



**WEST
SAN MARTIN
water works**

**Advanced Meter Infrastructure
Conversion**

March 18, 2021

**2021 WaterSmart Small Scale Water Efficiency Grant
U.S. Bureau of Reclamation**

Project Contact: Brian Ukestad
West San Martin Water Works
1005 Highland Avenue
San Martin, Ca 95046
Phone: 408-683-2098
Email: brian.ukestad@wsmwater.com

3/18/21
1211

*Prepared By:
Sylvir Consulting, Inc*

Table of Contents

<i>List of Acronyms</i>	3
-------------------------------	---

Section 1: Technical Proposal and Evaluation Criteria..... 4

1.1 Executive Summary.....	4
1.2 Background.....	6
1.3 Technical Project Description.....	7
1.4 EVALUATION CRITERIA.....	9
1.4.1 Evaluation Criterion A: Project Benefits.....	9
1.4.2 Evaluation Criterion B: Planning Efforts Supporting the Project.....	11
1.4.3 Evaluation Criterion C: Project Implementation.....	13
1.4.4 Evaluation Criterion D: Nexus to Reclamation.....	14

Section 2: Project Budget..... 16

2.1 Funding Plan and Letters of Commitment.....	16
2.2 Budget Proposal.....	17
2.3 Budget Narrative.....	18

Section 3: Environmental Compliance..... 20

Section 4: Official Resolution..... 23

Section 5: SAM Registration..... 25

Section 6: References..... 26

Appendix A: Vendor Cost Quotation

List of Acronyms

AMI	Advanced Metering Infrastructure
AF	Acre-feet
AFY	Acre-feet per year
CEQA	California Environmental Quality Act
MFR	Multi-Family Residential
mg	million gallons
NEPA	National Environmental Policy Act
SFR	Single Family Residential
VWD	Valley Water District
WSMWW	West San Martin Water Works

Section 1: Technical Proposal and Evaluation Criteria

1.1 Executive Summary

Date: March 18, 2021

Applicant: West San Martin Water Works

Applicant City, County, State: San Martin, Santa Clara County, California

Applicant Type: Category A

Project Name: Advanced Meter Infrastructure (AMI) Conversion

Project Duration: 19 months

Estimated Project Completion Date: September 30, 2023

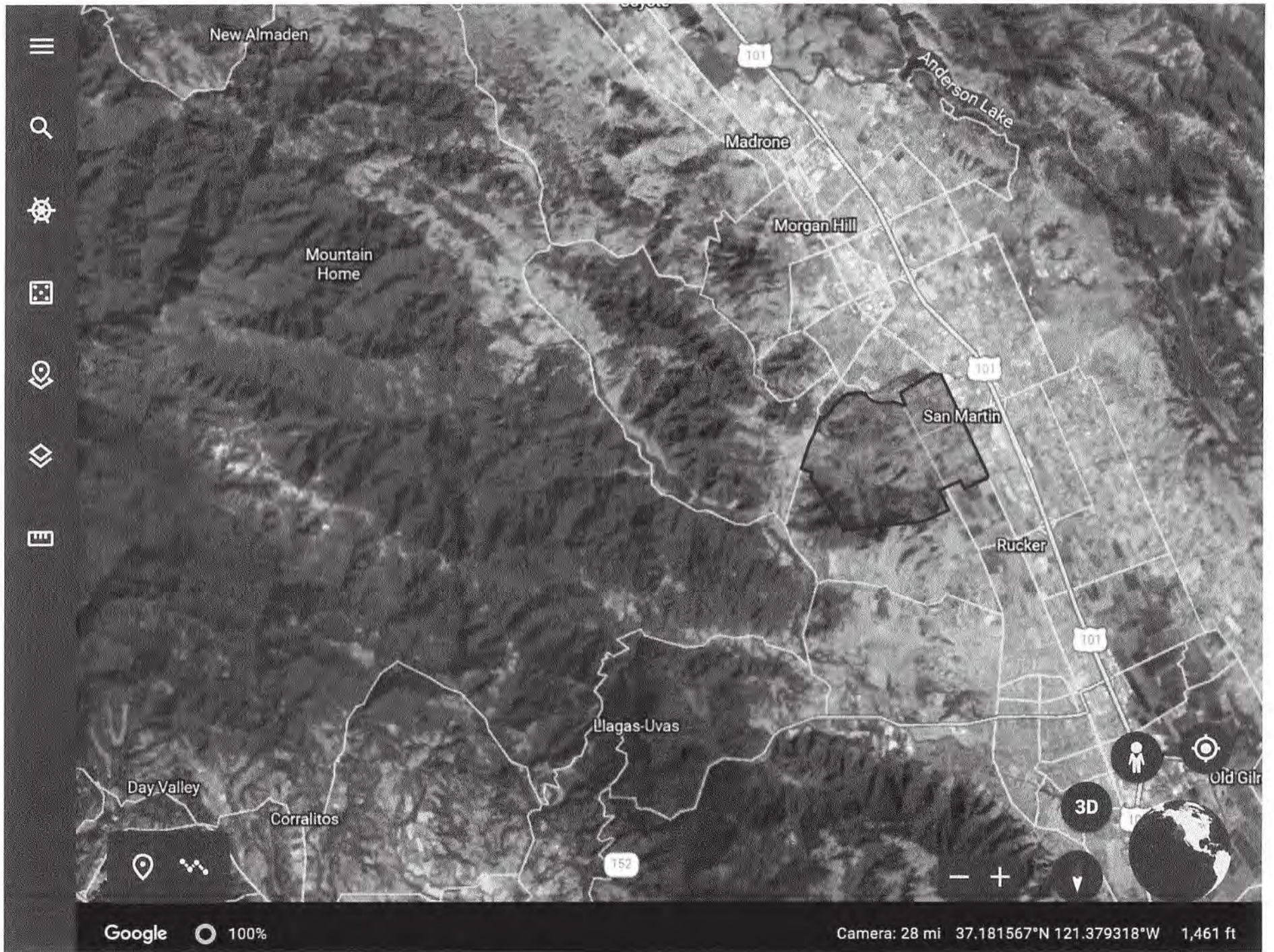
Project Summary:

