WaterSMART: Water and Energy Efficiency Grants, FY23

Funding Opportunity Announcement No. R23AS00008

Funding Group III

Advanced Metering Infrastructure (AMI) Installation Project

City of St. George Water Services Department

811 East Red Hills Parkway

St. George, UT 84770

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July 28, 2022

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Executive Summary

Date: July 28, 2022

Applicant: City of St. George, Water Services Department

City, County, State: St. George, Washington County, Utah

Applicant Category: Category A

Funding Group: Funding Group II

Project Name: Advanced Metering Infrastructure (AMI) Project

Project Length: 3 years

Estimated Completion Date: July 2026

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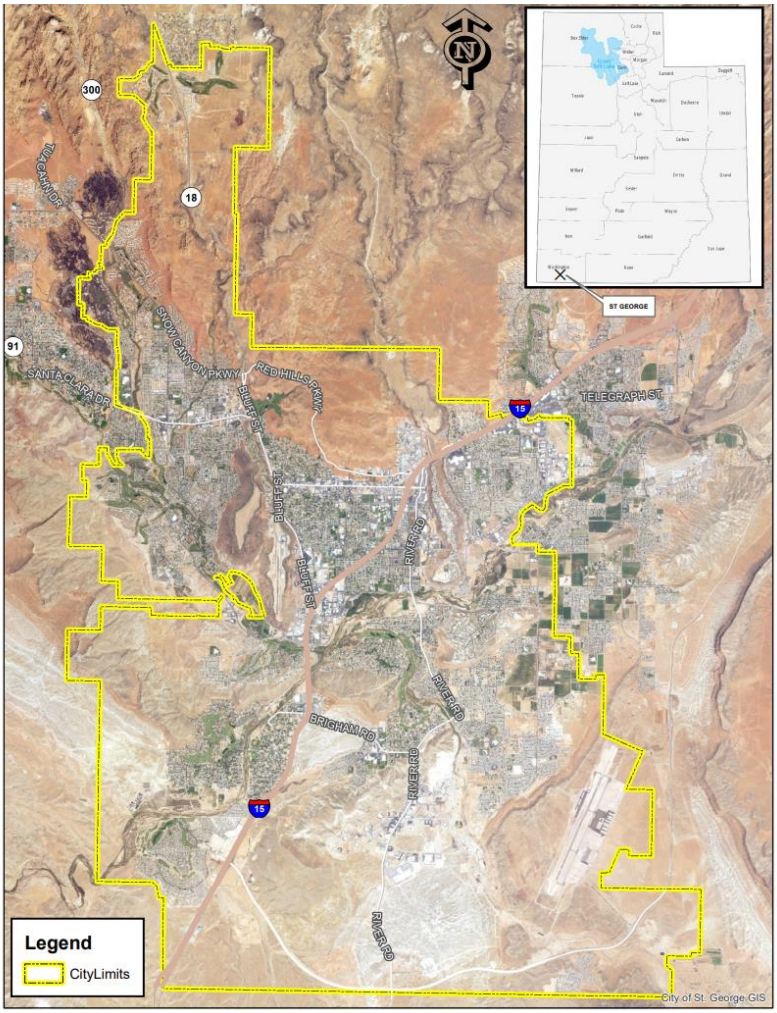
The City of St. George Water Services Department is a Category A applicant and is requesting $3,000,000 in federal funding assistance under Funding Group II of the WaterSMART: Water and Energy Efficiency Grant for FY 2023 for the installation and implementation of advanced metering infrastructure (AMI) throughout the City. Grant funding will contribute to the installation of approximately 32,500 AMI end points on existing water meters, enabling real-time water use data. Coupled with a customer interface portal, the AMI installation project is expected to result in annual water savings of 2,711 acre-ft, which will remain in the Virgin River Drainage Basin.

Installation of AMI metering equipment will begin July 2023 and is expected to last for a duration of 3 year. Completion of the project is expected to be June 2026.

Project Location

The City of St. George in located in the southwest corner of the State of Utah, approximately 300 miles south of Salt Lake City, and approximately 150 miles north of Las Vegas, Nevada, and is situated along the Interstate 15 corridor. The City encompasses an areas of approximately 65 square miles, at a elevations ranging from 2,700' to 4,000'. The estimated population of St. George is 100,000+, based on estimates from the 2020 population census, making St. George the sixth largest city in Utah. A new report from the U.S. Census showed St. George ranked as the fastest-growing metro area in America, with an annual growth rate exceeding 5.1% between 2020 and 2021. The AMI installation project encompasses all areas within the City service area. The following is an exhibit of the City municipal boundaries. City of St. George coordinates are 37°06'15"N 113°35'03"W. Figure 1 is a map of the City boundaries.

Figure 1- City of St. George Map



Technical Project Description

The Advanced Metering Infrastructure (AMI) Project consists of replacing or retrofitting all existing metering devices within the City of St. George with AMI technology, capable of measuring and transmitting near real-time data from each water metering device to a central data repository. The existing meter installation and/or retrofit will vary from complete water meter replacement to the installation of an AMI endpoint only, depending on existing metering devices.

All of the existing water service connection meters within the City of St. George are Badger Recordall nutating disc meters and are coupled with Itron Electronic Radio Transmitters (ERTs) and have the capability of Advanced Meter Reading (AMR). With the AMR system, each meter is read from a mobile data collector one time per month. The City has three mobile data collectors mounted in vehicles, which drive by each meter once a month to collect the AMR data for utility billing purposes. The City is divided into several metering routes, with multiple routes included in one of four billing "cycles". Monthly water consumption data is collected through the AMR system and is used to prepare monthly water billing.

There are three components to the existing water meter and AMR devices; the water meter, meter register, and the ERT. The AMI installation project will replace and/or retrofit each of these components on all existing meters.

The following is a meter retrofit summary:

Table 1 AMI Retrofit Summary

Retrofit / Replacement Task	# Meters
Meter Replacement w/ New Register and Endpoint	2,840
Meter Retrofit w/ New Register and Endpoint	23,522
Meter Retrofit w/ New Endpoint Only	5,947
TOTAL	32,309

The Badger Recordall water meter has been the standard water meter for the City of St. George for over 20 years. The majority of the water meter within the City have been in service for less than 20 years. However, there are several meters that have been in service for longer than 20 years. Studies indicate that as water meters age, their metering accuracy diminishes[1]. While there are several factors that attribute to a meters diminishing accuracy, age is certainly one of those factors.

There are currently 2,840 Badger Record-all water meters within the water distribution system that have been in service for over 20 years. Due to the diminished metering accuracy of these meters, they will be replaced with a new Badger meter, register, and AMI endpoint. The new registers that will be used on all of the water meters is the Badger HR-E LCD High Resolution LCD Encoder. These registers, or encoders, will be field programmed to measure water passing through the meter at a 0.1 gallon increment, whereas the existing registers on these older meters are measuring water passing through the meter at 10 gallon increments.

The majority of the existing meters within the water distribution system have been in service for less than 15 years. However, these meters are equipped with mechanical dial registers. These 23,522 Badger Recordall meters with Itron Electronic Radio Transmitters will be retrofitted with a new Badger HR-E LCD High Resolution LCD Encoder (register) and the ORION Cellular LTE endpoint. The ORION endpoint stores 42 days of 15-minute data internally and transmits that data to a cloud-based server on a customizable interval and schedule.

