

**PROJECT PROPOSAL FOR BUREAU OF RECLAMATION
FUNDING ANNOUNCEMENT NO. BOR-DO-18-F009**

**WALSH RURAL WATER DISTRICT
2018 REMOTE READ WATER METER PROJECT**

SUBMITTED BY:
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TECHNICAL PROPOSAL
1.0 EXECUTIVE SUMMARY

Date: 07/19/18
Applicant Name: Walsh Rural Water District (WRWD)
City: Grafton
County: Walsh
State: North Dakota

WRWD located in Grafton, North Dakota, proposes to add new residential Automatic Meter Read (AMR) systems, which are composed of AMR compatible meters and SmartPoint heads, to all traditional and bulk users within the WRWD system. The AMR system would be able to provide real time data to WRWD staff rather than having to manually read meters to decipher if the user is using water, leaking water, or stealing water. The current meter arrangement does not allow for proper leak detection throughout the system due to the fact the meters are older, manual read meters. The addition of the first phase (24.22 AF/yr) and second phase (40.944 AF/yr) of the new AMR system anticipates reducing current water loss from ~135.27 acre-feet (AF) to ~70.106 AF. WRWD will provide in-kind work and monetary work from their current reserves to fund their share of the project. Currently, WRWD loses \$99,062 per year for water that is lost within the distribution system.

1.1 Proposed Project Schedule

Based on the anticipated project requirements, a proposed schedule for project implementation is presented in Table 1.1. A change in scope would most likely be related to funding approval or the ability to obtain the required number of meters from the supplier. It is unlikely that legal or financial troubles would delay progress schedule. It is anticipated that ~thirty four (34) AMR systems will be installed per month.

Date	Event	Anticipated Monthly Expenses
Jan-19	Install Meters 0-34	\$12,246.46
Feb-19	Install Meters 35-68	\$12,246.46
Mar-19	Install Meters 69-102	\$12,246.46
Apr-19	Install Meters 103-136	\$12,246.46
May-19	Install Meters 137-170	\$12,246.46
Jun-19	Install Meters 171-204	\$12,246.46
Jul-19	Install Meters 205-238	\$12,246.46
Aug-19	Install Meters 239-272	\$12,246.46
Sep-19	Install Meters 273-306	\$12,246.46
Oct-19	Install Meters 307-340	\$12,246.46
Nov-19	Install Meters 341-374	\$12,246.46
Dec-19	Install Meters 375-415	\$14,767.79

Table 1.1 – Proposed Progress Schedule

The proposed project is not located on federal property; however, this is the second phase of a multi-phase project. WRWD was awarded a small scale WaterSMART grant in 2017 and the project is currently in progress.

2.0 BACKGROUND

2.1 Project Location

An area map of the project location can be found below. The project area consists of Walsh County and a small portion of Pembina County in northeastern North Dakota. WRWD currently serves rural users in Walsh County and a small portion of Pembina County in northeastern North Dakota. WRWD's office is located in Grafton, ND. The area shown in yellow is the 2017 project area, in which the initial 300 AMR systems are currently being installed. Phase 2, the addition of 415 meters is shown in light blue. It should be noted that not all depictions in Figure 1.1 are to scale.