West San Martin Water Works (WSMWW) is seeking grant funding assistance to convert all of the meters in the service area to AMI meters. The WSMWW depends on local groundwater from the Llagas Groundwater Basin managed by the Valley Water District, which also holds all water rights for this groundwater basin. The proposed project will convert 269 existing meters to new AMI meters to improve water supply management, enhance long-term water use efficiency, and support water supply reliability of the groundwater basin.

The installation activities will not commence prior to January 31, 2022, unless an earlier date is approved under a financial agreement with Reclamation.

This project is not located on a Federal facility.

West San Martin Water Works Project Location Map



1.2 Background

The West San Martin Water Works (Water Works) is a small water company founded in 1967, serving the west area of San Martin within the Santa Clara County in California, along US-101 approximately 5 miles south of the City of Morgan Hill, California. The total service area encompasses approximately 5.1 square miles. The proposed project will be implemented throughout the service area, as shown on the Project Location Map on the previous page.

The Water Works is a PUC regulated, private for-profit water company serving water to 309 connections, with a mix of customer types including, large residential parcels of 5 – 20 acres, multi-family residential, commercial/institutional businesses and a few industrial, and one resort.

All of the supplied water is from three (3) groundwater wells, located within Llagas Groundwater Basin, which is regulated by the Valley Water District (formerly known as the Santa Clara Valley Water District). While the Water Works pumps and distributes the ground water for potable use, the Valley Water District owns all of the water rights and therefore manages the groundwater basin and charges the Water Works for water extracted at a cost of \$495/acre-foot.

The Water Works serves an average of 322.61 acre-feet of potable water per year (AFY). Table 1 below shows the water demand by customer type. Water supplies and demand have been stable, with the exception of during the 2014-2017 statewide drought, which required a 25% reduction in water demand.

Table 1: Water Demand by Customer Type

Customer Type	Average Connections*	Average Water Consumption (AFY)**
Residential	253- Single-Family 5- Multi-Family	262.34- Single-Family 4.91 - Multi-Family
Commercial/Institutional	42	54.21
Industrial	2	1.15
Large Landscape Irrigation	2	0
Agricultural Irrigation	2	0
Subtotal	309	322.61
Recycled Water	0	0
Total	309	322.61

* Connection data based on Fiscal Year 2019.

** Average based on 2019 calendar year actual consumption.

Water Delivery System

The WSMWW was founded in 1967 to originally supply water to the “downtown” portion of San Martin, approximately 30 homes and a couple businesses- in less than 0.2 square miles. It now provides water to a mix of over 300 connections, of which

85% are residential. 100% of the drinking water is sourced from the Llagas Groundwater Sub-Basin via three WSMWW owned wells. The WSMWW distribution system consists of 17 miles of pipelines ranging in diameter from 2 to 12 inches. The water rights from the Llagas Groundwater Sub-Basin are owned by the Valley Water District, which is also responsible for monitoring and managing groundwater pumping and recharge.

All of the Water Works connections are metered; however, they are all manually read by physically visiting each connect and physically removing the lids and viewing the meter display. Several of the meters are in locations that are not easily accessible either due to their location on the property and/or the depth of the meter. For example, one particular water connection that has a meter is located 5 feet below the surface and requires the person reading the meter to climb down into the narrow meter box. Other meter displays are distorted due to moisture and soil exposure, impacting the ability to read the meter and may result in repeat meter readings to determine the correct water usage.

Furthermore, 45 of the meter bodies will need to be replaced to work with the new meters the Water Works is converting to. The existing meters bodies that are being replaced are approximately 40 years old and cannot be retrofitted to work with the new meter registers.

1.2.1 Past Working Relationship with Reclamation

WSMWW has not previously worked with Reclamation.

