only) \$850.00 \$ 0.00
- County documentary handling fee \$ 0.00
- Other \$ 0.00

PAYMENT METHOD:

Cash     Credit     Check     Other

**TOTAL RECEIVED** \$ 0.00

|  |   |
|--|---|
| SIGNATURE<br><b>X / Nadia AlObaidi</b> | AGENCY OF FILING PRINTED NAME AND TITLE<br><b>NADIA AL OBAIDI, DEPUTY CLERK</b> |
|--|---|



City of Santa Ana Automated Metering Infrastructure (AMI) Installation Project  
 WaterSMART 2019 Water and Energy Efficiency Grants

Orange County  
 Clerk-Recorder's Office  
 Hugh Nguyen

630N Broadway Bldg, 12 Suite  
 101  
 92701

County

Finalization: 20180000251056  
 7/31/18 3:25 pm  
 323 OR02

| Item | Title                  | Count  |
|------|------------------------|--------|
| 1    | EO1                    | 1      |
|      | EO1 Administrative Fee |        |
|      | Document ID            | Amount |
|      | DOC# 201805000835      | 50.00  |
|      | Time Recorded 3:25 pm  |        |

Total 0.00

| Payment Type | Amount |
|--------------|--------|
| NO FEE       | 50.00  |
| Amount Due   | 0.00   |

THANK YOU  
 PLEASE RETAIN THIS RECEIPT  
 FOR YOUR RECORDS

[www.ocrecorder.com](http://www.ocrecorder.com)







## Appendix 3: Letters of Support

**DELEGATES**

DEWIS R. BLODEAU, P.E.  
JORDAN BRANDMUN  
CATHY GREEN  
DIANA L. NGUYEN, ESQ.  
KELLY E. ROWE, C.E.D., C.H.  
VICENTE SARMIENTO, ESQ.  
STEPHEN R. SHELDON  
TRITA  
ROGER C. YOH, P.E.  
ANTHONY ZAHRA



**ORANGE COUNTY WATER DISTRICT**  
ORANGE COUNTY'S GROUNDWATER AUTHORITY

**OFFICERS**

President  
VICENTE SARMIENTO, ESQ.  
First Vice President  
CATHY GREEN  
Second Vice President  
STEPHEN R. SHELDON  
General Manager  
MICHAEL R. MARKUS, P.E., D.WRE

Mr. Darren Olson  
Bureau of Reclamation  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

**RE: Request for Support for the City of Santa Ana Application to WaterSMART Water and Energy Efficiency Grants for FY 2019**

Dear Mr. Olson:

This letter is to express our support for the City of Santa Ana's application to WaterSMART Water and Energy Efficiency Grants for FY 2019 to implement the Automated Metering Infrastructure project.

The City of Santa Ana is the heart of sunny Orange County, where the dense population of over 330,000 and arid southern California environments makes conservation of water resources a constant battle. The City of Santa Ana is proposing a water and energy efficiency project that will help the City of Santa Ana with its ongoing conservation efforts and prepare to respond to the extreme drought conditions in California. This project is aligned with the City's strategic plan to make greater use of technology to increase operational efficiencies.

This project will install and implement an Advanced Metering Infrastructure (AMI) System designed to provide real time operational modeling information to track water customer demand and use. The AMI system and web portal technology will provide significant water savings, adding to additional water supply availability. This will improve current water management systems through the City of Santa Ana. Currently, the City of Santa tracks supply conditions, but insufficient information is known about customer daily use. This information is key in evaluating user restrictions, water delivery needs, and how best to meet drought compliance standards set by the state of California.

This application is seeking funding to upgrade its metering infrastructure and billing systems that will allow Santa Ana's residents to effectively monitor their water consumption using real-time data. City of Santa Ana has completed all the preliminary work and is prepared to implement this project immediately after getting the notice of award.

I respectfully ask for your kind consideration of this application for funding.