The AMI installation project will replace and/or retrofit each water service connection meter within the city, depending on the age and condition of the existing water meter and register. With this project, water metes that have been in service for 20 years or more will be replaced in order to restore metering accuracy. Water meters registers with mechanical dials will be replaced with new electronic registers, or encoders, with an LCD display. The older mechanical dial registers display water consumption in 10-gallon increments. The new electronic LCD registers are capable of displaying water consumption in 0.10-gallon increments. The higher definition water consumption data is critical when using this data as an early leak detection mechanism.

[1] Stoker, D.; Barfuss, S.; Johnson, M.; Flow Measurement Accuracies of In-Service Residential Water Meters, 2012 Journal- American Water Works Association
AWWA, 2012 Manual of Water Supply Practices, M^, Water Meters- Selection, Installation, Testing, and Maintenance

Water meters that have been installed in the water distribution system within the last three years are already equipped with the Badger HR-E LCD High Resolution Encoder. For these 5,947 meters, the Itron ERT will be replaced with the ORION endpoint.

Evaluation Criteria

Evaluation Criterion A—Quantifiable Water Savings (28 points)

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.

The AMI Implementation Project will result in the retrofit or replacement of nearly 35,200 water meter endpoints throughout the City with AMI endpoints, capable of transmitting near real-time water use data. The installation of an AMI system will result in water savings in two ways:

1. Water conserved through behavioral changes from near real-time water use data resulting in 1,714 AF of water conserved.

2. Improved residential leak detection resulting in 997 AF of water conserved.

In addition to the direct water savings realized from the project, there is also an indirect water savings associated with the replacement of aging water meters with diminished accuracies. It is estimated that the project will result in accounting for 92 AF/year of water that is currently unaccounted for due to the diminished accuracy of aging meters. While this is not a direct measurement of water that is conserved through the project, it provides an indirect water savings as a decrease in system losses throughout the water distribution system.

2) Describe current losses: Please explain where the water that will be conserved is currently going and how it is being used. Consider the following:

a. Explain where current losses are going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?

Current losses are either seeping into the ground or are conveyed to the Virgin River via a stormwater conveyance system.

b. If known, please explain how current losses are being used. For example, are current losses returning to the system for use by others? Are current losses entering an impaired groundwater table becoming unsuitable for future use?

Current losses are not being put to beneficial use.

c. Are there any known benefits associated with where the current losses are going? For example, is seepage water providing additional habitat for fish or animal species?

There are no known benefits associated with the current losses.

3) 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.

The installation of an AMI system will result in water conservation in two ways; (1) water conserved through customer engagement of real-time water use data, and (2) water conserved through early leak detection on customer size of meter.

A case study conducted by IBM Research[2] entitled *Every Drop Counts: How Water Utilities are Putting Water Efficiency First*, determined that informed and engaged customers conserve an average of 6.6% more water than those who were not informed of their water use. Coupled with the installation of an AMI system, a customer portal will be used to engage the customer and provide near real-time water use data. In addition, the customer portal will alert the customer of potential water leaks, based on constant low-flow conditions. With an average annual water use of 25,971 AF throughout the City, a 6.6% reduction in water use due to customer engagement would result in 1,714 AF of water savings.

Another case study performed by Texas A&M University on the Arlington Water Utilities suggest that an AMI customer portal reduced water use by an average of 8.7% during the winter months and nearly 17% during the summer months[3]. The City of St. George climate is a desert climate, with extreme temperatures in the summer months. As such, a typical customer will use 4-5 times more water in the summer months as they do during the winter months. Because of this, it is anticipated that the actual savings resulting from a customer portal will be much greater than the 6.6% used for the conservation calculation.

The Environmental Protection Agency (EPA) has estimated that the average household loses approximately 10,000 gallons of water per year through leaky pipes, appliances, and plumbing fixtures. The City of St. George's existing AMR and utility billing software has the ability to alert the customer of such leaks. However, with meter reading

[2] Hanes, D; 2013 IBM Research, *Every Drop Counts: How Water Utilities are Putting Water Efficiency First*

[3] Hahn Public Research, May 2017 The Value of Public Engagement Campaigns in Ensuring the Success of Advanced Metering Infrastructure (AMI) Implementation

occurring only one time per month, and with four separate billing cycles through the City, alerts of potential leaks could occur 30 to 45 days after the leak actually occurs. In addition, many of the older meters within the system are unable to detect a small leak as their registers measure in tens of gallons. With 32,500 customers losing an average of 10,000 gallons of water per year through leaky infrastructure, a total of 997 AF of water is expected to be conserved through the installation of an AMI system.

Table 2 is a summary of the expected water savings from an AMI system.

Table 2- AMI Benefit Summary

AMI Benefit	Estimated Annual Water Conservation (AF)
Customer Portal- Water Consumption Data Availability	1,714
Leak Detection	997
TOTAL	2,711

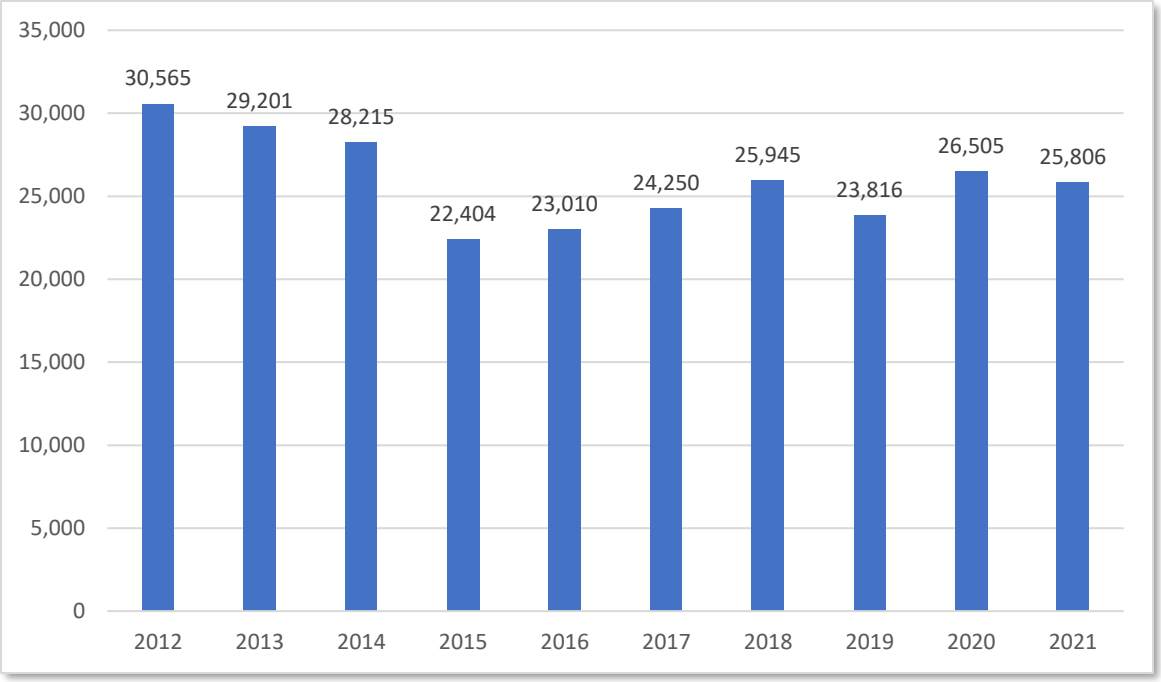
4) Please address the following questions according to the type of infrastructure improvement you are proposing for funding. See Appendix A: Benefit Quantification and Performance Measure Guidance for additional guidance on quantifying water savings.