1.3 Technical Project Description

WSMWW's mission is to provide safe, reliable water to its customers, at reasonable rates. The accurate and efficient recording of water consumption is essential for managing the demands, forecasting future water supply demands, identifying leaks on both the water company's pumping and distribution system, as well the customers' connection.

Currently, the WSMWW pays for a third party to physically drive to each meter and personally read the meter and record to determine water consumption. This process is highly inefficient, especially when multiple meter readouts are distorted and difficult to read or are difficult to access—duplicate meter readings are not uncommon. Over the past several years, the WSMWW has considered and researched multiple options including AMR (Automated Meter Readers) technology and previous types of Advanced Meter Infrastructure (AMI), but the former would still require driving to each location for each reading and previous AMI evaluated would require new radio transmission systems be constructed and specialized software. The costs to install the AMR system was less than AMI, but the benefits did not justify the capital outlay for this small water company. Previous versions of AMI, with the added radio transmission infrastructure, were too expensive and would require a significant rate increase of approximately 30% to cover the cost.

In 2019, the WSMWW learned of a new, cellular based AMI technology offered by Badger Meters. Most of the existing WSMWW meter bodies are also manufactured by Badger, which will allow the WSMWW to retrofit the existing meters with this new AMI system.

The West San Martin Water Works Advanced Metering Infrastructure (AMI) Conversion Project consists of replacing manually read water meters with meters that will use a cellular-based system that leverages existing cellular networks, without relying on proprietary gateways. Using this infrastructure-free fixed network, there will be no additional fixed-network infrastructure to build or maintain. Cellular endpoints may be deployed anywhere at any time, allowing for easy scalability. This type of system is also flexible, allowing for a blended mobile/cellular managed solution, if needed.

Reliability has vastly improved, and the Badger Beacon system uses cellular endpoints that access meter data management (MDM) programs directly, via secure Virtual Private Network (VPN) as part of its two-way communication process—no communication is exposed to the public Internet. The Beacon Advanced Metering Analytics (AMA), a cloud-based system, will provide continuous updates, keeping the software current with the most advanced software features without additional costs. The Cloud-based system (ISO 27001 certified) will provide flexibility to view data anywhere, including in the field with a smartphone, tablet, or laptop, allowing for quick resolution of customer complaints/disputes. The cloud will also eliminate the need for data backup and storage and allows for easy access to the data after a natural disaster. Customers will be able to access their accounts and view water consumption.

WSMWW has installed 10 meters to test the operation and use of these new meters, and will install 45 more meters, plus setup the Beacon AMA customer portal, AMA Software and training, and complete the billing integration in 2021. This project, if funded, will allow WSMWW to complete the conversion of all remaining meters for the service area, for all customer classes. The Orion Radios, Batteries, and Registers will be purchased installed on all of the meters, replacing the existing meter registers, and the meters that cannot be retrofitted will be replaced, as noted in the following table.

The proposed project will install the following:

Material	Quantity
ORION Radio, Battery, and Register only	224
5/8 x 3/4 Inch Meter, w/ Orion Radio and Battery Register	29
1 Inch Meter, w/ Orion Radio and Battery Register	10
1.5 Inch Meter, w/ Orion Radio and Battery Register	6

It is suspected that some of the analog meters are not registering accurately and the new AMI meters will also be able to detect leaks, resulting in reduced water losses. It is estimated that a reduction in water use will be achieved due to quick identification of water leaks and increased awareness by customers on water use with an AMI system in place. Other water utilities have reported water savings of 7 -10 percent or greater, however, we estimate that 4-5 percent is a more accurate savings for our community.

1.4 EVALUATION CRITERIA

The replacement of the existing water meters with cellular-based, AMI meters will conserve water and improve overall water management.

1.4.1 Evaluation Criterion A: Project Benefits

1) Describe the expected benefits and outcomes of implementing the proposed project.

Benefits to the WSMWW water supply delivery system include, but are not limited to:

- 1) Reduced monthly and annual operations costs for meter reading by avoiding having to use a third-party service to physically read the meters, and/or re-reading of meters;
- 2) Data Transparency: Two-way communication, near real-time (up to 15 min. intervals), providing more accurate water use data to both the Water Works and the customer;
- 3) Cost effective solution;
- 4) Early leak detection of even very small leaks;
- 5) Water Use Efficiency improvements through better water management and customer awareness;
- 6) Safer meter readings by eliminating the need to climb down into deep meter boxes or other difficult access locations; and
- 7) The grant funding will allow for faster conversion to realize these benefits; without which would likely take 5 years or longer to complete.

It is estimated that the replacement of the existing analog meters with AMI meters will conserve approximately 13 AFY and will improve overall water supply reliability. This calculation is based on an estimated savings of 4 percent of the 2019 water demand. No water use restrictions were in place in 2019, therefore this water demand represents a typical rate of use for our service area. This level of savings is less than the typical degree of water savings that has been repeatedly reported by other water utilities; however, the staff consider this estimation is more accurate for our service area.

The customer interface component of AMI will permit customers to gain greater awareness of their day-to-day (even hour to hour) water use, which will help them to identify more ways to conserve and recognize unusual water usage and potential leaks.