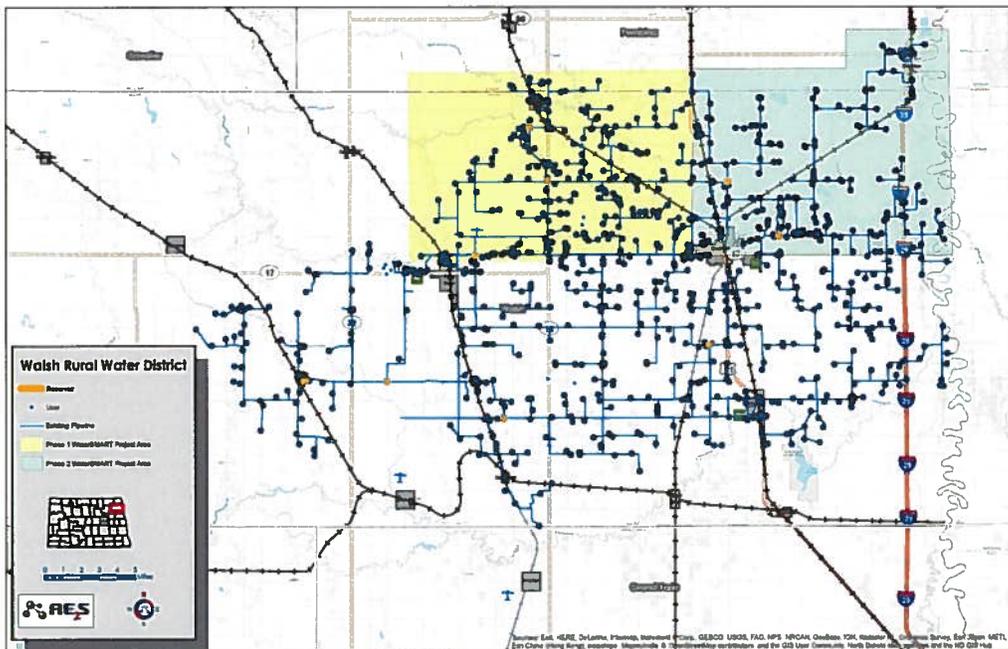


Figure 1.1: Walsh Rural Water District

2.2 Walsh Rural Water District

2.2.1 System Composition

WRWD was originally organized and constructed to supply potable water to approximately 800 rural users in the early 1970's. Through continued expansion; the system currently serves 1,376 users, provides bulk service to the City of Minto and provides metered service to the rural towns of Hoople, Pisek, Lankin and Conway in Walsh and Pembina Counties. The total population served, including the bulk users, is an estimated 4,000. The system is composed of one (1) WTP located in Park River, North Dakota, one hundred eighty-nine (189) miles of 5-inch to 10-inch PVC transmission pipeline, five hundred thirty-eight (538) miles of 1.5-inch to 4-inch PVC distribution pipeline, and six (6) water transfer stations/reservoirs.

WRWD would like to add additional users on to the system, but with only 2 operators and not enough available budget to hire another operator WRWD cannot afford to expel the additional resources. Much of the current operator's time is spent chasing down leaks and reading and fixing faulty meters. Since it is extremely time consuming to find leaks and fix meters, system operators do not have much time to tend to other important matters within the system. Most of the current 1,376 WRWD users have the old manual read meter setups which require much more attention than their newer AMR system counterparts. The existing meter setups are so dated that they do not pass current EPA standards for lead in the fixtures. Current EPA standards from Section 1417 of the Safe Drinking Water Act (SDWA) prohibits the "use of any pipe, any pipe or plumbing fitting or fixture, any solder, or any flux, after June 1986, in the installation or repair of (i) any public water system; or (ii) any plumbing in a residential or non-residential facility providing water for human consumption, that is not lead free." WRWD is still permitted to use these existing fixtures, but it is highly recommended that the existing meters be replaced with new "lead free" meters, thus it is imperative that WRWD begin replacing these meters with the new AMR systems.

It is WRWD's hope that with the addition of the new AMR systems they will be able to cut water losses and revenue losses by being able to track down potential issues within the Water District. If revenue loss is reduced, additional funds will become available to the system. With more funds available comes the potential of another hire, which in turn leads to the potential to add on rural users to the system, who desperately need rural water. WRWD's goal is to be able to keep expanding to serve all of the water needs within the system boundaries.

Reservoir ID	Storage Volume
	(gallons)
Reservoir #1	180,000
Reservoir #3	40,000
Reservoir #4	580,000
Reservoir #6	80,000
Reservoir #8	40,000
Reservoir #9	40,000
Total Storage	960,000

Table 2.1 – Storage Capacity

2.2.2 Water Source

WRWD obtains its finished water supply from the water treatment plant in Park River. The existing water quality throughout WRWD is generally classified as satisfactory to good. It meets or exceeds all Federal and State Requirements. Water quality analyses were obtained from WRWD (Park River) distribution system in 2015.

Until 2007, WRWD owned and operated an iron and manganese water treatment plant to treat raw groundwater from a well field supply. The plant was in need of significant upgrades or replacement to address aging infrastructure and equipment coupled with

the need for expanded capacity to serve additional users. Because the District’s plant only removed iron and manganese, the finished water was very hard, which resulted in complaints from their membership. To address the hard water, the majority of WRWD members used home water softeners at a significant monthly expense over and above their normal monthly water bill. WRWD saw the option of purchasing softened water from a regional treatment facility as a significant water quality improvement opportunity.