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.

As stated in previous sections, multiple case studies and white papers suggest that the implementation of an AMI can result in water savings in two ways; (1) water conserved through customer engagement of real-time water use data, and (2) water conserved through early leak detection on customer size of meter. Studies suggest that engaged customers conserve an average of 6.6% more water than those who were not informed of their water use.

On average, the City delivers 25,971 AF of water annually to its customers as summarized below in Figure 2.

Figure 2- Annual Water Consumption



Coupled with the installation of an AMI system, a customer portal will be used to engage the customer and provide near real-time water use data. The customer portal will alert the customer of potential water leaks, based on constant low-flow conditions. With an average annual water use of 25,971 AF throughout the City, a 6.6% reduction in water use due to customer engagement would result in 1,714 AF of water savings annually.

As mentioned previously, with 32,500 customers losing an average of 10,000 gallons of water per year through leaky infrastructure as estimated by the EPA, a total of 997 AF of water is expected to be conserved through the installation of an AMI system.

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

Current system losses are calculated on an annual basis and reported to the State of Utah Division of Water Rights. All of the water produced by the City's various water sources is metered at the source. A supervisory control and data acquisition (SCADA) system is used to transmit and archive all water metering data. In addition, all water purchased from the Washington County Water Conservancy District (WCWCD) is accounted for in the City's water production calculations.

All of the water that is delivered to the City's customers is metered for billing purposes and tracked on a monthly basis. On an annual basis, the amount of water produced or purchased is compared with the amount of water delivered and metered to the City's

customers. The difference between the amount of water produced or purchased and the amount of water delivered to our customers is considered "Non-Revenue" water, or water that cannot be accounted for. In addition, an estimate is performed each year on the amount of water that is intentionally lost through fire suppression, system flushing, and known unmetered uses. These known losses are subtracted to the total non-revenue water to provide a total system loss. Over the past five years, the total system loss averages 2,947 acre-feet per year. These system losses are due to increasing inaccuracy of the City's aging meters and system leaks. However, these system losses do not account for water lost through leaking customer infrastructure, as those leaks occur after the water meter, and are accounted for in individual water meter readings.

The Environmental Protection Agency (EPA) has estimated that the average household loses approximately 10,000 gallons of water per year through leaky pipes, appliances, and plumbing fixtures[4]. The City of St. George's existing AMR and utility billing software has the ability to alert the customer of such leaks. However, with meter reading occurring only one time per month, and with four separate billing cycles through the City, alerts of potential leaks could occur 30 to 45 days after the leak actually occurs. In addition, many of the older meters within the system are unable to detect a small leak as their registers measure in tens of gallons.

c. For installing end-user water service meters, e.g., for a residential or commercial building unit., 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 *Utah's Regional M&I Water Conservation Goals*[5] document states that "an important companion to water conservation education will be improved metering. Water users' interest in conservation and ability to modify their behavior will largely depend on them first understanding how their water is being used. Customer feedback tools in bills and web applications, such as social norming comparisons and leak notifications, are also valuable, especially when enabled by advanced metering infrastructure (AMI) and supported by tiered rates. Research has shown averages of 7% to 12% water savings for new installations of AMI systems coupled with customer feedback (Sønderlund et al. 2016; Davies et al. 2014); another study noted the benefits of earlier leak detection and notification (Schultz et al. 2018)."

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

[4] https://www.epa.gov/watersense/fix-leak-week
[5] Utah Division of Water Resources, Nov 2019 *Utah's Regional M&I Water Conservation Goals*

The City currently uses Badger Recordall water meters throughout the City. The existing Badger Recordall Meters are coupled with a mechanical register, which measures water flow in 10 gallon increments. In addition, the existing meters are coupled with an ITRON Electronic Radio Transmitter (ERT), which communicates with "drive by: radio equipment in each of three meter reading vehicles.

Badger meters that have been in service for more than 20 years will be replaced with new Badger Recordall meters, equipped with HR-E LCD Encoders (registers) and ORION Cellular LTE endpoints. Meters that have been in services for more than 4 years, but less than 20 years, will be retrofitted with Bader HRE/LCD (High Resolution Encoder with Liquid Crystal Display) encoders and ORION Cellular LTE endpoints, replacing their mechanical registers and ITRON ERTs. Meters that have been in service for less than four years will be retrofitted with ORION Cellular LTE endpoints, replacing their existing ITON ERTs. At the completion of this project, all water meters within the City of St. George service area will be capable of measuring water consumption to 0.1 gallons increments and transmitting 15-minute incremental water consumption data for each metered connection. The Badger BEACON software will be utilized as the customer portal.

Table 3 summaries the types and quantities of devices that are to be installed with this project.

Table 3- AMI Device Installation Summary

Device to be Installed	# of Devices
Complete Retrofit with New Bader Recordall Meter, HR-E LCD Encoder, and ORION Cellular LTE Endpoint	2,840
Partial Retrofit w/ New HR-E LCD Encoder and ORION Cellular LTE Endpoint	23,522
Minimal Retrofit w/ New Endpoint	5,947
Total	32,309

e. How will actual water savings be verified upon completion of the project?

Verification of the actual water savings will be accomplished through an audit of individual utility account and comparing the average water consumption after implementation of the AMI system with historic water consumption data.

Evaluation Criterion B—Renewable Energy (20 points)

Subcriterion No. B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery

Not applicable to this project.

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

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

The water that is conserved through the implementation of an AMI system is water that will not require energy to produce, treat, or convey to the City's customers. All of the water that is delivered to the City's customers requires energy for production (groundwater wells), treatment (treatment plant or chlorinators), and distribution (booster pump stations). With the elevations throughout the City varying from approximately 2,500 ft to 4,000 ft MSL, there are over 30 separate pressure zones, requiring 16 different booster pump stations to provide adequate pressure to all reaches of the City.

If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.

In 2012, the Utah Division of Water Resources presented information in a report entitled *The Water – Energy Nexus in Utah*[6]. The following table is a summary of their finding of Utah's energy consumption used for water-related activities.

[6] Utah Division of Water Resources, Sept 2012, *The Water – Energy Nexus in Utah*

Table 4- Energy Intensity of Water Activities

Water Phase	Energy Intensity (kWh/AF)
Groundwater Production & Conveyance Facilities	950
Water Treatment	50
Water Distribution (pumping)	220
Wastewater Treatment	850

Based on the values summarized in Table 4, the total energy savings is calculated based on the anticipated annual water savings. The following Table 5 is a summary of the amount of energy savings that is expected as a result of saving 2,711 AF of water per year.