By converting from standard volumetric meters that do not have the ability for remote monitoring to an AMI System and cloud network, the new meters' ability to provide real-time, two-way communication electronically to both WSMWW Staff and customers will reduce the amount of water lost due to water leaks through early detection. Early detection is a key benefit, because small leaks, especially on the customer side, can persist for months until they increase to an amount that is noticeable through increases in water bills; at which point a customer complains there is a problem with a high bill. The new software will provide alerts to both the customer and the Water Works staff of unusual water use, which can help both the customer and the Water Works staff to determine the cause for the unusual water use and determine if there is a leak or opportunity for the customer to learn more about their water consumption activities throughout the day and from day to day, season to season. This new system will also be used educate consumers on how to reduce water usage and help control water use during water alerts and droughts, if necessary, and even for starting and stopping service.

According to the Pacific Institute, when coupled with effective pricing structures, reductions of 15 to 20 percent in water can be achieved, with additional water savings possible through the improved management of the water system with respect to the identification and the repair of leaks that would likely go unnoticed for months with standard volumetric meters. For example, The City of Santa Maria reduced their waters losses from 6 percent to 2 percent after converting to an AMI system, and the City of Sacramento was able to detect and repair leaks that resulted in water savings of 236 million gallons of water over a two-year period.¹ The WSMWW already has a tiered pricing rate, however, the addition of the smart meters, the AMI network and the cloud-based data management system, water conservation will likely increase due to the fact that the customer will be able to receive high usage alerts that will include the time of day this higher usage is occurring and will be better able to correct such issues. The WSMWW staff will also be able receive such alerts and will be able to provide the customer information regarding potential leaks and provide conservation tips.

Improving the reliability of the Water Works metering system will also benefit the Llagas Groundwater Sub-Basin region and the many water utilities and communities that rely on this groundwater for their water supply. According to the California Department of Water Resources, this groundwater basin is identified as a high priority basin under its Sustainable Groundwater Management Act (SGMA). A primary reason for this prioritization is the size of

¹ "Metering in California," Pacific Institute, September 2014.
<http://pacinst.org/app/uploads/2014/09/pacinst-metering-in-california.pdf>

the population reliant upon this groundwater basin for its water supply—approximately 90,000 people are served by 2,178 groundwater wells, 29.42 wells per square mile, representing 92% of the water supplied to the population. While the population growth to 2030 is considered low, the number of irrigated acres also contributes to this prioritization with 16,697 acres. This groundwater basin is not experiencing overdrafting or land subsistence currently but is a high priority basin. This ranking is an alert to all who rely on this groundwater for their water supply to implement projects and policies now as important preventative measures to protect this water supply now and into the future. This AMI project allows the WSMWW to contribute towards the protection of the groundwater basin water supply through better water management and gaining tools that will provide quicker leak detection and promote customer water conservation to reduce water lost to excess use and water supply drawn from the groundwater basin.

2) **Extent to which the proposed project will increase collaboration and information sharing among water managers in the region**

This new AMI system will allow the WSMWW to better inform the Valley Water District (the Sustainability Groundwater Manager for Llagas Groundwater Basin and others) of WSMWW water demands and potential discrepancies with the VWD well meters recording water drawn by the WSMWW wells.

As a very small water company, this project may serve as an example of an effective action for other small water companies to better manage their water supplies; thereby increasing the regional benefits and water reliability.

3) **Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)**

This project if grant funded and completed, will have a positive impact on the recreation and tourism. San Martin is home to large recreational areas, parks and a resort with a golf course and is located between Morgan Hill, CA and Gilroy, CA. Gilroy is famous for the Gilroy Garlic festival earning the “largest garlic festival” Guinness Book of World Records for more than 109,000 attendees in 2017. When visitors come to the Garlic festival, many stay in San Martin. Morgan Hill, Ca is part of the San Francisco Bay area and known for its wineries and natural areas for hiking and fishing. San Martin, despite being small, receives many tourists during the warm weather months. Better groundwater management will support stable water rates for these local sectors and a stable water supply.

1.4.2 Evaluation Criterion B: Planning Efforts Supporting the Project

Describe how your project is supported by an existing planning effort.

The Llagas Groundwater Sub-Basin has been listed as a high priority basin by the California Department of Water Resources—2019 groundwater basins priority

rankings consist of “Critical, High, Medium, and Low”. For the Llagas basin, conditions that are of significant concern are the number of groundwater wells/square mile, total number of wells, irrigated acres, and percent of reliance upon groundwater supplies.

Under the regional Water Supply Master Plan 2040, *Securing Existing Water Supplies*, optimizing the use of existing supplies and infrastructure leverages the investments already made and increases water supply reliability and regional water source flexibility. This projects supports the following regional Water Supply Master Plan 2040 objectives that govern all water retailers within the Valley Water District area, including the Llagas Subbasin where WSMWW is located:

- *Objective 1: Provide a Reliable Water Supply*
 - *Sub objectives: Maintaining groundwater storage*
 - *Sub objective: Securing existing water supplies*
 - *Sub objective: Maximizing water conservation and water use efficiency*

- *Objective 4: Maximize Flexibility in the Water Supply System by: Minimizing implementation complexities and barriers.* The cellular based AMI system implementation is not complex and is able to be used on most of the existing meter bodies.

Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.

On January 17, 2014, California Governor Edmund G. Brown Jr. declared a State of Emergency and directed state officials to take all necessary actions to prepare for the drought conditions and called upon every Californian to conserve water. As water supplies continued to diminish, the Governor’s office called on all water agencies to implement drought measures to reduce water demands and the Department of Water Resources reduced SWP allocations across the state.

While WSMWW does not receive SWP water, WSMWW was required to reduce water consumption 25% during this drought period and will likely have to do it again as climate change models predict increasing periods of extended drought.

This drought declaration and extended drought also led to utilities using groundwater to also conserve as more utilities turned to increased use of groundwater resources. This turn to groundwater sources resulted in visible land subsidence in some areas and a rapid decrease in groundwater reserves and is reason the state created the Sustainable Groundwater Management Act (SGMA) to monitor and establish guidelines and regulations for groundwater management. Better groundwater management became a larger priority for the state and the region.

Use of AMI has been determined to be a long-term solution that improves overall water management and water use efficiency and is listed as a project for all water suppliers located within the Santa Clara County, as noted in Appendix H, page 5.

Specifically,” *Advanced Metering Infrastructure (AMI): Implement a cost share program with water retailers (emphasis added) to install AMI throughout their service area. AMI would alert customers of leaks and provide real-time water use data that allows users to adjust water use.”*

This project is WSMWW’s highest priority, because it will yield the most benefits for the service area and have an immediate reduction in operational costs, as noted under Criterion A. This project will improve water reliability for the WSMWW customers and improve water management.

1.4.3 Evaluation Criterion C: Project Implementation

Describe the implementation plan for the proposed project.

The project consists of the following activities, which are detailed in Section 1.3., *Project Description*.

Based on the FOA, projects cannot begin prior to 1/31/2022. The estimated implementation schedule reflects this restriction; however, this is a **Ready to Proceed** project that could begin as soon as Reclamation provides approval to proceed.

PROJECT SCHEDULE

Milestone / Task / Activity	Planned Start Date	Planned Completion Date
Reclamation Environmental Compliance	2/1/2022	3/1/2022
Purchase and Installation AMI meters – 50% complete	4/1/2022	1/31/2023
Purchase and Installation AMI meters – 100% complete	2/1/2023	9/30/2023
Project Management and Grant Reporting	2/1/2022	9/30/2023

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

No Permits are required for this project.

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

The project consists of the purchase and installation of AMI cellular equipment at meter locations within the WSMWW service area. No engineering or design work was required for this project; however, WSMWW has been researching AMR/AMI meter technologies since 2015. AMR was strongly considered as a potential project for the meter replacement since it did allow for drive-by meter reading, which would be safer and faster for the meter reader; however, the cost was expensive and the

be safer and faster for the meter reader; however, the cost was expensive and the software proprietary with specialized readers and data management systems that would require ongoing licensing and significant upfront costs to implement. AMI was then considered, but the fixed area network with new towers, antennae, and endpoints, plus software packages and ongoing licensing was cost prohibitive for our small water company for the capital outlay and for the ongoing maintenance of the new infrastructure and software systems.

In 2019, WSMWW reached out to a Badger meter representative to see if there were any new developments with AMI. WSMWW learned of a cellular based system using a cloud-based interface and no large, ongoing licensing and infrastructure maintenance. In 2020, WSMWW purchased and began to install 10 meters to test them out and to test for degradation of the cellular signal. They worked well with the existing meter bodies and even on deeper meter locations buried in the ground. There was no cellular signal degradation using the existing meter box lids or for deep meter locations.

After this small trial use and demonstration of the software programs, WSMWW determined this cellular base system was a good fit for the WSMWW water system.

The next step was to physically inspect each meter box, lid, and meter body to identify any meter bodies that were not compatible with the new meter register and cellular transmitter to plan. Through these inspections in 2020 and 2021, it was determined that 45 meter bodies would not be compatible with the new AMI and these meter bodies have been identified for full replacement.

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

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

Describe the timeline for completion of environmental and cultural resource compliance. Was the timeline for completion of environmental and cultural resource compliance discussed with the local Reclamation office?

The project is anticipated to qualify as Categorical Exemption under CEQA and a Categorical Exclusion under NEPA. No further compliance or mitigation measures are required to complete this project.

1.4.4 Evaluation Criterion D: Nexus to Reclamation

Is the proposed project connected to a Reclamation project or activity? If so, how? Please consider the following:

- **Does the applicant receive Reclamation project water?**

WSMWW does not receive Reclamation project water directly. However, the Llagas Groundwater Sub-Basin water rights are owned by Valley Water District (VWD) and pumping restrictions may be imposed by the VWD.