The City of Park River owned and operated a 600 gpm lime softening plant that treated raw surface water obtained from the Homme Dam. Although the City’s existing plant could adequately treat the water to meet current Federal drinking water standards, the City was faced with ever increasing finished water quality regulations, seasonal water quality issues that hindered treatment, and major upgrades to keep their facility up-to-date and fully functional. Throughout the early 2000’s AE2S worked with the City of Park River and WRWD to implement a new regional water system, which would incorporate a new unique water source, in which WRWD would buy its water from the City of Park River.

The aforementioned raw water supply was the Stanley R. Mickelson Water Complex. The Stanley R. Mickelson Water Complex was a groundwater supply system owned and operated by the US Air Force. The system consisted of ten wells and associated well houses, an underground reservoir and booster station, and a steel raw water transmission pipeline. Due to military realignment proceedings, the government’s groundwater supply system and associated water rights were no longer needed and the system was declared surplus property. AE2S worked closely with the City of Park River and the US Air Force to acquire this surplus property to serve as the new groundwater supply for the regional water system. The acquisition required no monetary exchange, but the City was required to place the system into operation and maintain it for beneficial use for the next 30 years.

Raw water is withdrawn from the Fordville Aquifer by means of 10 wells. Park River and WRWD hold a combined 5 raw water withdrawal permits, which are presented in Table 2.2, with total allocation of 1,414 acre-feet of groundwater annually with a maximum withdrawal rate of 3,270 gpm. In 2016, Park River sold a total quantity of 369.5 acre-feet to WRWD.

Permit No.	Permit Holder	Appropriation (annual acre-feet)	Max Pumping Rate (gpm)	Status
ND #1679	City of Park River	200	1000	Perfected
ND #5081	City of Park River	410	600	Perfected
ND #1876	WRWD	235	950	Perfected
ND #3293	WRWD	269	120	Perfected
ND #5053	WRWD	300	600	Perfected
Total		1,414	3,270	NA

Table 2.2: City of Park River Permit Information – Fordville Aquifer

2.2.3 Water Use

WRWD serves 1,376 rural users including metered service to the towns of Hoople, Pisek, Lankin, and Conway as well as provides bulk service to the city of Minto. These customers are served via 700 miles of transmission and distribution pipeline, six reservoirs/pumping stations, and one in-line booster station.

Currently, WRWD purchases finished water from the City of Park River. In 2017, WRWD purchased 405.9 AF of finished water, however total quantity of water sold by WRWD only amounted to 304.56 AF, resulting in 25% water loss.

WRWD currently sells 51.3 AF/yr of water to bulk accounts, and the remaining 253.26 AF/yr to 1,376 users, which equates to 0.18 AF per user per year.

2.3 Bureau of Reclamation Involvement

WRWD was awarded the 2017 WaterSMART grant small scale water efficiency project. WRWD is currently installing the AMR system to complete the 2017 WaterSMART project.

3.0 TECHNICAL PROJECT DESCRIPTION

3.1 Problem and Needs

3.1.1 Distribution System Losses

Currently, 25% or 101.34 AF/yr of water that is pumped into the distribution system from the Park River WTP is being lost. This water is either being stolen by customers, leaked into the ground, not captured by current meters or loss during water breaks. The WRWD system is striving to reduce water loss, however the meters monitoring use by their residential customers are not accurate or able to provide them with instantaneous or even daily reads. They are all read manually by the user. The addition of the second phase of implementation of an AMR system will help WRWD track water loss by zones, or households where the water may be leaked/stolen. It is anticipated that the phase 1 portion of the project (addition of 300 new meters) will help reduce water loss by 16.72 AF, once all the meters are installed.

3.1.2 Residential Losses

Currently, a study conducted by the Environmental Protection Agency (EPA) states that average water loss through a residential home, i.e. leaky appliances or plumbing, is 13.7% of total water use. Therefore, it is estimated that each WRWD resident loses $13.7\% \times 0.18 \text{ AF} = 0.02466 \text{ AF/yr}$ through residential plumbing leaks. The total water loss that can be attributed to residential plumbing leaks in 2017 is $(1,376 \text{ users} \times 0.02466 \text{ AF/yr}) 33.93 \text{ AF/yr}$.