Thank you

  
Michael R. Markus, P.E., D.WRE, BCEE, F ASCE  
General Manager



City of Santa Ana Automated Metering Infrastructure (AMI) Installation Project  
WaterSMART 2019 Water and Energy Efficiency Grants



Street Address:  
18700 Ward Street  
Fountain Valley, California 92708

Mailing Address:  
P.O. Box 20895  
Fountain Valley, CA 92728-0895

(714) 963-3058  
Fax: (714) 964-9389  
[www.mwdoc.com](http://www.mwdoc.com)

Brett R. Barbre  
President

Joan C. Finnegan  
Vice President

Larry D. Dick  
Director

Wayne S. Osborne  
Director

Megan Yoo Schneider, P.E.  
Director

Sat Tamaribuchi  
Director

Jeffery M. Thomas  
Director

Robert J. Hunter  
General Manager

MEMBER AGENCIES

- City of Brea
- City of Buena Park
- East Orange County Water District
- El Toro Water District
- Emerald Bay Service District
- City of Fountain Valley
- City of Garden Grove
- Golden State Water Co.
- City of Huntington Beach
- Irvine Ranch Water District
- Laguna Beach County Water District
- City of La Habra
- City of La Palma
- Mesa Water District
- Moulton Niguel Water District
- City of Newport Beach
- City of Orange
- Orange County Water District
- City of San Clemente
- City of San Juan Capistrano
- Santa Margarita Water District
- City of Seal Beach
- Serrano Water District
- South Coast Water District
- Trabuco Canyon Water District
- City of Tustin
- City of Westminster
- Yorba Linda Water District

March 14, 2019

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Mr. Darren Olson  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

RE: Request for Support for the City of Santa Ana Application to WaterSMART Water and Energy Efficiency Grants for FY 2019

Dear Mr. Olson,

This letter is to express our strong support for the City of Santa Ana's application to WaterSMART Water and Energy Efficiency Grants for FY 2019 to implement the Automated Metering Infrastructure project.

The City of Santa Ana is the heart of sunny Orange County, where the dense population of over 330,000 and arid southern California environments makes conservation of water resources a constant battle. The City of Santa Ana is proposing a water and energy efficiency project. This project will help the City of Santa Ana with its ongoing conservation efforts and prepare to respond to the extreme drought conditions in California. This project is aligned with the City's strategic plan to make greater use of technology to increase operational efficiencies.

This project will install and implement an Advanced Metering Infrastructure (AMI) System designed to provide real time operational modeling information to track water customer demand and use. The AMI system and web portal technology will provide significant water savings, adding to additional water supply availability. This will improve current water management systems through the City of Santa Ana. Currently, the City of Santa tracks supply conditions, but insufficient information is known about customer daily use. This information is key in evaluating user restrictions, water delivery needs, and how best to meet drought compliance standards set by the state of California.

This application is seeking funding to upgrade its metering infrastructure and billing systems that will allow Santa Ana's residents to effectively monitor their water consumption using real-time data. The City of Santa Ana has completed all the preliminary work and is prepared to implement this project immediately after getting the notice of award.

I respectfully ask for your kind consideration of this application for funding.

Thank you,

Robert J. Hunter  
General Manager

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY





*City of Santa Ana Automated Metering Infrastructure (AMI) Installation Project  
WaterSMART 2019 Water and Energy Efficiency Grants*

STATE CAPITOL  
P.O. BOX 942849  
SACRAMENTO, CA 94249-0069  
(916) 319-2069  
FAX (916) 319-2169  
  
DISTRICT OFFICE  
2400 EAST KATELLA AVENUE, SUITE 640  
ANAHEIM, CA 92806  
(714) 939-8469  
FAX (714) 939-8986  
  
E-MAIL  
Assemblymember.Daly@assembly.ca.gov

Assembly  
California Legislature  
  
TOM DALY  
ASSEMBLYMEMBER, SIXTY-NINTH DISTRICT

COMMITTEES  
CHAIR: INSURANCE  
TRANSPORTATION  
GOVERNMENTAL ORGANIZATION  
VETERANS AFFAIRS

March 18, 2019

Brenda Burman  
Commissioner, Bureau of Reclamation  
1849 C Street NW  
Washington DC 20240-0001

**RE: WaterSMART Water and Energy Efficiency Grant Application – City of Santa Ana, California**

Dear Commissioner Burman,

The City of Santa Ana has applied for a \$1.5 million grant from the Bureau of Reclamation's WaterSMART Water and Energy Efficiency Grant program. The funding would help support phase 2 of the City's Advanced Metering Infrastructure (AMI) Installation project. Phase 1 was aided by a \$4 million appropriation from the California state budget in 2018.