Table 5- Energy Savings

Source & Conveyance		Water Treatment		Distribution		Wastewater Treatment		Total Energy Savings (kWr/yr)
Energy Intensity (kWh/AF)	Energy Savings (kWh/yr)	Energy Intensity (kWh/AF	Energy Savings (kWh/yr)	Energy Intensity (kWh/AF	Energy Savings (kWh/yr	Energy Intensity (kWh/AF	Energy Savings (kWh/yr	
950	2,575,450	50	135,550	220	596,420	850	2,304,350	5,611,770

As the City of St. George implements this AMI installation project and realizes a reduction in its water consumption, the energy required to produce and supply water will decrease. This energy conserved will be available to help meet the needs of the growing community. It is anticipated that the project will result in the savings of 5,611,770 kWh annually.

How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.

The project will lower greenhouse gas emissions by an estimated 74,127 pounds annually through the reduction of milage required to collect utility billing data.

If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?

The City of St. George has a very diverse topography, with elevations ranging from 2,500' to over 4,000' MSL. With that diverse topography comes the challenge of distributing water throughout 30 separate pressure zones with various booster pump stations. The following table summarizes the groundwater wells and booster pump station that produce and distribute water throughout the City, with their associated horsepower requirements.

Table 6- Pumping Facilities

Groundwater Source	Total HP
Gunlock Wells (11 wells)	1,575
Snow Canyon Wells (5 wells)	500
Ledges Wells (3 wells)	675
City Creek Well	300
West City Springs	40
TOTAL	3,090

Booster Pump Stations	Total HP
Ft. Pierce PS	105
Snow Canyon PS	50
Eastridge PS	400
Stone Cliff PS	40
Bloomington Hills PS	120
Southgate PS	100
Tonaquint PS	375
Little Valley PS	750
Mall Drive PS	750
Skyline Drive PS	1,750
Industrial PS	80
Stone Cliff Upper PS	125
Airport PS	250
East Bloomington PS	100
Divario PS	225
TOTAL	5,220

As shown, over 8,300 horsepower is required to produce and convey water through the water distribution system. For every acre-foot of water that is conserved as a result of the AMI installation project, an estimated 1,170 kWh of energy is saved annually due to the reduction of pumping requirements.

Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.

The energy savings estimate is based on energy savings from all water production and distribution related activities, including water production, water treatment, water distribution (pumping), as well as wastewater treatment.

Does the calculation include any energy required to treat the water, if applicable?

Table 5 above includes the energy saving components of treating water. It is estimated that the AMI installation project would reduce the amount of energy required to treat water by 135,550 kWh per year.

Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.

The AMI Implementation Project will also contribute to energy efficiencies through the elimination of manual meter reading and the associated meter reading vehicle usage. The existing meter reading system requires City employees to drive to certain areas within the City to collect individual meter readings through the City's AMR system. Implementation of an AMI system will eliminate the milage required to read meters, resulting in a significant savings of fuel each year.

Existing meter reading requires the use of three vehicles and employees. On average, each meter reading vehicle drives 35,255 miles per year, for a total of 105,765 miles. A total of 4,202 gallons of fuel is consumed each year, at an average of 25.22 miles per gallon. With the implementation of AMI, it is estimated that 90% of the vehicle drive millage can be eliminated, or about 95,189 miles, with the associated 3,782 gallons of fuel. Greenhouse gas emissions are estimated to be approximately 19.6 pounds per gallons, based on the EPA Greenhouse Gas Equivalencies Calculator[7]. The implementation of an AMI system is expected to result in the reduction of greenhouse gas emissions by approximately 74,127 pounds per year.

Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).

Not applicable.

Evaluation Criterion C—Sustainability Benefits (20 points)

Does the project seek to improve ecological resiliency to climate change?

[7] https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels).

Water that is conserved from the AMI installation project will remain in the ecosystem until needed to sustain future water demand. The majority of the water that is supplied to the City's customer comes from the Quail Creek Water Treatment Plant, which is supplied water from Quail Creek Reservoir. The reservoir is supplied water from the Virgin River. Surface water that is saved as a result of the project will remain in either Quail Creek Reservoir, Sand Hollow Reservoir, or the Virgin River. Any portion of groundwater that is saved as a result of the project will remain in the Navajo Sandstone groundwater aquifer.

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 or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).

While the project will not directly benefit federally threatened and endangered species, the environmental benefits attributed to water and energy conservation and the reduction of greenhouse gas emissions will benefit the City of St. George and the surrounding region.

Please describe any other ecosystem benefits as a direct result of the project.

Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?

The AMI installation project will provide greater flexibility to water managers and result in more efficient use of water supplies. The AMI system will provide near real-time water consumption data to all connections throughout the City. This data will be utilized by the Water Services management and staff to better understand water consumption patterns and trends throughout all regions of the City and help staff identify specific areas where additional water conservation education and encouragement is needed.

Addressing a specific water and/or energy sustainability concern(s). Will the project address a specific sustainability concern? Please address the following:

Explain and provide detail of the specific issue(s) in the area that is impacting water sustainability, such as shortages due to drought and/or climate change, increased demand, or reduced deliveries.

Utah is the second driest state and is one of the fastest growing states in the nation. St. George is ranked as the fastest-growing metro area in the nation, according to a report from the U.S. Census and reported by the Associated Press[8].

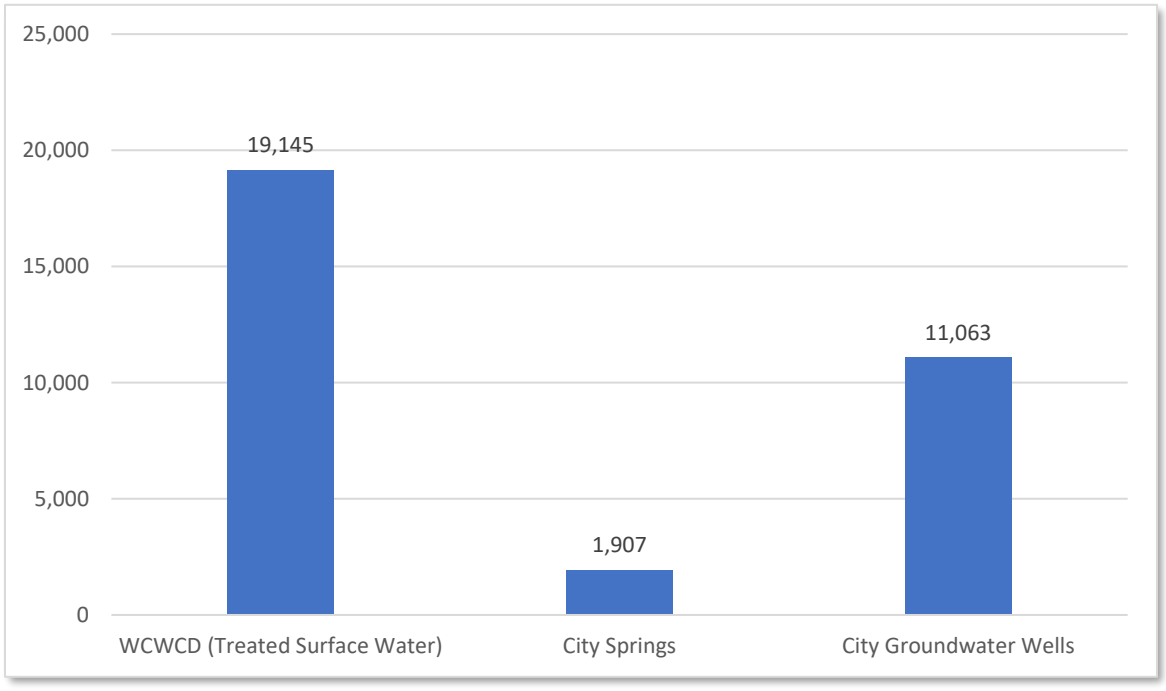
Southern Utah has experienced several significant droughts in the past 20 years, which have resulted in a decrease in water supplies. The City is currently supplied by various springs and groundwater wells that are owned and operated by the City, as well as treated surface water from Quail Creek Reservoir, purchased from the Washington County Water Conservancy District (WCWCD).