Therefore, the distribution system losses coupled with the residential losses through leaky appliances and plumbing is $101.34 \text{ AF/yr} + 33.93 \text{ AF/yr} = 135.27 \text{ AF/yr}$.

3.2 Problem and Needs Addressed

3.2.1 Implementation

The intent of the proposed project is to begin the second phase of AMR system installation. In 2017, the water loss throughout the distribution and in-house plumbing was 135.27 AF/Yr. WRWD staff have been entering users' households, testing and replacing faulty residential meters, and upgrading with new AMR systems. Currently, WRWD is installing the first phase of the AMR system, the first phase impacts 300 out of the 1,376 rural customers. Under this first phase of the WaterSMART project, WRWD expects that they will reduce water loss by 24.22 AF/yr., which would bring remaining loss from 135.27 AF/yr to 111.05 AF/yr.

This second phase would impact an additional 415 users. WRWD plans on phasing the second part of the AMR meter project over the course of 12 months, with a completion date in 2019. If awarded, the WaterSMART grant, WRWD would be able to start implementing the proposed water meter replacement project. The savings earned from reducing water loss could help offset the need to raise users water rates. Grant funding will be used as a 50% contribution to the project, while the other 50% of project funding would be contributed by WRWD through monetary, in kind work, equipment, labor, materials, and installation of the AMR systems. It is anticipated that the installation of Phase 1 and Phase 2 will bring the total water loss from 135.27 to 70.11 AF/yr.

By implementing the proposed project over the course of the next year with assistance from the Bureau of Reclamation (BOR), it is estimated that WRWD could save up to 135.27 AF/yr in water loss by the time all users in the system have transitioned to AMR systems, ultimately conserving water and promoting energy efficiency.

3.3 Expected Outcomes

3.3.1 Residential Losses

WRWD would find residential losses by looking at the water usage at low or no flow periods, often at night. They would determine if a user is using water during those periods. If they were, WRWD would evaluate if water usage was sporadic or constant. If it was constant, it's very likely it would be leaky appliances. WRWD would notify the user of the usage, and determine if it was accidental or intentional usage. As stated in section 3.1.2, WRWD anticipates the addition of 415 meters would reduce residential water loss by $415 \times .02466 \text{ AF/yr} = 10.234 \text{ AF/yr}$.

3.3.2 Distribution Losses

The installation of new remote read meters would not replace faulty meters with the same type meter, but rather replace existing manual read meters with new technologies to better assist with water conservation by being able to utilize AMR technologies. AMR meter technology is far superior to the original manual read meters that currently exist in the system. Currently, WRWD users are supposed to read and report their meter readings each month and are billed according to the reported reading.

The manual read meter system allows for discrepancies between the actual water used versus the reported water use. These discrepancies could be accidental recording errors or even intentional reporting errors by the water user. Water theft from WRWD customers has been an ongoing problem within the system. AMR systems will alleviate the issue. With new AMR systems in place, WRWD users will no longer have to read and report their monthly meter readings. Data will be transmitted via the SmartPoint heads, which are installed with the AMR meter, and automatically transmitted to the tablet that the WRWD employee's use.

The new AMR meter system is anticipated to reduce system water loss by allowing WRWD operators the ability to find water that is lost through leaks in the distribution system, stolen by WRWD users or lost through user appliances. The new AMR system will allow WRWD to see a snap shot in time of water usage, versus seeing a whole months billing/estimated usage. WRWD is divided into 7 different metered zones, therefore having a master meter showing how much water is being pumped to each zone, paired with residential meters recording the amount of water being consumed at any given time; WRWD will be able to locate problem areas and remedy the potential water loss problems. By having the ability to monitor the water pumped from a Reservoir and water consumed at each individual meter within the defined area, WRWD will be able to successfully track progress and determine the overall effectiveness of the new meters. It is estimated that each meter installed will help find a portion of the lost water. For quantifying purposes, WRWD estimates that if 101.34 AF is currently being lost through the distribution system, that the addition of 1376 AMR systems will reduce water loss to to near 0, by being able to track flows. Therefore, each AMR system will reduce system losses by $(101.34 \text{ AF}/1376 \text{ user}) 0.074 \text{ AF/user}$.

