Town of Marana: Advanced Metering Infrastructure (AMI) Water Meter Replacement Program

Grant Application Prepared for:

US Department of the Interior- Bureau of Reclamation

WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2024 and 2025

Notice of Funding Opportunity No. R24AS00052

Applicant:

Town of Marana
Water Department
Asia Philbin
Project Manager
11555 W. Civic Center Drive
Marana, Arizona 85653
aphilbin@maranaaz.gov
+1 520-382-2570

MARANA AZ
WATER

February 2024

This page left blank

Table of Contents

Tables

Figures

Appendices/Attachments

TECHNICAL PROPOSAL – EVALUATION CRITERIA

D.2.2.2.3 EXECUTIVE SUMMARY

Date: Due Date: February 22, 2024

Applicant: Town of Marana Water Department
11555 W. Civic Center Drive
Marana, Arizona 85653
Pima County
Asia Philbin, Water Resources Administrator
Email: aphilbin@maranaaz.gov
Phone: 520-382-2570

Applicant Type: Category A

The Town of Marana Water Department (Town or Marana Water) is a municipal water and wastewater service provider with nearly 12,000 metered water services and over 8,000 sewer connections. The Marana Water service area is within the Tucson Active Management Area (AMA), an AMA designated by the Arizona Department of Water Resources for active management of groundwater resources. Water conservation has always been an important AMA management tool and is increasingly vital due to long term drought and climate change. The proposed project will improve water reliability through strategic long-term reductions in per capita water demands. The project will replace approximately 2,543 meters for existing services in the Marana Water service area as part of a larger meter replacement program that began in 2018. Since beginning its transition to Advanced Metering Infrastructure (AMI) in 2018, Marana Water has installed more than 4,400 meters (upwards of 37%) of its current total connections with AMI meters using cellular endpoints for new and existing customers. In addition, utility-facing analytic software and a customer portal were implemented to complement the AMI capabilities. Marana Water is working toward a multi-year program goal to have 100% AMI-capable meters in its system. This will require replacement of approximately 7,600 meters. These meters are read once per month using drive-by radio technology for Automated Meter Reading (AMR) meters and manual reads for meters that were installed before Marana had adopted its previous program for AMR technology. Completion of the project will improve the accuracy and resolution of usage data, consolidate meter reading into one consistent fully automated process for greater efficiency, and increased the benefit and efficacy of the AMI. The replacements for the proposed project are estimated to save 92.60 acre-feet per year (AFY) and to hasten efforts to provide the same level of service to all customers while increasing the utility's efficiency, water reliability and sustainability. Key benefits include:

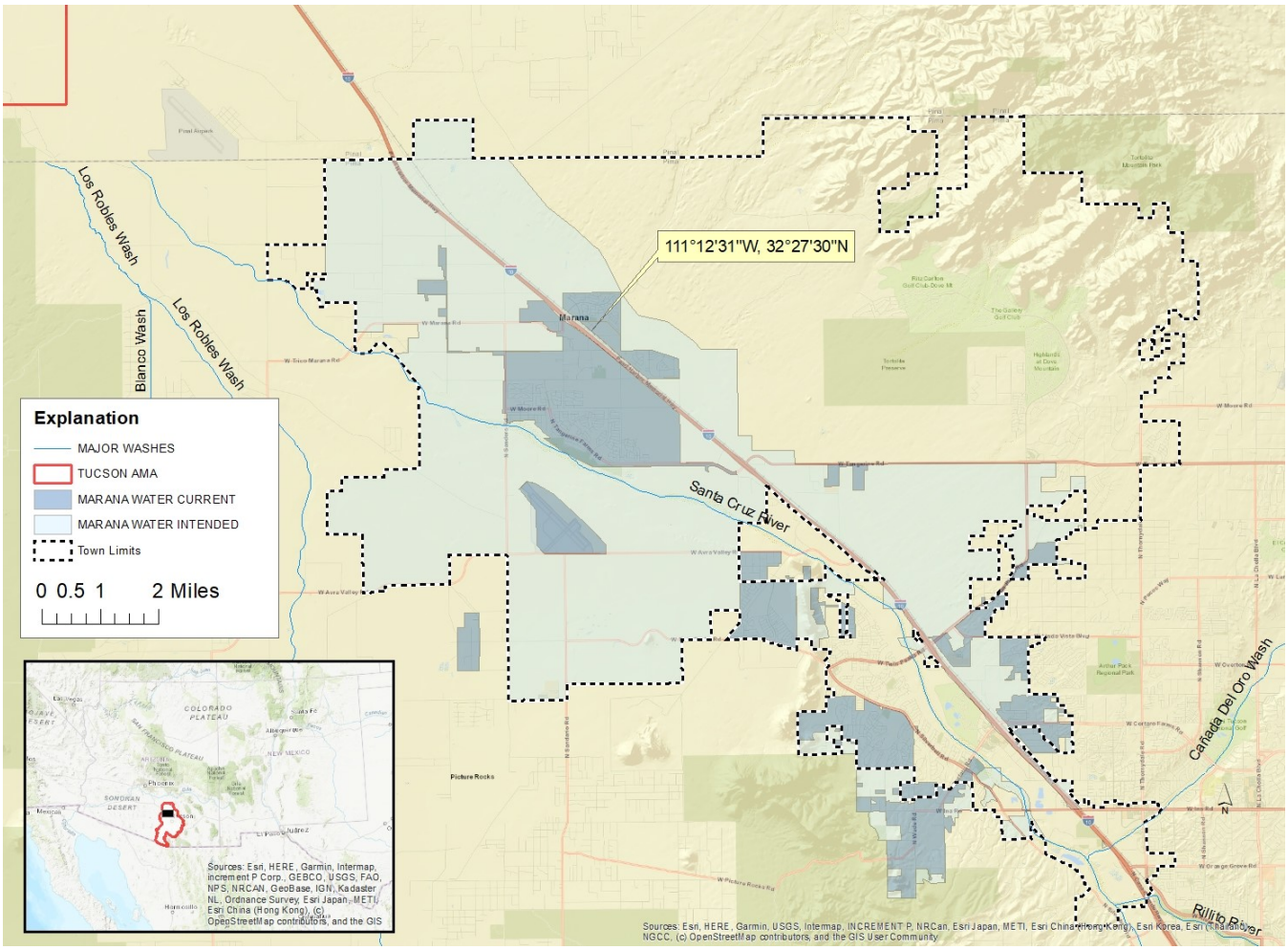
- Water savings of 92.60 AFY (1,852 AF over the 20-year lifecycle)
- Improved reliability and sustainability through strategic long-term reductions in per capita demands
- Increased efficiency in data collection
- Greater understanding of customer use patterns
- Customer engagement and increased customer water conservation

Project Schedule: The proposed start date for this project is Jan 1, 2025 with an anticipated completion time of 2 years and anticipated end date of December 31, 2026.
Federal Facility: This project is not located on a federal facility.

D.2.2.2.4 PROJECT LOCATION

The new AMI meters will replace existing meters in Marana Water's service area. Marana Water's service area is located in Pima County, Arizona, centered at latitude 32-27'30"N and longitude is 111-12'31"W. The intended service area covers approximately 189 square miles within the Santa Cruz Watershed, including parts of the Upper Santa Cruz, Lower Santa Cruz, and Brawley Wash Sub-Watersheds, within the Tucson Active Management Area (AMA) groundwater basin..

Fig. 1 Marana Water Service Area

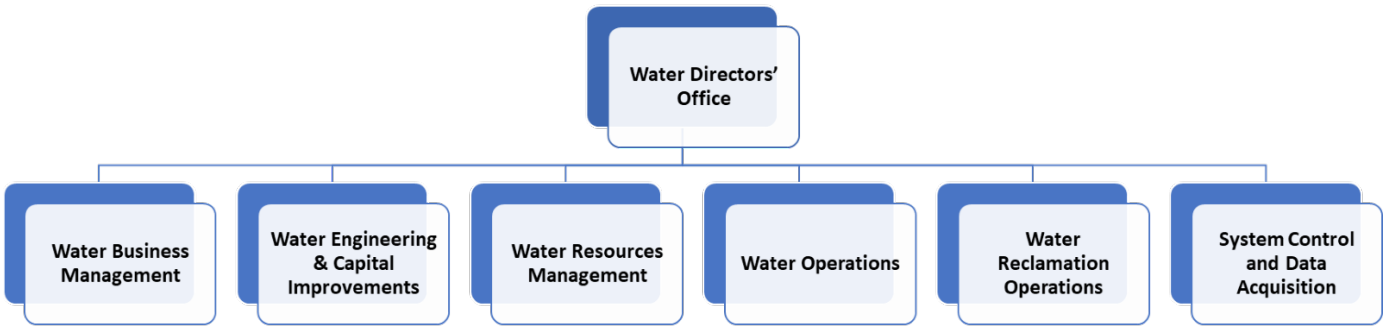


D.2.2.2.5 PROJECT DESCRIPTION

Background and Approach

The Town of Marana Water Department (Town or Marana Water) is a municipal water and wastewater services provider with a staff of approximately 50 people, working under the direction of the Marana Water Director.