During the 2021 calendar year, the City's total culinary water supply was 32,115 acre-ft. The source composition in 2021 is as follows:

- WCWCD Purchases (Treated Surface Water): 19,145 acre-ft (60%)
- City owned springs: 1,907 acre-ft (6%)
- City owned groundwater wells: 11,063 acre-ft (34%)

Figure 3 illustrates the source composition of water produced during 2021 as shown below.

Figure 3- Water Source Compilation



[8] Hemmersmeier, S: Census: St. George is fastest-growing in U.S. again, April 2, 2022

Severe drought conditions in Utah has led to a State of Emergency declaration by the governor in March 2021, and again in April 2022 as Executive Order No. 2022-04. The Executive Order stated that extreme drought has significantly impacted the state eight of the last 10 years. In addition the snowpack was 25% below normal and nineteen of Utah's largest 45 reservoirs were below 55% of capacity, with an overall statewide reservoir storage at 59% of capacity.

As shown in the 2019 Culinary Water Master Plan[9], the expected 10-year culinary water system demand is anticipated to be 34,042 AF/year in 2028, with the ultimate build-out source capacity requirement of 57,860 AF/year by 2055. The City's ultimate water source reliable yield is 18,869 AF/year. The shortfall between the City's water demand and reliable yield is expected to be provided by water sources developed by the WCWCD on a regional level.

The WCWCD is currently in the process of developing and updated WCWCD Culinary Water Master Plan for their region-wide service area. A copy of the draft master plan was provided to the City for review. The WCWCD has also recently published its Water Conservation Plan, dated October 2021[10]. The WCWCD Water Conservation Plan identifies the WCWCD Reliable Water Supply as 33,429 AF/year, with an additional 3.375 AF/year future reliable water supplies. In addition, 30,307 AF of reliable water supplies are identified as municipal water supplies that are developed by the municipalities within the region served by the WCWCD. The report shows a total of 67,111 AF/year of reliable water sources that are either currently developed or are planned to be developed in the near future. In addition to culinary water supplies, the WCWCD Water Conservation Plan identifies a total reliable yield of 25,219 AF/year of secondary irrigation water sources throughout the region. The same WCWCD Water Conservation Plan compares the reliable yield of both the culinary and secondary irrigation water sources to the total water demand over the next forty years. Based on this information, the reliable yield of all existing and anticipated culinary and secondary irrigation sources of water will only meet the demand for water until 2028, or an approximate 6 years from now. With aggressive water conservation, it is calculated that the reliable yield will meet future water demands until 2038, or approximately 16 year from now.

Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.

[9] Bowen Collins & Associates, Dec 2019; Culinary Water Master Plan, City of St. George
[10] https://www.wcwcd.org/wp-content/uploads/2022/03/2021ConservationPlan_FINAL.pdf

Please describe how the project will directly address the concern(s) stated above. For example, if experiencing shortages due to drought or climate change, how will the project directly address and confront the shortages?

It is imperative that the City of St. George, and all municipalities within the WCWCD service area make water conservation a top priority to better contribute to supporting water reliability in the area. The AMI installation project will assist in the City's water conservation efforts in providing an opportunity for the City and it's customers to better manage and monitor water consumption through an interactive web application portal. The project will also increase water resiliency and sustainability by providing individual water users an early leak detection, enabling customers to remedy a water leak in a timely manner.

Please address where any conserved water as a result of the project 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 majority of the water (60%) used by the City of St. George residents comes from a surface water treatment plant. Water supplying the water treatment plant comes from the Quail Creek Reservoir, which is an off-stream reservoir that is supplied by the Virgin River, a tributary of the Colorado River. In addition to the treated water, groundwater wells and springs supply the remaining portion (40%).

Water that is conserved through the implementation of the AMI implementation project will be left in the Quail Creek reservoir or in the groundwater aquifer to be used at a future time to sustain the anticipated growth of the region.

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

No additional mechanism is required to put the conserved water to its intended use.

Indicate the quantity of conserved water that will be used for the intended purpose(s).

As previously mentioned, it is anticipated that the AMI implementation project will conserve 2,711 AF of water annually.

Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.

Does this proposed project strengthen water supply sustainability to increase resilience to climate change?

Will the proposed project establish and utilize a renewable energy source?

The project does not establish and utilize a renewable energy source.

Will the project result in lower greenhouse gas emissions?

As stated earlier, the project will lower greenhouse gas emissions by an estimated 74,127 pounds annually through the reduction of milage required to collect utility billing data.

Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?

The project does directly benefit the Shivwits Band of the Paiute Indian Tribe of Utah. The City provides drinking water services to the Shivwits Band Reservation, located approximately 10 miles west of the City of St. George. The expected water savings associated with the implementation of an AMI system throughout the City will increase water sustainability for the Shivwits Band of the Paiute Indian Tribe of Utah. The project does not provide renewable energy to the tribe.

Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities?

The expected water savings from the implementation of an AMI system will improve resilience to climate change and drought impacts.

(4) Other Benefits: Will the project address water and/or energy sustainability in other ways not described above? For example:

Will the project assist States and water users in complying with interstate compacts?

No. The project does not assist states and water users in complying with instate compacts.

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

The AMI installation project will benefit all classification of water users throughout the City, including residential, commercial, industrial, agricultural, and institutional users.

Will the project benefit a larger initiative to address sustainability?

The project will benefit a larger initiative of overall water conservation as an effort to address water sustainability and the effects of climate change.

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

The project will help prevent or alleviate water-related crisis or conflict in the region. As stated in earlier sections, the region is suffering the effects of a multi-year sustained drought. At the same time, the region is experiencing unprecedented growth, with the highest growth rate in the nation. With the regions existing water supplies nearly exhausted and future water supply projects stalled or postponed due to environmental and/or climate change issues, it has become apparent that the current water supplies will only sustain growth for a limited number of years. This realization has led to a level of tension in the region over water availability that has not previously been experienced. This project will help alleviate some of the tension as the results of the project are realized and water savings are quantified. In addition, as the City is the largest municipality in the region, other communities will look at this project as an example and model of water conservation strategies and will emulate the project in an effort to conserve water.

Evaluation Criterion D—Complementing On-Farm Irrigation Improvements (10 points)

This criterion is not applicable to this project.