Total water loss throughout the WRWD distribution system was 101.34 AF in 2017. It is anticipated the addition of the new 300 AMR meters acquired by 2017 small scale WaterSMART grant over the next several months will help WRWD reduce distribution water loss from 101.34 AF to 79.14 AF. It is anticipated that the second phase of the project (2018 REMOTE READ WATER METER PROJECT) will reduce water loss by an additional $(.074 \times 415) 30.71 \text{ AF}$, for a total of 52.91 AF reduction in water loss throughout the distribution system.

Therefore, WRWD estimates that the addition of 415 new AMR systems will reduce water loss from both Residential plumbing and the system distribution system by 10.234 AF/yr + 30.71 AF/yr, respectively for a total water savings per year of 40.944 AF. It would be WRWD's goal to reduce water loss to a value close to zero. WRWD expects that with the addition of the new AMR system will help them achieve their goals.

4.0 EVALUATION CRITERIA

Application Evaluation Scoring Criteria (Answers seen in blue)

E.1.1. Evaluation Criterion A—Project Benefit (35 points)

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

- What are the benefits to the applicant's water supply and delivery system. WRWD will strive to reduce water loss within their system to close to 0%. Currently, most of the 1,376 residential meters are manual read meters. The meters are supposed to be read each month by the residents, with the monthly usage sent to WRWD for calculation of payment. However, many users do not read their meters or do not read them correctly. When a meter is misread or not read, WRWD staff are not aware of how much water they are losing month to month. The AMR systems will allow WRWD to trend the amount of water lost daily. Also, it will provide WRWD the opportunity to track the amount of water that passes through the residential meters on a real-time basis. This will not only help WRWD to track leaks throughout their distribution system, but also WRWD will be able to find leaks throughout users' current plumbing/appliances.

The 25% (101.34 AF) water loss throughout the delivery system coupled with the EPA's average of 13.7% (33.93 AF) lost through home owner's appliances amounts to 135.27 AF of water lost per year. The new meter technology will not only help WRWD operators track down leaky system branches, but it will help customers conserve water by being notified by WRWD when water use seems erratic or out of the ordinary.

After the project is complete, WRWD will monitor water usage and water pumped daily. They will determine the most likely areas water is being lost or stolen. They will concentrate their efforts to these areas to fix the problems. Each month they will compare water loss to the previous year. The idea would be to trend water loss from 135.27AF to approximately 0 AF throughout the system over the course of the project. WRWD intends to remedy these problem areas by fixing leaks that are found in the distribution system, and by closely monitoring water usage WRWD will be able to more easily locate areas of unauthorized connection and ensure all current users are metered properly.

In 2017, 101.34 AF of water was lost throughout the distribution system, this amounts to 33,020,882 gallons. It costs WRWD \$3 to buy and pump a 1000 gallons of water, which means WRWD lost \$99,062 in water in 2017. With the addition of the 415 new AMR meters systems WRWD would reduce the annual expense by \$29,877 and approximately 9,959,059 per year.

- If other benefits are expected explain those as well. Consider the following:
 - Extent to which the proposed project improves overall water supply reliability: [See above](#).
 - The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin): [Does Not Apply](#).
 - Extent to which the proposed project will increase collaboration and information sharing among water managers in the region: [WRWD expects the AMR systems to drastically reduce system water loss, WRWD has already seen positive trends of water loss reduction in several nearby water districts that can be contributed to AMR Systems. The managers of these districts, which utilize AMR systems, have been giving presentations to other managers and board members of districts which have the older](#)

style meters and demonstrating the effectiveness of the AMR systems. Once, these presentations are heard, system owners can incorporate/budget for the appropriate AMR systems that will suit them best, increasing water conservation throughout the region.

- Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)
Utilizing new AMR systems will reduce the amount of water that will be lost throughout WRWD. With a more efficient water district, more capacity will be created that can be used to benefit the agricultural sector. During spray season, the system is generally stretched to its water capacity limits, by eliminating water loss more capacity will be generated, providing more flow for farmers to use for spraying. When water loss is reduced, there would also be a benefit to the environment. Benefits can be attributed to less chemicals used during water production and less power used for the pumping of the lost water. The utilization of new AMR technologies will also help to keep water rates low, since WRWD will not have to account for water loss in its future pricing.
- Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.
By implementing AMR systems on-farms, efficiencies will be recognized; by allowing the district to tell the farmer if any water is being lost through their meter, as well as provide the farmer with a snapshot of water used over a period of time.