Fig. 2 Marana Water Department Organizational Chart



The Water Operations division is responsible for operating and maintaining seven separate community water systems within its service area in the Tucson Active Management Area (AMA), an AMA designated by the Arizona Department of Water Resources for active management of groundwater resources. The Tucson AMA is one of 5 areas designated by the Arizona Department of Water Resources as areas with heavy reliance on groundwater. In total, the utility's service area population is approximately 30,000 people, and the potable water distribution system has over 11,650 individually-metered service connections. Over the last ten years, the service area has grown significantly and is one of the fastest-growing cities in Arizona.

Since beginning its transition to Advanced Metering Infrastructure (AMI) in 2018, Marana Water has installed more than 4,400 meters (upwards of 37%) of its current

total connections with AMI meters using cellular endpoints for new and existing customers. In addition, utility-facing analytic software and a customer portal were implemented to complement the AMI capabilities. The utility has approximately 7600 legacy non-AMI meters remaining to be replaced under the program. The proposed project, with grant funding through the WaterSMART Water and Energy Efficiency Grants program would allow Marana to accelerate completion of its goal of 100% AMI. Funding this project would allow Marana Water to replace aging meters at 45% faster than without federal funding.

The AMI Meter Replacement project will replace approximately 2,543 residential water meters (5/8” sized meters). Water Operations certified operators will remove and replace existing legacy meters with new AMI meters and cellular endpoints. Marana Wate has implemented the Beacon/Badger AMI software platform and activated the customer portal, with pilot testing by a few select customers.

The Marana Water Meter Replacement project includes replacing 2,543 existing meters with new AMI compatible water meters and endpoints. Customers will have access to Beacon’s Eye On Water customer portal where customers can monitor their water use online and receive automated leak alerts through Apps they download to their phones.

AMI Program Approach and Meter and Cellular Endpoint Replacements

When Marana Water began its AMI Program in 2018, the utility compared and evaluated AMI options and selected the Beacon Badger System. The Beacon software provides a data store, with analytics and portals to automate the information collected from the Badger meters through Orion Cellular endpoints. Marana currently utilizes the E-Series Ultrasonic SS (NSF-61-372) Badger meters with Orion Cellular Endpoints. Cellular endpoints work in tandem with Badger and cell providers M2M, to provide the network for automated reading capabilities and two-way communication. Using existing cellular

Fig. 3 Badger meter with Orion Endpoint

networks through the provider provides flexibility to expand the AMI throughout the utility service area and avoids additional infrastructure requirements (such as radio towers for transmitting meter reads). With the Beacon platform in place and confirmed cellular coverage over its service area, the remaining challenge to achieve Marana's goal for 100% AMI is meter replacement. The proposed project will hasten Marana's progress toward this goal. The project has the following major tasks:

- **Task 1: Identify meters to be replaced:**
  As of the filing of this grant application, Marana Water has identified 6,979 existing legacy meters to be replaced. Over the course of the last five years, Marana Water staff have installed more than 4,443 AMI meters. Roughly half have been new service installations (the Town and Marana Water's service area are growing rapidly) and half have been replacements for older non-AMI meters. Replacements have been limited to available budget. Under its current rate structure, Marana Water is budgeting $300,000 per year for meter replacements. With current meter costs, this equates to about 692 AMI meters per year (for 5/8" services). With the proposed WaterSMART grant funding, Marana Water would be able to hasten its program, completing approximately 1,272 meter replacements per year. Marana Water management and supervisors have assessed that they can accommodate this increased workload for this two-year project and plan to implement the project using existing staff and resources.

- **Task 2: Procure replacement meters**
  To procure the new AMI meters, the Marana Water Operations Manager works with the Marana Procurement Officer to determine that the purchase meets all requirements and complies with all state and federal regulations. The Town issues a Purchase Order (PO), which allows Marana Water to order and purchase the meters from the vendor. If the proposed project is awarded, Marana Water will issue a specific PO, to track meters purchased solely with the federal and matching funds proposed for this project. Due to supply chain issues and Marana Water's experience with excessive lead times, the utility anticipates up to 12

months for meter procurement. To ensure that the project stays on schedule, Marana Water will initiate the Procurement process as soon as it is notified Reclamation intends to award the grant.

- **Task 3: Meter and Endpoint Replacement**

  Marana water meters are typically located on or near the customer property line and between the street and sidewalk. To replace meters, Marana Water staff perform the following steps:

  - Operations staff receive meters from vendor into warehouse and populate SpryPoint meter inventory with information on received meters
  - Billing services staff establish workorders for replacements through SpryPoint and Cartegraph
  - Billing and operations staff notify customers about replacements
  - Operations staff clean meter boxes of dirt and debris
  - Operations staff remove the old meter and replace with the new meter
  - Operations staff connect cellular endpoints to the meter with an inline connector and activate meter in network
  - Operations and billing staff confirm meter information in SpryPoint
  - Operations staff restore water service
  - Operations and billing staff close out workorders in SpryPoint and Cartegraph
  - Billing staff verify continuous reporting through Beacon system

  Billing Specialists schedule and monitor workorders and track information for billing and customer communications. Meters are replaced by certified water distribution system operators and replacements are inspected by the Water Distribution Supervisor.

  The work performed is for replacements that do not require additional clearances. The installation of the replacement meters does not involve ground disturbance, and thus, this project will qualify for a categorical exclusion under the National

Environmental Policy Act (NEPA). The water meter replacements performed under this project does not require any additional permits.

- **Task 4: Project management and reporting**

  Marana Water will track project schedule and budget to ensure successful project delivery. Marana Water staff will complete regular reporting requirements including financial reports, interim performance reports, and a final performance report.

  Marana Water will use the following systems to track and manage the project:

  - SpryPoint software which will generate a work order for the installation of each new meter. Once the operator has installed the new meter, they will use SpryPoint's mobile application to send that information to the billing database. SpryPoint also tracks inventory of meters not yet installed.
  - Cartegraph software will be used to keep track of the labor utilized for this project. Each of these tools will ensure accurate tracking of resources and progress for this project that can be used for reporting purposes.
  - The Town's Munis software provides financial tracking of POs, invoices and payments.
  - The Beacon platform will be used to track water use through the customer meters.

- **Continual Program Advancement: Meter Data Management and Customer Portal**

  The Beacon software interface allows Marana Water to perform billing procedures, monitor meters for water use anomalies and review system for overall meter and communication health. ***Eye On Water***, the customer-facing portal that is included in Marana Water's Beacon platform allows registered customers to monitor their own water use at the resolution of 15-minute increments. Customers can also automate leak alerts to stop leaks soon after they start and reduce the potential for high water use surprises and high water bills. With front and back-end capabilities, the platform provides a number of ways to encourage water conservation. Customer participation will be achieved through

outreach and promotion via website, social media, newsletters, the news media, and direct notifications.

Marana currently pays approximately $10 per year for each AMI meter, so, in round numbers, this $1.1M project for approximately 2,500 new meters will increase Marana's annual service cost by approximately $25,000. The increased operating costs are budgeted annually through the Town's budget process and Marana Water has a line item that programs increases for this purpose.

D.2.2.2.6 EVALUATION CRITERIA

E.1.1. Evaluation Criterion A-Quantifiable Water Savings

1) Describe the amount of estimated water savings.

Marana Water anticipates a total annual water savings of 92.6 acre-feet per year when the proposed project is completed. The utility expects to see savings from increased customer awareness and early leak detection from AMI meter replacements at approximately 2,543 households.