Completion of the AMI project will provide more accurate monitoring and remediation of leaks throughout the City's service area, which spans 27 square miles and serves approximately 325,000 people. AMI will provide real-time operational modeling information, establish a distribution leak detection system, and provide water-consumption data to allow individuals to manage their water usage. Implementation of this project will result in quantifiable water and energy savings, as well as support broader water reliability benefits.

The current meter reading process involves public works personnel who must physically drive to each metered location to manually read water meters every other month. This process leaves residents vulnerable to water leaks that go undetected between readings, and results in unnecessary waste of scarce potable water resources. The use of AMI technology will minimize previously unaccounted for water loss, not only increasing water conservation, but also helping residents reduce costs by more effectively addressing leaks. This project enhances local, state, and federal water conservation objectives by measuring products and/or leakage quantifications that will result in measurable water savings. Additionally, the project will help to further investments in water conservation in Southern California to the economic benefit of Santa Ana residents and the State.

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*City of Santa Ana Automated Metering Infrastructure (AMI) Installation Project  
WaterSMART 2019 Water and Energy Efficiency Grants*

The City strives to be a leader in water resource management while providing customers with safe, reliable drinking water at the lowest possible cost. AMI will help Santa Ana achieve this goal by addressing long-standing water shortages with water-wise tactics. This project will allow customers to be more informed consumers and empowering them to be better stewards of the environment.

I strongly endorse the Santa Ana AMI project, and I ask the Bureau of Reclamation to recognize it as beneficial to the local community, the region, and the state.

Sincerely,

A handwritten signature in blue ink that reads "Tom Daly".

Tom Daly  
Assemblymember, 69<sup>th</sup> Assembly District

cc: Miguel Pulido, Mayor, City of Santa Ana  
Fuad S. Sweiss, Executive Director, City of Santa Ana Public Works Agency

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**ORANGE COUNTY WATER DISTRICT**  
ORANGE COUNTY'S GROUNDWATER AUTHORITY

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Mr. Darren Olson  
Bureau of Reclamation  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225



**RE: Request for Support for the City of Santa Ana Application to WaterSMART Water and Energy Efficiency Grants for FY 2019**

Dear Mr. Olson:

This letter is to express our support for the City of Santa Ana's application to WaterSMART Water and Energy Efficiency Grants for FY 2019 to implement the Automated Metering Infrastructure project.

The City of Santa Ana is the heart of sunny Orange County, where the dense population of over 330,000 and arid southern California environments makes conservation of water resources a constant battle. The City of Santa Ana is proposing a water and energy efficiency project that will help the City of Santa Ana with its ongoing conservation efforts and prepare to respond to the extreme drought conditions in California. This project is aligned with the City's strategic plan to make greater use of technology to increase operational efficiencies.

This project will install and implement an Advanced Metering Infrastructure (AMI) System designed to provide real time operational modeling information to track water customer demand and use. The AMI system and web portal technology will provide significant water savings, adding to additional water supply availability. This will improve current water management systems through the City of Santa Ana. Currently, the City of Santa tracks supply conditions, but insufficient information is known about customer daily use. This information is key in evaluating user restrictions, water delivery needs, and how best to meet drought compliance standards set by the state of California.

This application is seeking funding to upgrade its metering infrastructure and billing systems that will allow Santa Ana's residents to effectively monitor their water consumption using real-time data. City of Santa Ana has completed all the preliminary work and is prepared to implement this project immediately after getting the notice of award.

I respectfully ask for your kind consideration of this application for funding.

Thank you,

Michael R. Markus, P.E., D.WRE, BCEE, F.ASCE  
General Manager