E.1.2. Evaluation Criterion B—Planning Efforts Supporting the Project (35 points)

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

- Does the proposed project implement a goal or address a need or problem identified in the existing planning effort? This project is the second phase of a multi-phase project, that is removing the old manual read meters, and installing new AMR systems. It is anticipated that installation of 1,376 AMR systems will help reduce water loss to a value near zero.
- Explain how the proposed project has been determined as a priority in the existing planning efforts as opposed to other potential project/measures.
Currently, WRWD loses 101.34 AF/yr of water throughout their distribution system. This water is either stolen, leaked into the ground, or ran through a meter that is not working properly. It is anticipated that every 1 AF of water lost, costs WRWD \$977.52 to make and distribute. Therefore, WRWD has nearly \$99,062 in expenses attributed to water loss, in order to continue to provide affordable water to its customers, eliminating/reducing water loss over the next 4 years by the addition of new AMR system is WRWD's highest priority.

E.1.3. Evaluation Criterion C—Project Implementation (10 points)

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

See Section 3.3.

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

No permits will be required.

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

Assistance with 2018 WaterSMART application.

- Describe any new policies or administrative actions required to implement the project. To implement this project, the WRWD Board of Directors had to approve the spending of the total project costs.

- Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office? This would be the second phase of the AMR project, with the first phase being cost shared by BOR. All AMR systems will be installed within existing homes, therefore there will be no issues meeting environmental compliance.

E.1.4. Evaluation Criterion D – Nexus to Reclamation (10 points)

- 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.

The applicant does not receive project water.

- Is the project or Reclamation project lands or involving Reclamation facilities?

The first phase of the project was funded with reclamation dollars.

- Is the project in the same basin as Reclamation project or activity?

The first phase of the project was funded with reclamation dollars.

- Will the proposed work contribute water to a basin where a Reclamation project is located? The first phase of the project was funded with reclamation dollars.

- Will the project benefit any tribe(s)? No tribes are located within WRWD territory.

E.1.5. Evaluation Criterion E—Department of the Interior Priorities (35 points)

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

- Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment; WRWD will utilize new technology (AMR system) which will allow them to see an instantaneous snapshot of water that is being lost or stolen verses trying to compare to monthly water meter readings, using out dated technology.

- Examine land use planning processes and land use designations that govern public use and access; N/A

- Revise and streamline the environmental and regulatory review process while maintaining environmental standards. N/A

- Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity; By installing an AMR system, WRWD will have an enhanced ability to conserve water. The ability to conserve water will free up water capacity for others, which will result in increased water capacity.

- Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands; N/A

- Identify and implement initiatives to expand access to DOI lands for hunting and fishing; N/A

- Shift the balance towards providing greater public access to public lands over restrictions to access. [N/A](#)

2. Utilizing our natural resources

- Ensure American Energy is available to meet our security and economic needs; [By reducing or eliminating water loss, WRWD would conserve energy in many functions. It would reduce pumping from the wells to the WTP, reduce power needed to treat the water, and reduce power needed to pump the water into the distribution. All lost water is wasting energy by excessive pumping.](#)
- Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications; [N/A](#)
- Refocus timber programs to embrace the entire 'healthy forests' lifecycle; [N/A](#)
- Manage competition for grazing resources. [N/A](#)

3. Restoring trust with local communities

Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands; [N/A](#)

Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities. [WRWD will work with other water authorities and local water users, emphasizing the conservation of water and the importance of all water to be metered.](#)

4. Striking a regulatory balance

- Reduce the administrative and regulatory burden imposed on U.S. industry and the public; [N/A](#)
- Ensure that Endangered Species Act decisions are based on strong science and thorough analysis. [N/A](#)

5. Modernizing our infrastructure

- a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure; [The addition of the new AMR system will modernize existing infrastructure eliminating the use of outdated meters that are from the 1970's.](#)
- b. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs; [N/A](#)
- c. Prioritize DOI infrastructure needs to highlight:
 1. Construction of infrastructure;
 2. Cyclical maintenance;
 3. Deferred maintenance.