Evaluation Criterion E—Planning and Implementation (8 points)

Subcriterion E.1—Project Planning

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Does the project address an adaptation strategy identified in a completed WaterSMART Basin Study?

The City of St. George has prepared a Water Conservation Plan. A copy of the plan can be found on the City's website at: www.sgcity.org. In addition, the State of Utah has recently adopted regional water conservation goals. A copy of the Utah's Regional M&I Water Conservation Goals can be found at https://conservewater.utah.gov/wp-content/uploads/2021/05/Regional-Water-Conservation-Goals-Report-Final.pdf.The City has also recently completed an update to its Culinary Water Master Plan. A copy of that plan can be found on the City's website.

Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).

The City of St. George recently updated it's Culinary Water Master Plan document. The Culinary Water Master Plan document is a planning document that addresses existing infrastructure and water resources, projected population growth rate, and future water resources and infrastructure that are required to sustain the projected growth of the City. The projected water resources that are required to sustain the expected growth of the City are based on a conservation goal of a 10% reduction of water use for each equivalent residential connection (ERC) by the year 2030. The implementation of an AMI system is one tool of accomplishing this conservation goal.

If applicable, provide a detailed description of how a project is addressing an adaptation strategy specifically identified in a completed WaterSMART Basin Study or Water Management Options Pilot (e.g., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes) For more information on Basin Studies, including a list of completed basin studies and reports, please visit: www.usbr.gov/WaterSMART/bsp.

Not applicable to this project.

Subcriterion E.2— Readiness to Proceed

Identify and provide a summary description of the major tasks necessary to complete the project. Note: please do not repeat the more detailed technical project description provided in Section D.2.2.2. Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.

The City of St. George's proposed project is ready for implementation. The City has recently conducted and in-field demonstration and trial of the Badger meter, HD-LCD encoder, and ORION endpoint, coupled with the Badger BEACON customer portal. Upon grant approval, the City will begin purchasing and installing the required equipment. The following table is a summary of the project tasks with their associated timeline.

Table 7- AMI installation project Implementation Plan

AMI installation project Implementation Plan			
Task	**Description**	**Start**	**Finish**
Task 1: Project Preliminary Phase	Evaluation of different AMI technologies	Completed	
	Selection of AMI Endpoint technology and vendor		
	Demonstration of AMI technology and devices		
Task 2: Customer Portal and Utility Billing Interaction	Implement Badger BEACON Customer Portal. Database integration between Badger BEACON software and Incode utility billing software	Jan 2023	July 2023
Task 3: Meter Installation and Retrofit	Develop meter installation and retrofit plan.	July 2023	June 2026
	Installation and Implementation		
Task 4: Public Outreach	Conduct neighborhood meetings, customer notifications, social media content	Jan 2023	June 2026

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

There are no permitting requirements to complete the project. All AMI devices will be installed within existing meter boxes.

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

All engineering and design work that has been completed for this project is included within the grant application. No other engineering or design work is required for this project.

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

No new policies or administrative actions are required to implement and complete the project.

Evaluation Criterion F—Collaboration (6 points)

Up to 6 points may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.

Please describe how the project promotes and encourages collaboration. Consider the following:

Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?

Within the region, there is widespread support of the project. The City of St. George is one of nine municipalities that have joined a Regional Water Supply Agreement with the Washington County Water Conservancy District. By joining this agreement, the WCWCD is tasked with developing all future water sources within the region. Recognizing that all of the future water development will be on a regional level, rather than a municipal level, each of the regional communities are working together to adopt and implement water conservation measures in an effort to maximize our existing water resources. The WCWCD understands the necessity of region-wide water conservation efforts. The WCWCD has recently expressed it's support of the project and is contributing funds to the project. The WCWCD has agreed to contribute $1,000,000 to the project over it's three-year duration.

What is the significance of the collaboration/support?

Each of the nine regional municipalities recognize the need of water conservation as all of our future water resources will be developed on a regional level, rather than an individual municipality level.

Will this project increase the possibility/likelihood of future water conservation improvements by other water users?

There is a likelihood that this AMI implementation project will increase future water conservation improvements by other water users in the region. The City of St. George is one of nine municipalities that have joined a Regional Water Supply Agreement with the Washington County Water Conservancy District. By joining this agreement, the WCWCD is tasked with developing all future water sources within the region. The City of St. George is by far the largest municipality in the region. Most of the smaller municipalities look to the City of St. George as an example of water conservation. It is anticipated that many of the regional communities will transition to AMI and realize the water conservation benefits of an AMI system.

Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).

See attached letter of support from the Washington County Water Conservancy District.

Evaluation Criterion G— Additional Non-Federal Funding (4 points)

The estimated total cost of the project is $9,382,673. The City is requesting $3,000,000 of grant funding through the WaterSMART Water and Energy Efficiency program. The additional $6,382,673, or 68% of the project costs will be provided by the City of St. George ($5,382,673) and the WCWCD ($1,000,000) as non-Federal funding. Table 7 summarizes funding contributions for the project.

Table 8- Non-Federal Funding Contribution

Non Federal Funding Percentage	
Total Cost of Project	$9,382,673
Federal Funding	$3,000,000
Non-Federal Funding: City of St. George	$5,382,673
Non-Federal Funding: WCWCD	$1,000,000
Non-Federal Funding Percentage	68%

Evaluation Criterion H— Nexus to Reclamation (4 Points)

This criterion is not applicable to this project.

Performance Measures

The City of St. George understands the importance of quantifying the results of the AMI Implementation Project's performance. The City will implement a "pre-post" approach to quantify and track the performance measures (actual water and energy savings) of the project. The following performance measures will be used to evaluate the effectiveness of the project:

- **Performance Measure No. 1: Reduce water consumption through customer engagement and water consumption data availability.** The City will compare monthly water use data for each water meter within the project area before and after the installation of the AMI system. This will quantify an overall average water savings through the project area. In addition, the City will collect additional information from a randomly selected sample group of approximately 3% of the total utility accounts. The additional information will be used to conduct an in-depth analysis of water use for those select utility billing accounts. The additional information will be used to ensure that there are no other factors that may have contributed to a reduction in water consumption, i.e., change of ownership, reduction in landscaped areas, etc.

- **Performance Measure No. 2: Reduction of water losses through early leak detection.** With the implementation of an AMI system, the City will have the ability to query utility accounts that have been flagged by the AMI system as having a possible leak on the customers side of the meter. The City will prepare and maintain a database of all utility accounts that have been flagged with possible leaks, and quantify those flagged events on an annual basis. In addition, the City will select a sample set of approximately 3% of the total flagged leak events and conduct an in-depth evaluation of the event for the purpose of quantifying the amount of water leaked during the event. With the information provided by the AMI system, the City will be able to identify when the leak started and when the leak was remedied. This quantity of water will be compared the quantity that would have been expected had the leak not been detected by the AMI system (pre-project conditions).

- **Performance Measure No. 3: Reduction of energy consumption through water savings**. The reduction of energy consumption through water conservation resulting from the AMI implementation will be calculated on an annual basis. The calculation will be based on the quantified annual water savings as a result of the AMI implementation and multiplied by the average amount of energy required to produce, treat, convey, and distribute the water to the City's customers.