The VWD does receive Reclamation water from the Central Valley Project (CVP). The Santa Clara Valley District Act (District Act) was established in 1929, as the first voter-approved groundwater protection law in Santa Clara County. This law charged the Valley Water District (VWD) with the responsibility of stopping groundwater overdraft and subsidence. The Valley Water District manages water resources for the entire Santa Clara County, which includes two groundwater subbasins, one of which is the Llagas Subbasin. The VWD operates a robust and flexible conjunctive use program that uses a variety of surface water sources (Local, imported SWP and CVP supplies, and imported transfer options) to artificially recharge the groundwater basins. Two major recharge facilities are located in the Llagas Subbasin and this recharge depends on the availability of local, CVP, and SWP surface water supplies. It is through recharge of the Llagas Subbasin using CVP water that the WSMWW receives Reclamation water.

- Is the project on Reclamation project lands or involving Reclamation facilities? No
- Is the project in the same basin as a Reclamation project or activity?
- The WSMWW project is located within the Central Valley Project area.
- Will the proposed work contribute water to a basin where a Reclamation project is located? No

Will the project benefit any tribe(s)? No, WSMWW is not aware of any tribes that would benefit from this project..

Section 2: Project Budget

2.1 Funding Plan and Letters of Commitment

All non-Reclamation funds will be provided by the WSMWW. These funds will consist of monetary contributions from water revenues and in-kind labor costs for the installation of the meters.

No other federal or state funds have been requested or received to complete the proposed project to date.

The funds requested from Reclamation will allow the WSMWW to complete its AMI Conversion Project to better manage the groundwater supply. The proposed improvements will replace the remaining residential, commercial, and industrial meters that are inefficient by today's standards, and are likely under-reporting water usage and cannot alert staff and customers of leakages. This project, if funded, will improve water efficiency and water management, reduce operational costs, reduce GHG emissions associated with manual meter readings and save an estimated 13 AFY.

The WSMWW will be incurring additional costs in 2021 for the setup and integration of the AMI software programs, training, and for an initial installation of 45 meters to initiate the implementation of the software programs and troubleshoot/resolve any integration and/or setup issues that often arise with using new systems.

WSMWW will not be requesting grant reimbursement for these expenditures. However, we request consideration that Reclamation consider these costs as part of the WSMWW 50% cost share, if permissible. That being said, the budget tables contained herein DO NOT include these pre-award costs.

Cost Share: West San Martin Water Works is proposing to provide an 50% cost share for the proposed project.

Budget Table 1: Summary of non-Federal and Federal sources

Funding Sources	Funding Amount
Non-Federal Entities: West San Martin Water Works	\$57,824
Non-Federal Entities Subtotal	\$57,824
Other Federal Entities: N/A	0
Requested Reclamation Funding	\$57,823
Total Project Funding:	\$115,647

2.2 Budget Proposal

Budget Item Description	COMPUTATION		Quantity Type (hours/days)	TOTAL COST
	\$/Unit	Quantity		
Salaries and Wages				
WMSWW Meter Installer	\$61.42/hr	941.50	hours	\$57,836
Fringe Benefits				
Not Applicable	0			\$0.00
Travel				
Not Applicable	0			\$0.00
Equipment				
Not Applicable	0			\$0.00
Supplies/Materials				
Orion Radio and Battery Register Only	\$173.00	224	Ea	\$38,752
5/8" x 3/4 Inch Meter, with Orion Radio and Battery Register	\$240.00	29	Ea	\$6,960
1-inch meter, with Orion Radio and Battery Register	\$359.00	10	Ea	\$3,590
1.5 inch Meter, with Orion Radio and Battery Register	\$560.50	6	Ea	\$3,363
Tax and Shipping (9%)	\$4,739.85	1	LS	\$4,739.85
Total Supplies/Materials		269		\$57,404.85
Contractual/Construction				
Not Applicable	0			\$0.00
Subtotal				
Other				
Reclamation Environmental Review	\$406	1	LS	406
Total Direct Costs				\$115,647

2.3 Budget Narrative

The budget table is divided into the following categories and sub-categories described in detail in this section:

Salaries and Wages

The salaries are for the WSMWW in-house labor to install the AMI radios and registers, and new meters as applicable, and to program the devices to connect to the AMI software.

Wages were calculated assuming an average of 1.75 hours for 2 workers to install each meter, including drive time and programming. This calculation equals \$215/ installation.

In-house Labor Rate: \$61.42/hour

$\$61.42 \times 1.75 \text{ hours} \times 2 \text{ workers} = 3.5 \text{ man-hours per meter}$

Fringe Benefits: Not included in this project's budget.

Travel: Not included in this project's budget.

Equipment: No Equipment costs.

Materials and Supplies

The WSMWW has selected a vendor (Badger Meter) to provide the materials noted in the table below. Included in Appendix A is the vendor quote for these meters. Items # 1 and # 2 are included in this project proposal. 45 of the Orion Radio and Battery Registers will be installed prior to this project.