Table 1. Estimated Water Savings

Source of Water Savings	**Volume of Water Savings**
Water savings from customer awareness and ability to monitor their water use	45.77 AFY
Water leak savings	46.83 AFY
Total	**92.60 AFY**

Water savings will come from increased conservation due to customers' ability to track and monitor their consumption and through timely alerts, since the extent of water lost from a leak is a direct function of the time it takes to identify, locate, and repair the leak. The new AMI meters will enable Marana Water and its customers to identify leaks sooner, thus repair leaks sooner, thus save more water. In addition, stimated water savings associated with AMI-based metering technology can be as much as 10% according to

The Behavioralist's January 2022 report, "Increasing Consumer Benefits & Engagement in AMI-Based Conservation Programs" prepared by AWWA..

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

The water that will be conserved is currently going to households and is an unintentional use by occupants. According to the US Environmental Protection Agency, the average household's leaks can account for nearly 10,000 gallons of water wasted every year and ten percent of homes have leaks that waste 90 gallons or more per day.

Table 2. Potential Losses from Water Leaks

Malfunction	Leak Rate	Water Loss	Estimated Cost of Water Loss
Leaking Toilet - Small (e.g., worn flapper)	0.02 gpm	860 gallons per month	Up to $10 per month
Leaking Toilet - Medium (e.g., misaligned flapper)	0.2 gpm	8,600 gallons per month	Up to $95 per month
Leaking Toilet - Large (e.g., stuck fill valve)	3.0 gpm	4,300 gallons per day	Up to $1,400 per month
Drip Irrigation Malfunction	1.0 gpm	43,200 gallons per month	$5,700 per year
Unattended Water Hose	10.0 gpm	5,400 gallons per day	$60 per day
Broken Distribution Line For: One Night One Day One Week One Month	 15.0 gpm 15.0 gpm 15.0 gpm 15.0 gpm	 8,100 gallons 21,600 gallons 151,200 gallons 648,000 gallons	Up to $7,200 per month
Tempering Water Line on a Steam Sterilizer Stuck in the On Position	2.0 gpm	86,400 gallons per month	$11,500 per year
Stuck Float Valve in a Cooling Tower	5.0 gpm	216,000 gallon per month	$29,000 per year

As shown in the table, and as Marana Water staff has observed first-hand in discussion with its customers experiencing unexpected high use, the most common causes of water loss on the customer side of the meter are typically toilet leaks and irrigation systems. When a leak occurs from inside the home, as with a leaking toilet, the lost

water will enter the sewer system. Marana Water operates a wastewater reclamation facility which treats its wastewater and sends it to recharge basins. So, indoor losses can technically be reused because when the water reenters the system as recharge credits. Conversely, when a leak occurs outside the home or business, as with an irrigation leak, the lost water will seep into the ground. This water cannot technically be reused because it is not accounted for as recharge credits, nor does most typical irrigation loss reach the groundwater table. In the arid southwest, with depths to groundwater greater than 100 feet, irrigation losses are typically lost to evaporation.

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

Currently, water losses from leaks in a customer's piping, pools, or irrigation systems, or from excessive irrigation (outdoor losses), seep into the ground. Water losses from leaks found in the home such as worn toilet flappers, dripping faucets, and other leaking valves (indoor losses) typically flow to the customer sewer or septic system. The most common causes for water loss come from toilet leaks and irrigation leaks. Based on its delivery data and sewer return flow information, Marana Water estimates that 60 percent of customer use is for indoor purposes.

- 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?

Water lost inside the home typically would become sewer flows. Marana Water utilizes treated effluent to recharge the aquifer, technically returning the lost water to the system. However, it is preferable to avoid the original water waste.
Water lost outside the home will seep into the ground. This water cannot be reused.

- 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?

Lost water that makes its way through the reclamation facility and into Marana Water's recharge basins can benefit the utility by continuing to be accounted for as part of its

water supply (even though the first use of water was wasted in the home). Marana Water does not rely on this reuse. Lost water that seeps into the ground will not provide additional habitat for fish or animal species.

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.
In addition, note: 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.

Behavioral opportunities through AMI meter replacement and Eye on Water Portal

Studies have shown significant water savings from the implementation of AMI customer portals. A 2022 report published in the Behavioralist for the American Water Works Association Increasing consumer Benefits & Engagement in AMI-Based Conservation Programs, found that customers who signed up for AMI customer portals decreased their daily water use between 6.3% to 12%. Marana chose an overall conservative projection of water savings, assuming **6%** reduction through use of the AMI customer portal.

Table 3. Water savings from upgrades to AMI

Households / Household equivalents upgraded over 2-year project	2,543
Avg Annual Water Use (AFY) Per Household in Marana Service Area[1]	0.3
Avg % Savings	6%
Total annual savings (AFY)	**45.77**

Water Leaks – earlier detection and correction

Leak notifications are an essential part of the Beacon platform. The EPA states that *"the average household's leaks can account for nearly 10,000 gallons of water wasted every*

[1] Marana's Water Facilities Infrastructure Improvements Plan, establishing 0.3 acre-feet per year of annual household use is available on the Town of Marana Website at https://www.maranaaz.gov/impact-fees.

year and 10% of homes have leaks that waste 90 gallons or more per day". Marana estimates that leaks will be reduced by **60%** as a result of customer use of the portal. Although estimates of water savings can be higher, the utility is projecting savings using a moderate assumption of early leak detection. Presently, Customer Service staff contact approximately 150 customers per month directly, when they determine through Beacon that a customer may have a continuous leak or extreme high use is occurring. Customer use of the Eye On Water portal will enable customers to track their own use on a more frequent and automated basis, catching leaks earlier and catching more leaks (even those that may not reach the level of excessive). Marana will increase promotion of the customer portal through digital media, at its events, and in customer communications to increase portal participation and the use of automated leak alerts.

Table 4. Water leak savings

Households / Household equivalents upgraded over 2-year project	2,543
Avg % Savings with meter replacement	60%
Avg household leak per year (gallons per household)	10,000
total annual savings (gallons)	1,528,000
Total annual savings (AFY)	**46.83**

4) Please address the following questions according to the type of infrastructure improvement you are proposing for funding.

.

(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 and when existing individual user meters are replaced with advanced metering infrastructure (AMI) meters. 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.

The average annual water savings was determined using the number of non-AMI meters replaced with AMI meters (2543 meters) and assumptions to estimate 1) the impact of access to regular usage information on the associated customer behavior and 2) the

reduction in leak duration based on customers' and utility's use of leak alerts. Assumptions to project the first savings estimate are based on a 2022 report published in the Behavioralist for the American Water Works Association Increasing consumer Benefits & Engagement in AMI-Based Conservation Programs, which found that customers who signed up for AMI customer portals decreased their daily water use between 6.3% to 12%. Marana Water assumed a 6% decrease and used the annual household use figure adopted in its most recent infrastructure planning document, i.e. 0.3 acre-feet per household per year (the Marana Water Infrastructure Improvement Plan document is available online: https://www.maranaaz.gov/impact-fees). The total estimated savings for this first projection is 45.77 acre-feet per year. For the second savings estimate, Marana Water assumed a 60% reduction in losses from customer leaks due to early detection through Beacon system leak alerts to the utility and customers. This estimate also uses the EPA estimated average for household leaks (10,000 gallons per household per year) and the number of AMI meter replacements (2543) to calculate the estimated savings of 46.83 acre-feet per year.

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

Marana Water has a water loss control program for its distribution system and maintains losses (real + apparent) below 5%. The proposed project for reductions by individual users complements the utility efforts to conserve through its water loss control program. It has been the utility's experience in its own water loss control program that significant reductions are possible and enabled with increased awareness and access to data. For example, over the past decade, regular monthly review of production and deliveries data has enabled the utility to bring its lost and unaccounted for water from above 10% to just below 5%.

Estimates for individual users reducing their use have been determined using a combination of data from those individual users (Marana Water's calculated average household use) and factors on average savings per household found in industry studies.

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.

For this proposed project, the utility will install end-user water meters for residential customers. The utility has not yet implemented the customer portal at scale so does not have its own data to evidence the potential savings, nor have regional utilities fully implemented AMI solutions to provide proxy data. Marana Water is relying on broader studies that provide estimates for behavioral savings. For leak detection savings, Marana is relying on both independent studies compiled by EPA and its own experiences. For example, Marana Water's billing specialists regularly contact customers based on the leak detection capabilities of the Beacon platform. For years, they have performed this service based on 'high reads' flagged in the monthly billing report and have reason to expect significant savings will come from earlier detection, as customers have been requesting that service for years. In addition, Marana provides a well-used forgiveness program for customers with extraordinary leaks that go undetected and who experience bills they can't afford. While this program provides some relief, earlier leak detection would save water while avoiding the higher bill entirely (forgiveness provides only partial relief). For these anecdotal reasons, Marana anticipated water savings for its customers, and is relying on industry studies providing average savings per household to estimate actual savings for its customers. As part of the estimate, Marana Water is using actual averages for its customers' use, based on usage data that informs its Infrastructure Improvement Plan (available online: https://www.maranaaz.gov/impact-fees).