Project Budget

Funding Plan

The City of St. George is requesting grant funding from the Bureau of Reclamation WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2023, Notice of Funding Opportunity No. R23AS00008 in the amount of $3,000,000 for the City of St. George Advanced Metering Implementation Project. The total amount of the project is estimated to be $9,382,673.

The non-Federal share of the project cost, or $6,382,673 will be funded through user fees collected in the City's water fund and from excess water surcharges collected by the WCWCD. The City is committed to its water conservation efforts and recently increased its water rates in an effort to promote water conservation. The City has implemented an inclining tiered rate structure, with seven separate water rates, increase as water consumption increases. The recent changes to the consumer water rate dramatically increased the consumption rate of the highest three of the seven water tiers. In addition to the increase in water rates adopted by the City Council, the council recently voted unanimously to implement AMI and committed to funding the City's portion of the project.

The following table is a summary of non-Federal and Federal funding sources anticipated for the project.

Table 9- Project Funding Source

Funding Source	Amount
Federal: Requested BOR Grant Funding	$3,000,000
Non-Federal Funding: City of St. George	$5,382,673
Non-Federal Funding: WCWCD	$1,000,000
Total Cost of Project	$9,382,673

Budget Proposal

The following table is a summary of the estimated costs of the AMI installation project.

Table 10- Project Cost Estimate

Description	Wages	Quantity	Unit	Total
Salaries and Wages				
(3) Water Operators	$ 105,156	3	Year	$315,468
Water Services Supervisor (50%)	$ 28,719	3	Year	$86,156
Meter Technician (20%)	$ 7,186	3	Year	$21,557
GIS Analyst II (10%)	$ 5,467	3	Year	$16,401
Water Superintendant (10%)	$ 6,998	3	Year	$20,995
			Subtotal	$460,577
Fringe Benefits				
(3) Water Operators	$ 78,801	3	Year	$236,403
Water Supervisor (50%)	$ 16,037	3	Year	$48,111
Meter Technician (20%)	$ 5,299	3	Year	$15,897
GIS Technician (10%)	$ 3,106	3	Year	$9,317
Water Superintendant (10%)	$ 3,533	3	Year	$10,598
			Subtotal	$320,326
Travel Mileage				
(3) Vehicles (3 years)	$ 0.55	12,000	Mile	$6,600
			Subtotal	$6,600
Material & Supplies	New Meter, Register, and Endpoint			
3/4"	$ 309	2,652	Each	$818,805
1"	$ 443	90	Each	$39,826
1.5"	$ 724	28	Each	$20,263
2"	$ 962	40	Each	$38,468
3"	$ 2,431	17	Each	$41,327
4"	$ 4,000	11	Each	$44,000
6"	$ 5,000	2	Each	$10,000
			Subtotal	$1,012,689
Retrofit Existng Meter w/ New Register and Endpoint				
3/4"-6" Meter Sizes	$ 247	23,522	Each	$5,803,113
			Subtotal	$5,803,113
Retrofit Existing Meter w/ New Endpoint				
3/4"-6" Meter Sizes	$ 149	5,947	Each	$888,898
			Subtotal	$888,898
Additional Costs				
Setup for Billing and Cloud Services	$ 37,500	1	Lump Sum	$37,500
			Subtotal	$37,500
			Total	$8,529,702
			Contingency	$852,970
			Total	$9,382,673

Budget Narrative

The following provides a brief narrative description for each line item of the proposed project budget:

Salaries and Wages: $460,577

The estimated salaries and wages costs for the project includes estimated manpower for City of St. George employees to retrofit the meter, register, and endpoints, project oversight, and program administration. These estimated salaries and wages are based on 2021 salaries.

The project will be overseen by the City's Water Superintendent and Special Projects Manager. In addition, a meter technician and GIS technician have some involvement in the project.

The meter installations and all meter retrofits will be performed by one of three Water Operators from the Water Services Department. These employees will not be assigned specifically to this project but will rotate amount the several water operators within the department. The meter technician will be available to assist the water operators with any technical issues, as well as endpoint programing.

Fringe Benefits: $320,326

The fringe benefits for the above referenced employees include the following:

- Basic Life, AD&D, and LTD insurance
- Unemployment
- Workers Compensation
- Medicare
- Health Insurance
- Retirement

On average, approximately 40% of an employees compensation is attributed to fringe benefits.

Travel: $6,600

The AMI installation will be accomplished by three Water Operators within the Water Services Department. Each operator will be assigned a ½ ton Ford F150 for the Water Services Department fleet. Over the duration of the AMI installation project, it is anticipated that each of the three water operator's vehicle will travel 4,000 miles while installing the AMI devices. The milage cost of these vehicles are estimated using the 2021 FEMA schedule of Equipment Rates, which is $0.56 per mile. The estimate is

based on each vehicle being driven 200 workdays per year, averaging 6.67 miles per day, for a combined total of 12,000 miles.

Materials and Supplies: $7,704,700

Table 10 itemizes the required materials and supplies for the project. The estimated meter, register, and endpoint costs are based on prices provided by Hydro Specialties, our vendor for Badger meters and AMI products.

Setup for Billing and Cloud Services: $37,500

The setup fee for billing and cloud services is a fee associated with database migration and cloud-based data storage. Data collected by the AMI system will be storage in a cloud-based data storage facility. There will be some database migration work required to provide a data interface between the meter data and the City's existing utility billing platform, Incode, by Tyler Technologies.

Other Expenses: $852,970

A 10% contingency lime item is included in the budget proposal to cover unexpected costs and unanticipated costs increases beyond the estimated budget amount.

Total Budget: $9,382,673

The total project budget for the work to be completed with the AMI Implementation Project is $9,382,673.

Environmental and Cultural Resources Compliance

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.

There will be no earth-disturbing work or any work that will affect the air, water, or animal habitat in the project area. All of the work performed in the AMI Implementation project is confined within existing water meter boxes.

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 activities associated with this project that will affect or impact threatened or endangered species of critical habitat.

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.

The project will have no negative impacts on wetlands or surface waters.

When was the water delivery system constructed?

The City of St. George water delivery system in been expanding since the City's incorporation in 1861.

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.

The only irrigation system that will be affected by this project is the pressurized irrigation system owned and operated by the City of St. George. This project will add AMI endpoints to all of the pressurized secondary irrigation meters with the City's irrigation system service area. Currently there are approximately 400 users connected to the pressurized irrigation system.

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.

There are no building, structures, or features listed or eligible for listing on the National Register of Historic Places.

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

There are known archeological sites in the project area. The project will have no negative impact on any archeological site.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

No. The project will not have a disproportionately high and adverse affect 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 project will not limit access to use of Indian sacred sites or have any negative impacts on any tribal lands.

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 project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native species.

Required Permits or Approvals

No permits or approvals are anticipated to be required in order to implement the AMI installation project.

Overlap or Duplication of Effort Statement

There are no overlap between the proposed AMI installation project and any other active or anticipated proposals in terms of activities, costs, or commitment of key personnel.

There AMI installation project for consideration does not in any way duplicate any proposal or project that has been or will be submitted for funding considerations to any other potential funding sources that have not been identified in this application.