Material	Unit Cost	Quantity	Subtotal	Tax (9%)	Total
ORION Radio and Battery Register only	\$ 173.00	224	\$38,752.00	\$ 3,487.68	\$ 42,239.68
5/8 x 3/4 Inch Meter, w/ ORION Radio and Battery Register	\$ 240.00	29	\$ 6,960.00	\$ 626.40	\$ 7,586.40
1 Inch Meter, w/ ORION Radio and Battery Register	\$ 359.00	10	\$ 3,590.00	\$ 323.10	\$ 3,913.10
1.5 Inch Meter, w/ ORION Radio and Battery Register	\$ 560.50	6	\$ 3,363.00	\$ 302.67	\$ 3,665.67
Total		269	\$52,665.00	\$ 4,739.85	\$ 57,404.85

Contractual

Not applicable

Environmental and Regulatory Compliance Costs

Costs under this category are limited to costs incurred by Reclamation to determine the level of environmental compliance required for the project.

The proposed scope of work is assumed to qualify for a categorical exemption.

Other

No other costs are expected or included in the proposed budget.

Indirect Costs

No indirect costs are included in the budget.

Total Costs

Funding Sources	Funding Amount
Non-Federal Entities: West San Martin Water Works	\$57,824
Non-Federal Entities Subtotal	\$57,824
Other Federal Entities: None	0
Requested Reclamation Funding	\$57,823
Total Project Funding:	\$115,647

Section 3: Environmental Compliance

1. Will the 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 involves replacement of an existing water meters with automated meter devices using a cellular network. No equipment is required for the cellular network system, since it will use existing cellular towers and services in the area. Cellular transmitters installed in the meter box will provide two-way communication between the water meters and the AMI software system located at the Water Works office and to cloud based service

Under the National Environmental Policy Act "maintenance, rehabilitation, and replacement of existing facilities which may involve a minor change in size, location and/or operation", such as that which would occur under the proposed project, qualify for a Categorical Exclusion. Similarly, the project is exempt from the California Environmental Quality Act (CEQA). Under section 15301 (b), Existing Facilities of the CEQA Guidelines "minor alterations of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination..." are exempt from CEQA. The types of "existing facilities" which fall under this Class 1 exemption as noted under subpart b, "Existing facilities both investor and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services."

2. 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?

WSMWW is not 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.

3. 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 project may have.

The proposed activities will not impact any wetlands or other surface waters, as the improvements are limited to the retrofit of water meter infrastructure to improve efficiency and does not include an expansion or destruction of infrastructure and will not result in an increased draw from or discharge to these waters.

4. When was the water delivery system constructed?

The water system was incorporated in 1967. Large portions of the system, including the active storage tanks, were constructed in 1980-1981 and 1999. The existing water meters range from a few years old to 40 years old, with most meters 15-20 years old.

5. Will the project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

No modifications are being made to an irrigation system.

6. Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

No buildings, structures, or features associated with the proposed project are listed or eligible for listing on the National Register of Historic Places.

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

There are no known archeological sites that would be affected by the proposed project. The proposed project will replace existing meters on infrastructure that has been in operation for 40 years or more and will not include any new ground disturbing activities.

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

The proposed project will have no impact on low or minority populations. The proposed improvements are intended to improve system efficiencies and reduce water losses.

The project could actually benefit all populations, with the greatest benefit to low/fixed income or minority populations, by improving water management and reducing losses, which reduces the need to seek more expensive water supplies and increase water rates.

9. Will the 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 result in other impacts on tribal lands as the infrastructure to be improved are not located within such areas.

10. Will the 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 conversion of the existing meters to automated meters will not contribute to the introduction, continued existence, or spread of, noxious weeds or non-native invasive species. No large construction equipment is used, and work is limited to the existing meter boxes. Between meter register replacements and meter replacements, any tools used are cleaned.

Section 4: Official Resolution

The West San Martin Water Works Board of Directors approved a resolution on March 15, 2021 authorizing the president to submit a grant application to and execute a Cooperative Agreement with Reclamation for implementation of the proposed project. The resolution agrees to use the funds identified in this funding plan for the proposed project.

The resolution is included with this application proposal

RESOLUTION NO. 2021 - 1

A RESOLUTION OF THE WEST SAN MARTIN WATER WORKS BOARD OF
DIRECTORS
AUTHORIZING A WATERSMART SMALL SCALE WATER EFFICIENCY GRANT
APPLICATION TO THE BUREAU OF RECLAMATION

BE IT RESOLVED, by the West San Martin Water Works of Directors ("Board") that the General Manager or his/her designee is hereby authorized and directed to sign and file, for and on behalf of the West San Martin Water Works ("WSMWW"), a WaterSMART Small Scale Water Efficiency Grant Application for a grant from the U.S. Bureau of Reclamation in the amount not to exceed \$75,000; and

BE IT RESOLVED, the General Manager, or his/her designee, is hereby authorized to acknowledge and approve of the application and the information submitted for consideration, and is further authorized to certify that the WSMWW has and will provide the amount of funding and/or in-kind contributions specified in the funding plan; and