5.0 PROJECT BUDGET

5.1 Letters of Commitment

[WRWD will utilize their reserve funds for their cost share portion of the project.](#)

5.2 Funding Plan

5.2.1 Question Breakdown

1. How will you make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments)

WRWD will use both monetary and in-kind work contributions to pay for the project. The monetary contributions will use reserve funds to pay for all project expenses incurred during the project to meet grant cost share percentages. The in-kind work will include the installation of all AMR systems in user's homes by WRWD staff.

2. Describe any donations of in-kind costs incurred before the anticipated Project start date that you seek to include as project costs:

Not applicable.

3. Describe any funding requested or received from other Federal partners.

No other federal funds will be used during the WaterSMART project.

4. Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.

At this time, there is no pending funding.

Table 5.1 below breaks down a summary of the non-federal and other federal funding sources. Please note that in-kind contributions are denoted with an asterisk (*)

Funding Sources	Funding Amount
Non-Federal Entities	
Walsh Rural Water District*	\$ 51,123.85
Walsh Rural Water District	\$ 23,700.00
Non-Federal subtotal:	\$ 74,823.85
Other Federal entities	
<i>Other Federal Subtotal:</i>	\$ 0
Requested Reclamation Funding:	\$ 74,655.00
Total Project Funding:	\$ 149,478.85

Table 5.1 – Summary of non-Federal and Federal funding source

5.3 Budget Proposal

Table 5.2 provides a budget breakdown for the proposed project.

Budget Item Description	Computation			Total Cost	Recipient Funding	Reclamation Funding
	Unit	\$/Unit	Quantity			
SALARIES AND WAGES						
Manager	hrs	\$41.67	415	\$17,293.05	\$17,293.05	\$0.00
Operator 1	hrs	\$20.25	0	\$0.00	\$0.00	\$0.00
Operator 2	hrs	\$18.00	415	\$7,470.00	\$7,470.00	\$0.00
Administrative Assistant	hrs	\$20.50	415	\$8,507.50	\$8,507.50	\$0.00
FRINGE BENEFITS						
Manager	hrs	\$15.42	415	\$6,399.30	\$6,399.30	\$0.00
Operator 1	hrs	\$14.09	0	\$0.00	\$0.00	\$0.00
Operator 2	hrs	\$13.10	415	\$5,436.50	\$5,436.50	\$0.00
Administrative Assistant	hrs	\$14.50	415	\$6,017.50	\$6,017.50	\$0.00
MATERIALS AND SUPPLIES						
Meters with Encoded Register	ea.	\$112.00	415	\$46,480.00	\$11,200.00	\$35,280.00
Smart Point Heads	ea.	\$125.00	415	\$51,875.00	\$12,500.00	\$39,375.00
ENVIRONMENTAL AND REGULATORY COMPLIANCE QUOTES						
Environmental Compliance	L.S.	\$0.00	0	\$0.00	\$0.00	\$0.00
TOTAL ACTIVITY COSTS				\$149,478.85	\$74,823.85	\$74,655.00

Table 5.2 – Summary of Budget Proposal

Table 5.3 provides a funding breakdown by funding source.

Funding Source	% of total project costs	Total cost by source
Recipient Funding	50.06%	\$74,823.85
Reclamation Funding	49.94%	\$74,655.00
Other Federal Funding	0.00%	0
Totals	100.00%	\$149,478.85

Table 5.3 – Funding Sources**5.4 Budget Narrative****5.4.1 Salaries and Wages**

Table 5.2 provides a breakdown of the wages for WRWD staff. The existing WRWD staff will install all AMR systems during the project. It is estimated that it will take two hours to install each system. Key staff includes Manager Brian Reilly and Corey Anderson (operator 2) who will be splitting time, installing AMR systems. Jeff Wilmer (operator 1) will not install any AMR systems, due to lack of available time.

It is estimated that it will take one hour per AMR system installed for the administrative assistant to contact each residence, issue new meter numbers in accounting software and correspondence between home owner and operator. Key staff includes Administrative Assistant, Janice Elshaug, whom will provide support to the staff and homeowners.

5.4.2 Fringe Benefits

Currently, the manager, the operators, and the administrative assistant receive fringe benefits. Fringe Benefits are approximately \$13.10 to \$15.42 an hour depending on employees.