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

Marana Water will install Badger Meters' E-Series Ultrasonic SS (NSF-61-372). These meters are being used with the Beacon Advanced Metering Analytics solution software suite which the Town has implemented for use by utility staff and use is established for future use by customers through the online customer portal ***Eye on Water***. The meters installed for this project will be 5/8" residential meters and will include the cellular endpoint

necessary for portal data automation at subhourly resolution. The quantities for the proposed project are shown in Table 5.

Table 5. Devices to be Installed

Device	Manufacturer	Model	Quantity
Meter	Badger	E-Series Ultrasonic SS (NSF-61-372) 5/8 inch	2,543
Cellular Endpoint	Orion	HR-E 11 CE" PIT ORION ASSY ONLY W/ DP	2,543

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

Water savings will be verified by comparing water consumption data before the replacement and after the replacement. The data before replacement is at monthly resolution, so comparisons will be at that scale. A full year of data after replacement is likely required to provide meaningful analysis, so, assuming meter replacements will be performed at a steady rate over the two year project, analysis of roughly half of the replacements will provide good information upon completion and the remaining comparisons will be most meaningful one year after the project completion. Data will be assessed in aggregate to determine statistically significant differences and select individual replacements will be used for case-study.

Leak monitoring reports from the Beacon software will be used to track the average duration of leaks and determine whether the AMI meter replacements have an impact on the average duration of leaks. Eye On Water registration and participation will also be quantified and use patterns of registered users will be compared to use patterns of those who do not register for the portal.

E.1.2. Evaluation Criterion B-Renewable Energy

The proposed project also has implications for energy efficiency, which are described below.

E.1.2.2 Subcriterion B.2—Increasing Energy Efficiency in Water Management

Up to **6 points** may be awarded for projects that address energy demands and reduce greenhouse gas emissions by retrofitting equipment to increase energy

efficiency and/or through water conservation improvements that result in reduced pumping or diversions.

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

- 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.

This project will result in energy savings from the embedded energy that would have been required to produce and deliver the water to customers. In 2022, Marana's embedded energy, calculated as the total energy consumed by its wells and distribution system pumping equipment divided by the total water produced, was 948 kilowatt hours per acre foot, on average, for its entire service area. Based on this figure, and an annual water savings of 92 acre feet, the estimated energy savings is approximately 87,216 kilowatt hours per year.

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

The annual energy savings of 87,216 kWh/yr, as described above, is anticipated to continue indefinitely. In addition, this project brings Marana Water closer to its goal for 100% AMI meters, where monthly meter drive-by radio and manual reads will no longer be necessary. This will result in significant reduction of drive time, gasoline, and greenhouse gas emissions.

- 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?

This project will increase conservation and reduce water demand. A reduction in water demand will reduce pumping to distribute the water since this equipment operates on a demand basis, refilling reservoirs as water levels fall (due to demand). If the reservoir levels start decreasing more slowly due to demand reduction, the pumps will need to run fewer times and/or for shorter durations, which will reduce the amount of energy used. By reducing the amount of water produced, the pumping requirements and

energy usage will also be reduced. This reduction is projected to be approximately 87,216 kWh per year, from an average reduction across all pumping equipment. Typical pumps in Marana Water's wells and distribution system pumps have motors ranging from 5HP to 150HP (and larger for fire flow pumps).

- 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 originates from the point of diversion, from the aquifer, the source of all water in the Marana Water distribution system.

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

No

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

Eventually. This project will lead to quicker implementation of the program that will eliminate drive-by monthly meter reading.

- 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).

N/A

E.1.3 Evaluation Criterion C-Other Project Benefits

Resilience and Sustainability Benefits. Will the project address a specific water and/or energy sustainability concern? Please address the following:
• Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:
  - Describe recent, existing, or potential drought or water scarcity conditions in the project area.
  - Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?
  - Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate informed analysis, if available).

The Town of Marana, like many municipalities across the southwestern United States, has been in drought for a majority of the past two decades. A Drought Emergency Declaration for the state of Arizona (PCA 99006) has been in effect since 1999. In 2007

the declaration was continued with Executive Order 2007-10. In addition to the actions of the original declaration, the 2007 Executive Order also requested assistance from the federal government for the appropriate federal disaster programs, ordered state agencies to implement their water use reduction plans and assist in drought planning efforts across the state, urged water facilities to develop and implement more aggressive drought and conservation plans and monitor water use; and called upon citizens, businesses, schools, institutions of higher learning, local governments and federal agencies to increase water conservation efforts. The 2007 Executive Order will remain in effect until the Governor rescinds it.

The Town is experiencing the negative impacts of long-term local and regional drought in the Colorado River Basin, including cuts to its imported water supplies. In August 2021, the US Secretary of the Interior declared the first ever Tier 1 shortage on the Colorado River, to begin in 2022. In August 2022, the first ever Tier 2a shortage on the Colorado River was declared for calendar year 2023. These declarations of shortage equate to curtailment of Central Arizona Project (CAP) water deliveries. To date, Marana Water's CAP supply has been reduced by a several hundred acre-feet. While long-term drought does not automatically equate to water shortage, it is critical for water providers to be prepared for this possibility by having a plan in place to mitigate shortage and avoid disruption of water service.

The National Oceanic and Atmospheric Administration (NOAA) State Climate Summary 2022 for Arizona reports the beginning of the 21st century being the warmest period on record in the history of the state. The Climate Assessment for the Southwest's (CLIMAS) three-month seasonal forecast for August through October 2022 shows temperatures ranging from above average to much above average throughout Arizona, with below average precipitation for most of Arizona. Climate change impacts include increased average surface temperatures, decreased average annual precipitation, increased surface evaporation, reduced surface water flows due to runoff and snowpack impacts, and increased weather variability including monsoons. These impacts can result in more intense and prolonged drought conditions and can also negatively affect both water quality and air quality.

Both climate change and drought can have negative effects on the availability and quality of a community's water supply, and climate change may prolong or intensify drought, but it is possible for a drought to improve despite ongoing climate change. For example, if observed precipitation increases enough to change the US Drought Monitor's designated drought intensity rating, then the stage of drought may de-escalate, even though climate change has not ceased. It should also be acknowledged that a hotter and drier climate is the new normal against which drought is measured. Updated every ten years, the US Climate Normals are 30-year periods of climate data used as a basis for judging how climate conditions compare to what is normal for a given location in today's climate. The new US normal (1991-2020) is drier in the southwest and warmer almost everywhere in the US.

An additional distinction is that of drought and water shortage. Given sufficient planning and foresight, a community undergoing a prolonged drought can avoid water shortage through improvements in supply capacity and distribution, and adjustments in demand through community responsiveness. Consistent public messaging about drought monitoring and water conservation can significantly decrease the effects of drought on a water supply in addition to affecting a quicker public response when needed.

The ADWR Drought Status webpage holds information about drought status, drought management, and drought resources. Drought status is updated on a weekly, monthly, and quarterly basis. The weekly update occurs every Thursday, automatically updating the U.S. Drought Monitor map of Arizona. The monthly update occurs at the end of each month, with a web-based, short-term drought status update based on the past four weeks of U.S. Drought Monitor maps. This monthly update includes an explanation of how drought conditions have changed over the preceding month. The quarterly update is a thorough long-term drought status report that is posted on the ADWR Drought Status webpage on the following schedule: in April (for January-March); July (for April-June); October (for July-September); and January (for October-December).

- 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.

This project will mitigate two energy issues related to meter reading, making Marana Water more sustainable and energy efficient. Firstly, older service meters that are not AMI-compatible require drive-by meter reads. This method of meter reading requires service trucks driving for miles to cover the service area, burning gasoline, and contributing to greenhouse gas emissions. This project will reduce drive-by-meter reads, significantly reducing drive time, reducing fossil fuel burning and greenhouse gas emissions. Secondly, the project also conserves water and therefore saves the energy embedded in this use.