Conflict of Interest Disclosure Statement

No actual or potential conflict of interest exists at the time of this application submittal.

Letters of Support

Included are letters of support for the City of St. George Advanced Metering Infrastructure (AMI) Installation Project from the following:

Michael S. Lee, U.S. Senator

Mitt Romney, U.S. Senator

Chris Stewart, Member of Congress

John Curtis, Member of Congress

Zach Renstrom, Washington County Water Conservancy District

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BOUNTIFUL, UT 84010
(801) 364-5550

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ST. GEORGE, UT 84770
(435) 627-1500

Congress of the United States
House of Representatives
Washington, DC 20515-4402

CHRIS STEWART
2ND DISTRICT, UTAH

PERMANENT SELECT COMMITTEE ON INTELLIGENCE

COUNTERTERRORISM, COUNTERINTELLIGENCE, AND COUNTERPROLIFERATION SUBCOMMITTEE

RANKING MEMBER
STRATEGIC TECHNOLOGIES AND ADVANCED RESEARCH SUBCOMMITTEE

COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEE ON
INTERIOR, ENVIRONMENT, AND RELATED AGENCIES

SUBCOMMITTEE ON
FINANCIAL SERVICES AND GENERAL GOVERNMENT

July 2022

The Honorable Camille Calimlim Touton
Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington D.C. 20240-0001

Re: WaterSMART Water and Energy Efficiency Program, City of St. George Water Services Department (SGWSD) Advanced Metering Infrastructure Program

Dear Commissioner Touton,

We are writing to request the full and fair consideration of the City of St. George, Utah WaterSMART: Water and Energy Efficiency Grant application for the efficient use of culinary and secondary water with Advanced Metering Infrastructure (AMI). The City of St. George provides drinking water to approximately 100,000 residential customers as well as various commercial, industrial, and institutional users. Located in the southwestern corner of Utah near Zion National Park and approximately three hundred miles south of Salt Lake City, St. George is the only regional economic center off of the Wasatch Front. It is also the fastest growing city in the country according to the latest U.S. Census reports. Blessed with an abundance of natural beauty but with limited water resources, St. George is committed to wise and efficient use of water through encouraging conservation and expanding the use of secondary water.

An important component of St. George's conservation plan is to raise residents' awareness of their water usage by providing real-time water usage information. This may be accomplished through grant funding from the WaterSMART Water and Energy Efficiency Program. This funding could enable the City to implement AMI at all water connections within its service area. The AMI could be paired with a user interface that would provide real-time water use data, enabling customers to better understand and manager their water use. In addition, the AMI system could provide water users a real-time alert of potential water leaks. This proposed AMI system would enhance the effectiveness of the City's Demand Management Program and customer outreach efforts.

As the second driest state, Utah recognizes the importance of using our precious water resources in a responsible manner. The ability for St. George to continue to grow and provide jobs and housing is

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Congress of the United States
House of Representatives
Washington, DC 20515-4402

CHRIS STEWART
2ND DISTRICT, UTAH

PERMANENT SELECT COMMITTEE ON INTELLIGENCE

COUNTERTERRORISM, COUNTERINTELLIGENCE, AND COUNTERPROLIFERATION SUBCOMMITTEE

RANKING MEMBER
STRATEGIC TECHNOLOGIES AND ADVANCED RESEARCH SUBCOMMITTEE

COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEE ON
INTERIOR, ENVIRONMENT, AND RELATED AGENCIES

SUBCOMMITTEE ON
FINANCIAL SERVICES AND GENERAL GOVERNMENT

dependent upon its capacity to monitor and use its water resources in an efficient manner. Securing grant funds for the installation of AMI meters would support St. George in reaching its water conservation goals, maintaining the ability to provide jobs and housing, and continuing to welcome the many out of state visitors to our region.

Thank you for your consideration.

Sincerely,

Michael S. Lee
United States Senator

Mitt Romney
United States Senator

Chris Stewart
Member of Congress

John Curtis
Member of Congress

WASHINGTON COUNTY
WATER
CONSERVANCY
DISTRICT

July 13, 2022

The Honorable Maria Camille Calimlim Touton
Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington D.C. 20240-0001

Re: **WaterSMART: Water and Energy Efficiency Program, City of St. George Water Services Department Advanced Metering Infrastructure Program**

Dear Commissioner Touton:

I am writing in support of St. George City's WaterSMART: Water and Energy Efficiency Program grant application. St. George is one of the fastest growing cities in America and is currently dependent on a single, drought-prone water supply. The city currently provides drinking water to approximately 100,000 residential customers as well as various commercial, industrial, and institutional users.

Grant funding from the WaterSMART: Water and Energy Efficiency Program will allow the city to install Advanced Metering Infrastructure (AMI) at all water connections within its service area. The AMI will be paired with a user interface that provides real-time water use data, enabling customers to better understand and manager their water use. In addition, the AMI system will provide water users a real-time alert of potential water leaks. The AMI system will increase the effectiveness of the city's demand management program and customer outreach efforts. Through customer water use engagement and early leak detection, the city will reduce its overall water consumption.

St. George's proactive water conservation efforts, including the implementation of AMI, will benefit the city as well as the neighboring communities who share the regional water supply. I respectfully request the grant be awarded to St. George City.

Thank you for your consideration.

Sincerely,

Zach Renstrom
General Manager

Official Resolution

RESOLUTION NO. 2022-07-001R

A RESOLUTION BY THE CITY COUNCIL OF THE CITY OF ST. GEORGE, UTAH, IN SUPPORT OF THE FUNDING AND IMPELMENTION OF ADVANCED METERING INFRASTRUCUTRE (AMI) THROUGHOUT THE CITY AS OUTLINED IN THE WATER SERVICES DEPARTMENT'S WATERSMART APPLICATION

WHEREAS the City of St. George owns, operates, and maintains a Water Utility (Utility) that provides drinking water for over 100,000 residents; and

WHEREAS the utility meter reading data collection and billing procedures for water distributed to residents uses outdated practices and inefficient methods; and

WHEREAS the City of St. George recognizes that Advanced Metering Infrastructure (AMI) promotes water conservation by identifying customer service leaks in a timely manner and by providing real-time water use data to it's customers; and

WHEREAS the City of St. George City Council has reviewed the application for funding under the Bureau of Reclamations' WaterSMART grant program.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ST. GEORGE, UTAH, as follows:

1. The St. George City Council hereby supports the application submitted to the Bureau of Reclamation for funding under the WaterSMART Grant Program.
2. If awarded the funds, the City of St. George will work with the Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement.
3. The City of St. George commits to contribute the funding specified in the funding plan of the WaterSMART application.
4. The resolution shall take effect immediately upon passage.

PASSED and APPROVED this 14th day of July 2022.

ST. GEORGE CITY:

Michele Randall, Mayor

ATTEST:

Christina Fernandez, City Recorder

APPROVED AS TO FORM:
City Attorney's Office

Jami Brackin, Deputy City Attorney

OFFICIAL SEAL
City of St. George
EST. 1862
STATE OF UTAH

VOTING OF CITY COUNCIL:

Councilmember Hughes	aye
Councilmember McArthur	aye
Councilmember Larkin	aye
Councilmember Larsen	aye
Councilmember Tanner	aye