5.4.3 Travel

Travel is not eligible and will not be requested for reimbursement.

5.4.4 Equipment

All equipment used under the project is under \$5,000 in value and are comprised of small hand tools.

5.4.5 Materials and Supplies

The primary materials will be the AMR Meters and SmartPoint heads. WRWD worked with Dakota Supply Group to obtain the costs for the AMR Meters and SmartPoint heads.

5.4.6 Contractual

None anticipated.

5.4.7 Environmental and Regulatory Compliance Costs

It is anticipated that there will be no environmental and regulatory costs because all of the AMR systems will be installed in residences. Therefore, no percentage of the project cost was budgeted for Environmental and Regulatory Compliance because this is a non-construction project with no ground disturbance anticipated.

5.4.8 In-Direct Costs

No in-direct costs are anticipated.

5.4.9 Total Costs

Total project cost can be found in Table 5.2.

5.5 Budget Form

See Appendix B for Budget Forms SF-424, SF-424A, and SF-424B.

6.0 ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

6.1.1 Environmental Compliance Questions

Below are the questions from the FOA Section IV.D.6 Environmental Cultural Resources and Compliance, answers can be seen in [blue](#).

(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 impact to the surrounding environment will be negligible during the installation of the AMR systems. WRWD will take all steps necessary to minimize any air, water or animal habitat during installation of the remote read meters.](#)

(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?

[Within the project area there are four listed species that are threatened or endangered. These species are the Northern Long-Eared Bat, the Whooping Crane, the Gray Wolf, and the Sprague's Pipit. Although there are listed endangered species in the project area, none will be affected with the implementation of the proposed project since AMR system installations will take place within residences, in which none of these endangered species will reside.](#)

(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.

[Yes, but the project will have no impact upon the waters of the United States because all meters will be installed within residential homes.](#)

(4) When was the water delivery system constructed?

[The water system was constructed between the early 1970's.](#)

(5) Will the project result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, 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 will be made to irrigations systems.](#)

(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 or structures from the National Register of Historic places will be affected.](#)

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

There are no known archeological sites in the proposed project area which would be affected.

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

The project will have a positive impact on low income and minority populations by potentially saving them money. The new meters will help to find water leaks within the residences plumbing which will decrease their overall water use bill each month. New AMR systems will also help to cut system losses. A decrease in system losses means lower monthly billing prices.

(9) Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The project will not limit access to ceremonial sacred sites and will not have impacts upon any tribal lands.

(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?

The project will not contribute to the introduction, continued existence, or spread of noxious or non-native invasive species known to occur in the area.

7.0 REQUIRED PERMITS OR APPROVALS

No permits are required.

8.0 OFFICIAL RESOLUTION

See Appendix A

APPENDIX A – OFFICAL RESOLUTION

**OFFICIAL RESOLUTION OF THE EAST CENTRAL REGIONAL WATER
DISTRICT REGARDING PARTICIPATION IN FUNDING FOR A
BUREAU OF RECLAMATION WaterSMART GRANT PROJECT.**

A. WHEREAS, the United States Department of the Interior, Bureau of Reclamation, under its WaterSMART Grant Program, has made available to qualifying applicants grant funding on a matching fund or challenge grant basis funds for water conservation and management projects; and

B. WHEREAS, *Walsh Rural* Water District has identified a project that exemplifies the objectives of the WaterSMART grant program in its Advanced Metering Structure Program;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Walsh Rural Water District:

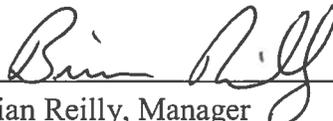
1. The Board of Directors verifies that (Keith Nilson) has legal authority to enter into an agreement with Reclamation.
2. The Board of Directors has reviewed and supports the application submitted.
3. The Board of Directors is capable of providing the amount of funding and/or in-kind contributions specified in the funding plan.
4. That if selected for a WaterSMART Grant under the Fiscal Year 2018, the board will negotiate and execute a Cooperative Agreement with Reclamation on/or prior to the established deadline, to fund at least 50% of the project costs and provide documentation showing the sources of non-Reclamation funding that totals 50% of project costs for the Project.

ADOPTED AND APPROVED this 19th day of JULY 2018.



Keith Nilson, President

Attest:



Brian Reilly, Manager