- Please describe how the project will directly address the concern(s) stated above.

Though they are intertwined, drought and water shortage are not indistinguishable. A community undergoing a prolonged drought can avoid water shortage through effective planning and water resources management, improvements in supply capacity and distribution, and adjustments in demand through community responsiveness, which this project will address. Though Arizona has been in a declared drought since 1999, the Town has not experienced source water shortages in its potable water systems. This is largely due to the health of the naturally and artificially recharged aquifer from which the Town withdraws water for system supply. Customer conservation and reduced water demand as a result of this project will help achieve Marana Water and community goals for aquifer health and water reliability.

- 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?

This project will result in more efficient management of the water supply, at the utility and customer level. When customers can monitor their own water usage in real time, they can adapt their usage quickly and easily, allowing for more efficient water management and conservation due to customer engagement. The utility will also use the more accurate and higher resolution data to plan and manage with greater understanding of demand characteristics.

- 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.

- Indicate the quantity of conserved water will be used for the intended purpose(s).
- Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.

Water conserved from this project (92.6 AFY) will not be pumped and will remain in the ground as water supply for future use. Marana Water's distribution system is fed exclusively by water pumped from its wells. The wells are located throughout the water service area, in the interconnected and shared aquifers of the Tucson Basin and Avra Valley. The Town has a diversified water supply portfolio including naturally occurring groundwater and supplies used to recharge the aquifer: effluent (recycled water), long-term storage credits (LTSCs), and imported Colorado River water. The conserved water from this project will offset groundwater pumping which helps to address the shortages on the Colorado River and reduced CAP water deliveries.

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

N/A

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

There is frequent tension and litigation over water in the Colorado River basin. The water conserved from this project will result in more water remaining in the aquifer for future use for Marana Water customers and others sharing the aquifer. Customer engagement and high resolution data is also an important outcome of this project. This information helps the utility better plan and avoid conflict and lawsuits. This project will help Marana Water to continue to provide sufficient water supply while the utility and region are facing difficult negotiations and cuts to supplies.

Ecological Benefits. In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that result in ecological benefits, through this section and other sections above, consistent with the SECURE Water Act. Please provide information regarding how the project will provide ecosystem benefits, including the following:

- 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).

N/A

- 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, recreational benefits, etc.).

Due to increased customer conservation and reduced demand, water will remain in the system for longer periods, reducing groundwater pumping. This will provide greater sustainability and resiliency for the Town and its physically available water supplies that can be impacted by drought and climate change.

- Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?

The proposed project will not affect species status.

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

Note: Projects that are intended to improve streamflows or aquatic habit, and that are requesting $500,000 or more in Federal funding, must include information about plans to monitor the benefits of the project. Please describe the plan to monitor improved streamflows or aquatic habit benefits over a five-year period once the project has been completed. Provide detail on the steps to be taken to carry out the plan.

N/A

Climate Change: E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.

- Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?

This project will address climate change and increase resilience by helping Marana Water and its customers adapt to drought and shortage conditions on the Colorado River. This project will reduce water demand, adapting to climate change and increasing resilience in the face of water scarcity. Reduced demand will also allow Marana Water to preserve

its water resources in a more sustainable manner. Per its 2023 Drought Preparedness Plan Update, one of Marana Water's objectives is to increase its drought resilience through ongoing conservation efforts.

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

N/A

- Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?

The proposed project will help to mitigate air pollution by reducing gas-fueled vehicle mileage accrued in the process drive-by and manual read meters. This will reduce CO2 emissions.

- Does the proposed project include green or sustainable infrastructure to improve community climate resilience?

This project does not include infrastructure.

- Does the proposed project contribute to climate change resiliency in other ways not described above?

N/A

E.1.4. Evaluation Criterion D-Disadvantaged Communities, Insular Areas, and Tribal Benefits

E.1.4.1 Subcriterion D.1. Disadvantaged Communities

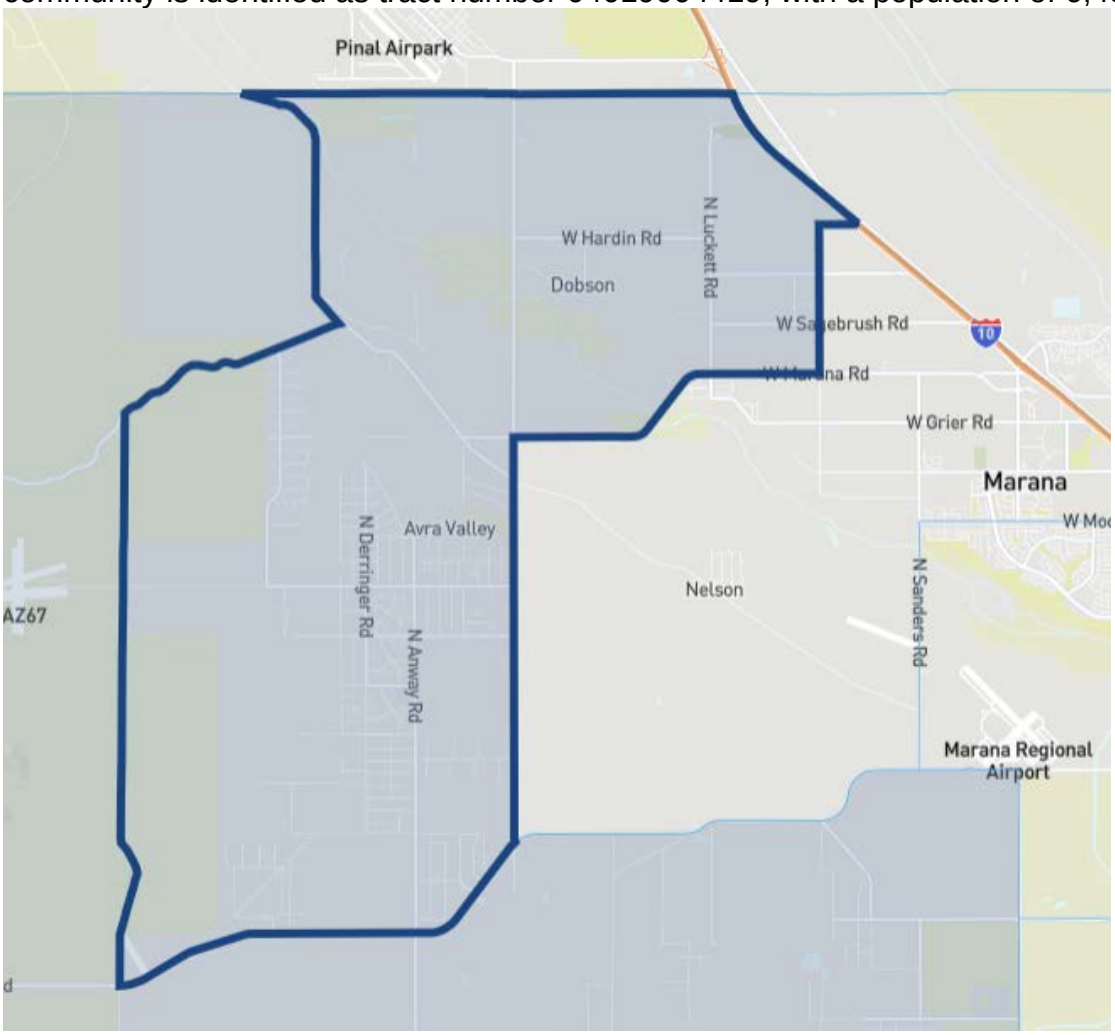
E.O. 14008 affirms the advancement of environmental justice for all through the development and funding of programs to invest in disadvantaged communities. This criterion, which is used to identify projects that advance the Justice 40 Initiative, includes all Federally recognized Tribes and Tribal entities, and any disadvantaged communities in insular areas (American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands) identified pursuant to the following criteria.

Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), available online at Explore the map Climate & Economic Justice Screening Tool (screeningtool.geoplatform.gov/ en/#17.59/36.63278/-105.181329) to identify any disadvantaged communities that will benefit from your project. The CEJST developed by the White House Council on Environmental Quality is a geospatial

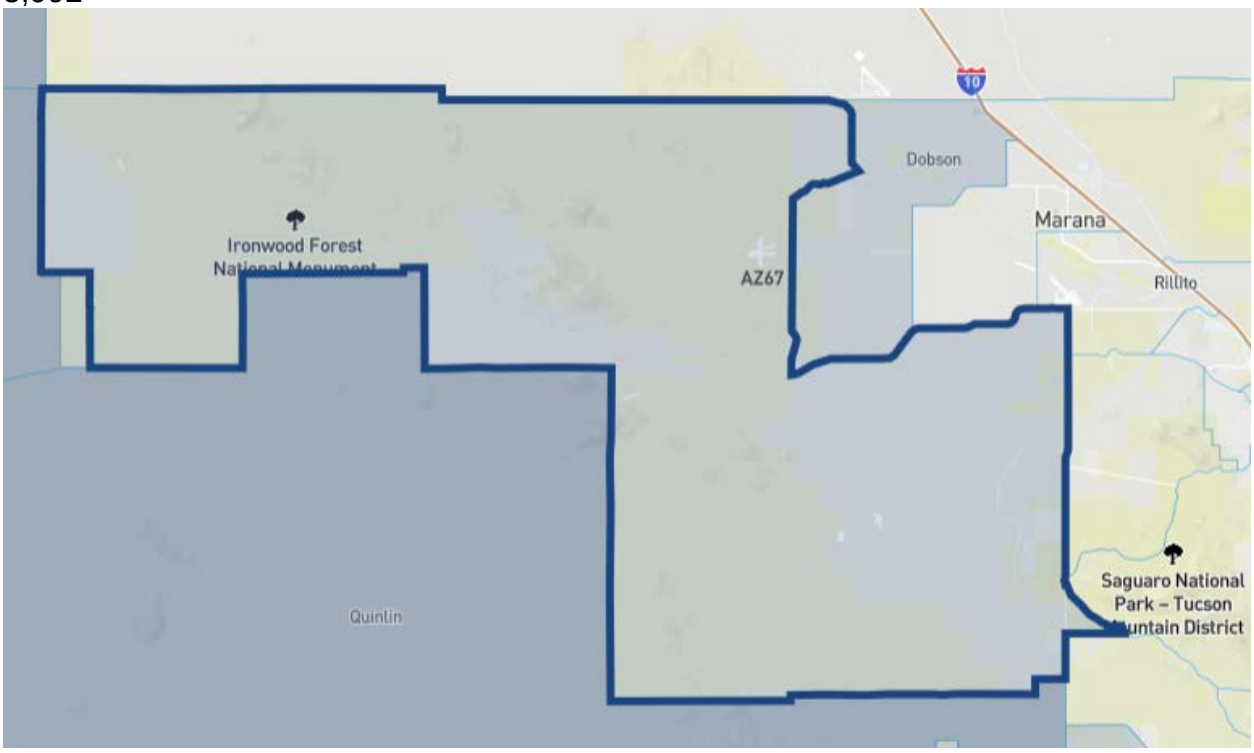
mapping tool that utilizes publicly available, nationally consistent data sets related to climate change, the environment, health, and economic opportunity to identify disadvantaged communities. In addition to identifying specific census tracts that are disadvantaged, the CEJST includes the lands of Federally recognized Tribes as disadvantaged communities. In addition, regardless of whether a Federally recognized Tribe has land, all Federally recognized Tribal entities are considered disadvantaged communities for the purposes of the Justice40 Initiative.[2]

- If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?

Using the Climate and Economic Justice Screening Tool, two disadvantaged communities were identified within the Marana Water current and intended service area. The first community is identified as tract number 04019004419, with a population of 6,486.



The second community identified is tract number 04019004425 with a population of 5,992



These two communities are considered disadvantaged because they met more than one burden threshold and the associated socioeconomic threshold. There are three burden thresholds met by these two communities that fall under the Climate Change category:

- Expected agriculture loss rate. Economic loss to agricultural value resulting from natural hazards each year. 99th and 98th percentile
- Projected wildfire risk. Projected risk to properties from wildfire from fire fuels, weather, humans, and fire movement in 30 years. 92nd and 93rd percentile.
- Low income. People in households where income is less than or equal to twice the federal poverty level, not including students enrolled in higher education. 80th and 70th percentile.

These disadvantaged communities within the Marana Water intended service area will benefit from this project through the stability of reliable water supplies. The water conserved through this project will enhance Marana's water supply allowing for continued health, safety, and prosperity for its residents. Furthermore, there are seven established Colonia neighborhoods within Marana: Honea Heights, Adonis, Berry Acres, Marana Estates, Marana Vistas Estates, Price Lane, and Yoem Pueblo. These Colonias are also characterized as being disadvantaged, typically defined by lack of potable water, adequate sewer and/or decent, safe and sanitary housing. Again, this project will help ensure a sustainable water future for these communities.

E.1.4.2 Subcriterion D.2. Tribal Benefits

The Department is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum, *Tribal Consultation and Strengthening Nation-to-Nation Relationships*, asserts the importance of honoring the Federal Government's commitments to Tribal nations. Address the following, if applicable:

- 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 proposed project will not directly serve and/or benefit a Tribe, increase water supply sustainability for an Indian Tribe or provide renewable energy for an Indian Tribe.

- Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?

The proposed project does not directly support Tribal-led conservation and restoration priorities,nor incorporate indigenous traditional knowledge and practices.

- 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, increased renewable energy, or economic growth opportunities? Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?

The proposed project does not directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits; nor does it directly support Reclamation's Tribal trust responsibilities.

E.1.5. Evaluation Criterion E-Complementing On-Farm Irrigation Improvements

Not applicable.

E.1.6. Evaluation Criterion F-Readiness to Proceed

Applications that include a detailed project implementation 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.

- Identify and provide a summary description of the major tasks necessary to complete the project. **Note: 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.**

Marana Water has been replacing its older water meters with the newer AMI meters for more than five years, so the utility is ready to implement the proposed project. The main change the proposed project will bring to utility operations is the pace at which the new meters are installed. The federal funding is 45% of the proposed project expense for purchasing the meters, and the utilty's match is a planned spend, with or without the project. So, the federal support would almost double the utility's replacements over the two years of the project. The main tasks associated with the meter replacements are:

1. Operations staff receive meters from vendor into warehouse and populate SpryPoint meter inventory with information on received meters
2. Billing services staff establish workorders for replacements through SpryPoint and Cartegraph
3. Billing and operations staff notify customers about replacements
4. Operations staff clean meter boxes of dirt and debris
5. Operations staff remove the old meter and replace with the new meter
6. Operations staff connect cellular endpoints to the meter with an inline connector and activate meter in network
7. Operations and billing staff confirm meter information in SpryPoint
8. Operations staff restore water service
9. Operations and billing staff close out workorders in SpryPoint and Cartegraph
10. Billing staff verify continuous reporting through Beacon system

Marana Water has accomplished these tasks for thousands of meters and is ramping up its communications for full implementation of the customer portal. The utility has recently competed a pilot program for engagement, including direct participation offerings through a Citizens' Water Academy.

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

There will be no permits required for this project.

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

There will be no engineering or design work performed specifically in support of the proposed project.

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

N/A

- Describe the current design status of the project. If additional design work is required prior to construction, describe the planned process and timeline for completing the design work.

There is no design necessary for this project.

- Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete). Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation regional or area office?

An estimated project schedule is shown below. The total project duration is two years. There is no timeline necessary for environmental and/or cultural compliance.

Task	Anticipated Duration	Anticipated Start	Anticipated End
Meter installation 50% complete	1 year	Jan 2025	December 2025
Meter installation 100% complete	1 year	Jan 2026	December 2026

E.1.7. Evaluation Criterion G-Collaboration

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?

There is widespread support for this project because the benefits are so great for every person. Not only does the project have the full support of the Town of Marana, but also the support of various entities outside of the Town leadership including non-profit organizations, educational programs, economic development and business entities, community associations, irrigation district and water users' associations, home builders' associations, county wastewater reclamation, and electricity providers. Letters of Support are attached in Appendix A.

- What is the significance of the collaboration/support?

The significance of the widespread support for this project is that it has no drawbacks. The project will benefit everyone, with no prejudice or partisanship. Entities with varying agendas and priorities can all agree that this project will benefit the Town. The pros are many and the only obstacle has been cost.
This project will be implemented without project partners; however, Marana Water often collaborates with other water providers on various projects that strive to ensure the sustainability and reliability of water supply both locally and regionally. All water providers benefit from reduced groundwater pumping.

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

This project could increase the possibility of future water conservation improvements by other water users. When other water utilities see the data and hear firsthand about the water and cost savings for both the utility and the customer, they will want to follow suit. Likewise, when customers can easily see their savings on the customer portal, they will be well incentivized to continue to increase water conservation and will likely spread the word to friends and neighbors.