BE IT RESOLVED, that the Board hereby agrees and further does authorize the aforementioned representative or his/her designee to certify that the WSMWW has and will comply with all statutory and regulatory requirements related to any grant funds, and

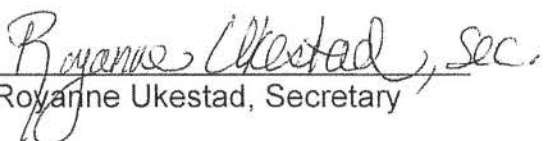
BE IT FURTHER RESOLVED, that the President or his/her designee is hereby authorized to negotiate and execute a grant and any amendments or change order thereto on behalf of the District received and will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

PASSED AND ADOPTED THIS 15 DAY OF MARCH, 2021.

AYES: 3

NOES: 0

ATTEST:


Royanne Ukestad, Secretary

Section 5: SAM Registration

West San Martin Water Works registration in the SAM.gov/Login.gov system is pending and will be completed within the required 30 days, post application submittal date. WSMWW submitted its application for approval, however, a delay occurred due to a minor entity name correction which delayed the issuance of a CAGE code.

Upon approval and receiving “active” status, WSMWW or its consultant will forward proof of status and the WSMWW agrees to maintain an active SAM registration with current information during the period of its federal assistance agreement(s).

Section 6: References

Water Supply Master Plan 2040, Valley Water District, November 2019.

Appendix A

Badger Meter Supplier Cost Proposal



QUOTATION

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: March 16, 2021
 QUOTED BY: Kathy Richards
 REQUESTED BY: Brian Ukestad
 PHONE: 408-623-6948
 EMAIL: brian.ukestad@wsmwater.com

BILL TO: West San Martin Waterworks
 1005 Highland Ave.
 San Martin, CA 95046

SHIP TO: same

Subject to review: 12/30/2021

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	ORION Cellular meter reading solution	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days
QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT
1. Water Meters with Encoder register & ORION Cellular transmitter, complete			
29	5/8"x3/4" Badger Model 25 bronze disc meter with bronze bottom, HR-E 8-dial encoder register, 5' Twist Tight connector, CF, with ORION LTE-M Cellular transmitter, Twist Tight connector	\$ 240.00	\$ 6,960.00
10	1" Badger Model 55 bronze disc meter with bronze bottom, HR-E 8-dial encoder register, 5' Twist Tight connector, CF, with ORION LTE-M Cellular transmitter, Twist Tight connector	\$ 359.00	\$ 3,590.00
6	1-1/2" Badger Model 120 bronze disc meter with test plug, HR-E 8-dial encoder register, 5' Twist Tight connector, CF, with ORION LTE-M Cellular transmitter, Twist Tight connector	\$ 560.50	\$ 3,363.00
2. Retrofit existing meter - Encoder register & ORION Cellular transmitter			
269	HR-E 8-dial encoder register, 5' Twist Tight connector, with ORION LTE-M Cellular transmitter w/Twist Tight Connector	\$ 173.00	\$ 46,537.00
	provides 15 minute call-in data, up to 4x per weekday		
	*specify meter model #		



QUOTATION

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: March 16, 2021
 QUOTED BY: Kathy Richards
 REQUESTED BY: Brian Ukestad
 PHONE: 408-623-6948
 EMAIL: brian.ukestad@wsmwater.com

BILL TO: West San Martin Waterworks
 1005 Highland Ave.
 San Martin, CA 95046

SHIP TO: same

Subject to review: 12/30/2021

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	ORION Cellular meter reading solution	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days
QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT
3. One Time Setup charge			
1	Engagement Fee	\$ 2,500.00	\$ 2,500.00
	This fee includes the setup and activation of the customer's BEACON AMA portfolio and the initial licensing of the BEACON AMA Software		
1	Billing Integration services by Badger Meter	\$ 675.00	\$ 675.00
	Includes work done by Badger Meter to integrate the District's billing system with BEACON. This includes evaluation of the import file into BEACON as well as the configuration and testing of a billing read file from BEACON.		
4. Training			
1	Getting Started with BEACON AMA #69328-301	\$ 1,175.00	\$ 1,175.00
	This course covers a walkthrough of basic software functionality, user interface and billing cycle/billing integration		
			SUBTOTAL \$ 64,800.00
Sales Tax: 9.00% Santa Clara County			SALES TAX \$ 5,440.50
*sales tax calculated at rate in effect at time of shipment, final destination			FREIGHT included
Est. Lead Time: To be provided at time of order.			TOTAL \$ 70,240.50
5. Monthly Subscription Fee			
314	#68886-104 subscription fee service unit for ORION Cellular LTE endpoints (per meter, per month)	\$ 0.95	\$ 298.30
	Subscription Fee includes:		
1	BEACON AMA Advanced Metering Analytics software	included	\$ -
	Hosted software platform. Internet access is required.		
1	EyeOnWater Consumer Engagement website and smartphone/tablet app	included	\$ -