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

This project will benefit multiple sectors. Marana Water's goal is to have AMI meters for all municipal and commercial users. All other sectors in the area will also benefit from increased conservation and water efficiency.

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

See Appendix A.

E.1.8. Evaluation Criterion H-Nexus to Reclamation

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider:

- Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?

Marana Water does not have a direct contract with Reclamation.

- If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?

Marana Water receives Reclamation water through a Municipal and Industrial sub-contract for Central Arizona Project/ Central Arizona Water Conservation District (CAP/CAWCD). A portion of Marana Water’s assured water supply is a Colorado River water allocation delivered by the CAWCD, a Reclamation contractor, via the CAP canal.

- Will the proposed work benefit a Reclamation project area or activity?

This project and all similar projects from water providers with a CAWCD contract will benefit the Colorado River System by using water efficiently. The proposed project will help the utility conserve its allocation of CAP water.

- Is the applicant a Tribe?

The Town of Marana is not a Tribe.

D.2.2.2.7 PERFORMANCE MEASURES

Marana Water will evaluate the benefits and capabilities of the ultrasonic meter and AMA platform by establishing key performance measures to quantify the project benefits. Marana Water will use the following performance measures to quantify and evaluate the performance of the new meters and Beacon platform.

Quantifiable Water Savings

- Demand reduction (behavioral). Project efficacy will require analysis of individual accounts within the distribution system to quantify reduction in water demand. Historical consumption data prior to AMI meter installation will be compared with consumption data after. The data will be used in aggregate for statistical analysis and individually for case-study purposes. This will provide reporting information for the project and help guide future customer engagement and system planning.
- Reduction in customer leak duration. The Beacon system provides real-time data that can be used to identify leaks in a timely manner. With the installation of the new meters, the customer will be empowered to detect and investigate potential leaks much sooner than they were previously able to due to the ability to utilize the online platform which provides real-time data for each individual user. The quicker the leak is identified and located, the quicker it can be repaired, thus, a reduction in water loss. Additionally, the new meters will more accurately measure usage that may have previously gone unmeasured, thus, a reduction in unaccounted for water loss after replacement. Marana Water aims to provide the tools and resources to its customers to access regular feedback on the effectiveness of efforts to reduce water usage in their homes and businesses, and to understand their water usage patterns.

Energy saved

- Marana Water has record of power usage from each facility which can be used to determine energy savings pre and post meter installation. The data will be used to estimate savings based on embedded energy.

D.2.2.3 BUDGET NARRATIVE

The budget narrative workbook has been uploaded separately. Please refer to the uploaded workbook.

D.2.2.4 ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

From H.1 Environmental and Cultural Resource Considerations:
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:

- 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.

The proposed project will have minimal impact on the surrounding environment. The meters to be installed will replace existing meters which are in existing meter boxes; therefore, there will be minimal disturbance of the ground, soil or air. Most of the meters can be easily installed without the need to remove the meter box. If a meter box needs to be removed, the excavation would be about one foot wide, one foot long, and one foot deep, again, causing minimal disturbance to the surrounding environment.

- 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 will be no threatened or endangered species or designated critical habitat affected by the proposed project. Given the small scale and temporary nature of the meter replacement activities, neither species nor habitat will be adversely affected.

- 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.

There are surface waters inside the project boundaries that potentially fall under the CWA jurisdiction as Waters of the United States. However, there are no surface waters or wetlands that will be affected by this project.

- When was the water delivery system constructed?

The Town of Marana Water Department began in 1997, though the Marana Water delivery system has been constructed in phases over the last 50 years. Current water service area is comprised of seven separate systems with interconnections planned over the next ten years.

- 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 proposed project will not result in any changes to individual irrigation system features. The project will replace water meters and will not involve irrigation systems.

- 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 buildings, structures, or features listed or eligible for listing on the National Register of Historic Places that will be affected by this project. The project will not involve buildings or structures.

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

There are no known archeological sites in the proposed project area. Additionally, the project work will take place in existing meter boxes in the public right-of-way that have already been disturbed previously.

- Will the proposed project have a disproportionate and adverse effect on any communities with environmental justice concerns?

The proposed project will not have a disportionate or adverse effect on any communities. In fact, the proposed project will benefit communities by enabling them to reduce water usage and lower water bills.

- Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on Tribal lands?

The proposed project will not limit access to or ceremonial use of Indian sacred sites or impact 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?

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. The project will not include any habitat alternation.

D.2.2.5 REQUIRED PERMITS OR APPROVALS

There are no required permits or approvals for this project. The project is in the Town of Marana's jurisdiction and within Marana Water's service area. Additional easements, land use authorizations, or special permits will not be necessary.

D.2.2.6 OVERLAP OR DUPLICATION OF EFFORT STATEMENT

Marana Water has applied for and received some funding for water meter replacements from the Arizona Water Infrastructure Finance Authority. None of the applied for or

received funding would be duplicative, the meter replacements specific to each funding source will occur under separate projects, replacing meters for different services.

D.2.2.7 CONFLICT OF INTEREST DISCLOSURE STATEMENT

At the time of submission of this application, there are no known actual or potential conflicts of interest for this project.

D.2.2.8 UNIFORM AUDIT REPORTING STATEMENT

Town of Marana Single Audit Report for FY23 is available through the Federal Audit Clearinghouse website. The EIN is 86-0331775.

D.2.2.9 CERTIFICATION REGARDING LOBBYING

See separate form submittal.

D.2.2.10 SF-LLL: DISCLOSURE OF LOBBYING ACTIVITIES

See separate form submittal.

D.2.2.11 LETTERS OF SUPPORT

See letters attached to the end of this document.

D.2.2.12 LETTER OF PARTNERSHIP

Not applicable.

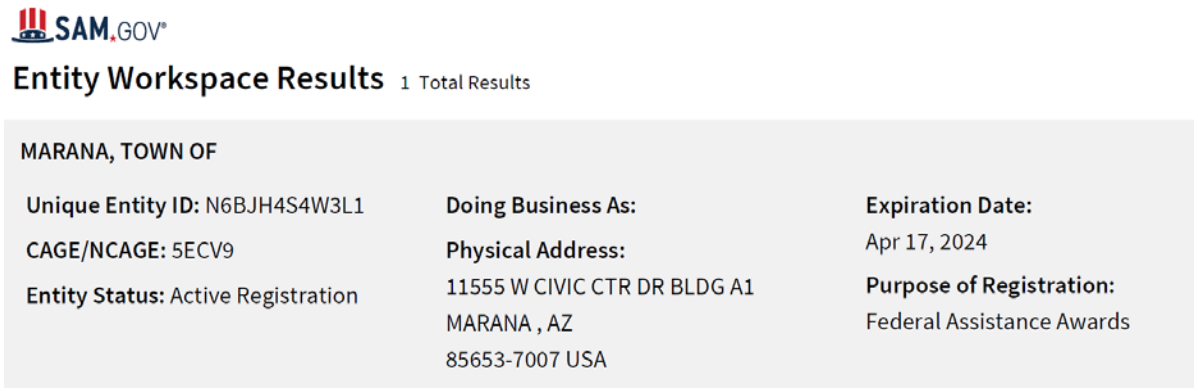
D.2.2.13 OFFICIAL RESOLUTION

Prior to an award, town of Marana will provide an official resolution adopted by our Town Council, the official body authorized to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award under the NOFO.

D.2.2.14 LETTERS OF FUNDING COMMITMENT

Not applicable.

D.3 UNIQUE ENTITY IDENTIFIER AND SYSTEM FOR AWARD MGMT


SAM.GOV

Entity Workspace Results 1 Total Results

MARANA, TOWN OF

Unique Entity ID: N6BJH4S4W3L1

CAGE/NCAGE: 5ECV9

Entity Status: Active Registration

Doing Business As:

Physical Address:
11555 W CIVIC CTR DR BLDG A1
MARANA , AZ
85653-7007 USA

Expiration Date:
Apr 17, 2024

Purpose of Registration:
Federal Assistance Awards

APPENDIX A
Letters of Support

THE UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE, LIFE & ENVIRONMENTAL SCIENCES
Environmental Science

ARIZONA PROJECT WET
Water Resources Research Center
350 N Campbell Avenue
Tucson, AZ 85719
Ofc: 520-621-8606
projectwet.arizona.edu

February 17, 2024

Bureau of Reclamation
Financial Assistance Operation Section Attn: NOFO Team
Denver Federal Center Bldg. 67, Rm 152
6th Avenue and Kipling Street Denver, CO 80225

Dear WaterSMART Grant Review Panel,

Arizona Project WET is a program under Arizona Cooperative Extension at the University of Arizona. We develop water stewardship and STEM literacy by providing teacher professional development that evolves instructional practice and deepens content knowledge. We offer direct student outreach that delivers or extends classroom learning and provide community engagement opportunities that connect members to K-12 students in meaningful ways.

Climate change and worsening drought have driven an extreme drop in water levels at the nation's largest reservoirs. It is a critical time for water utilities like Marana Water to work diligently on projects that seek to conserve and use water more efficiently.

On behalf of Arizona Project WET, I would like to express our earnest support to the Town of Marana Water Department's Water System Meter Replacement Program for the FY2024 and FY2025 WaterSMART Grants: Water and Energy Efficiency Grants. The proposed program will replace approximately 2,500 old manually read end-user water service meters with new meters that are compatible with new Advanced Metering Analytics (AMA) platform allowing the water utility to accurately measure water delivered through their distribution systems and quickly detect water leaks. The advanced meters will also help quantify water savings and promote water conservation within the community.

Your consideration on this grant application is great appreciated. Arizona Project WET is happy to provide any support possible to make it a success.

Sincerely,

Lisa Townsend, Director
Arizona Project WET
350 N Campbell Ave.
Tucson, AZ 85719
Email: lisatownsend@arizona.edu
Tel: 520-621-0023

Cortaro-Marana Irrigation District
Cortaro Water Users' Association

12253 West Grier Road • Marana, Arizona 85653
Telephone: (520) 682-3233 • FAX: (520) 682-3456
Office@cmidwater.com

January 30, 2024

Bureau of Reclamation
Financial Assistance Operation
Section Attn: NOFO Team
Denver Federal
Center Bldg. 67,
Rm 152
6th Avenue and Kipling Street
Denver, CO 80225

Dear WaterSMART Grant Review Panel,

On behalf of Cortaro-Marana Irrigation District and Cortaro Water Users' Association ("CMID/CWUA"), I am writing this letter in support of the Town of Marana Water Department's ("Marana Water") grant application to approximately 2,500 outdated manual-read end-user water service meters. Marana Water's proposal to install new meters will promote accurate measurement of water delivered through their distribution system and will quickly detect water leaks. These advanced meters will help quantify water savings and promote water conservation within the community.

CMID/CWUA serves the agricultural irrigation needs of the Marana, Avra Valley, and Cortaro communities. The District owns approximately 65 miles of pipelines and canals, providing irrigation water to more than 10,000 acres of farmland. CMID/CWUA supports water conservation and all activities that improve water efficiency and sustainability within CMID/CWUA boundaries and the region. We strongly support the project proposed by Marana Water.

We greatly appreciate Bureau of Reclamation WaterSMART program staff for their guidance and financial assistance on water and energy efficiency projects in Southern Arizona. Thank you for your consideration.

Sincerely,

Doug Greenland
General Manager.

MARANA
CHAMBER OF COMMERCE

13251 N Lon Adams Rd, Marana, AZ 85653

Bureau of Reclamation
Financial Assistance Operation Section
Attn: NOFO Team
Denver Federal Center
Bldg. 67, Rm 152
6th Avenue and Kipling Street
Denver, CO 80225

Dear Mr. German and WaterSMART Team,

On behalf of Marana Chamber of Commerce, I am glad to provide this letter to support the Town of Marana Water Department's Water System Meter Replacement Program for the WaterSMART Grants: Water and Energy Efficiency Grants for FY 2024 and 2025.

Founded in 1987, the Marana Chamber has been the voice of business that works to build economic growth and quality of life in our community. We have a unique perspective on the needs and aspirations of the Marana business community. We know our local business owners and managers, and we are committed to building business and community relationships in Southern Arizona.

Marana Water serves 10,000+ water and 5,550+ water reclamations customers in the Town of Marana. The proposed meter replacement program will replace old manually read end-user water meters with modern meters throughout the entire Marana Water service area. With this upgrade, Marana Water will be able to monitor its distribution systems and detect leaks real time, while promoting water conservation among their customers.

Water is vital to life and community prosperity. We whole-heartedly support the proposed meter replacement program for Bureau of Reclamation's WaterSMART program. Please do not hesitate to contact me any time regarding our support.

Sincerely,

Amanda Wiggins
President/CEO
Marana Chamber of Commerce
13251 N Lon Adams Rd, Marana, AZ 85653
amandawiggins@maranachamber.com
P: 520.682.4314

TRICO
AN ENERGY COOPERATIVE

February 20, 2024

Bureau of Reclamation
Financial Assistance Operation Section
Attn: NOFO Team
Denver Federal Center
Bldg. 67, Rm 152
6th Avenue and Kipling Street
Denver, CO 80225

Re: WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2024 & 2025
Town of Marana Water Department Water Meter Replacement Program

Dear Bureau of Reclamation WaterSMART Team:

I am writing this letter in support of the Town of Marana Water Department's meter replacement program.

Trico Electric Cooperative Inc. (Trico) is a non-profit electric distribution cooperative serving more than 48,000 members in rural areas surrounding the City of Tucson including the Town of Marana. Area farmers and ranchers organized Trico in 1945 under the Rural Electrification Act that was enacted to bring electricity to the rural areas of the United States.

Global climate change and regional water scarcity pose great uncertainty for water and energy utilities. The water meter replacement program proposed by the Town of Marana Water Department, a Key Account of Trico, will replace thousands of older end-user water service meters that are read once monthly through manual or drive-by radios. The newer technology cellular meters that will replace these older meters will allow the water utility to accurately measure water delivered through their distribution systems and quickly detect water leaks. The program will allow for more operational certainty and efficiency while promoting water conservation today and into the future.

Trico will continue to work with the Town of Marana to implement energy efficiency measures, maximize the use of renewable resources and build a clean and beautiful community in Southern Arizona. Should you have any questions regarding our support, please feel free to contact me directly.

Sincerely,

Brian Heithoff

Brian Heithoff
CEO and General Manager Trico Electric Cooperative, Inc.
Phone: (520) 744-2944. Email: BHeithoff@trico.coop

Scott Schladweiler, P.E.
Deputy Director
Tucson Water
Scott.Schladweiler@tucsonaz.gov

February 21, 2024

Bureau of Reclamation
Financial Assistance Operation Section
Attn: NOFO Team
Denver Federal Center
Building 67, Room 152
6th Avenue and Kipling Street
Denver, CO 80225

Re: WaterSMART Grants: Water and Energy Efficiency Grants (WEEG) or Fiscal Year 2024 & 2025; Town of Marana Water Department Water Meter Replacement Program

Dear Bureau of Reclamation WaterSMART Team:

I am writing this letter in support of the Town of Marana Water Department's meter replacement program and grant proposal under the Bureau of Reclamation's WEEG program.

Tucson Water is the largest water utility in Southern Arizona, serving more than 740,000 people with safe and reliable water service for over 100 years. A department of the City of Tucson, Tucson Water is a national leader in water conservation and efficiency, a steward of one of the first and largest reclaimed water systems in Arizona and a pioneer in recharge and recovery of surface water for long-term water reliability.

Like Marana Water, Tucson Water provides service to thousands of customers within the Town of Marana, and the utilities partner on a number of water resource projects. Both utilities are looking to gain higher resolution usage data, for more efficient and sustainable operations. The project proposed by Marana will replace thousands of older end-user water service meters that are read once monthly through manual or drive-by radios. The Advanced Metering Infrastructure (AMI) meter replacements will enable higher resolution and earlier detection of water leaks, providing greater operational certainty and enabling greater water conservation. The proposed federal funding of $500,000 to match Marana's investment of $600,000 will help the utility achieve its goals for efficiency and conservation nearly twice as fast as without the federal funding, having local and regional benefits for coordinated water management.

Scott Schladweiler, P.E.
Deputy Director
Tucson Water
Scott.Schladweiler@tucsonaz.gov

Should you have any questions regarding our support, please feel free to contact me directly at scott.schladweiler@tucsonaz.gov.

Sincerely,

Scott Schladweiler, P.E.
Deputy Director
Tucson Water

cc: John Kmiec, Director, Tucson Water