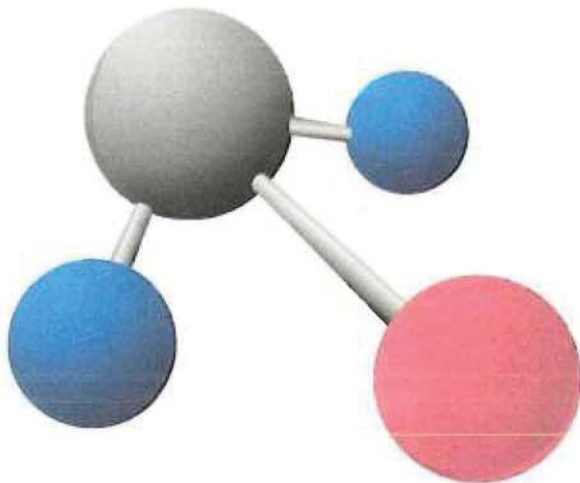


**REMOTE READ
WATER METER
PROJECT**

PREPARED FOR:

**Walsh Rural
Water District,
Grafton, ND**



*Funding Announcement No. BOR-DO-17-F011
AE2S Project No. P00125-2016-000
March 20, 2017*

**PROJECT PROPOSAL
WaterSMART:
Water and Energy Efficiency
Grants for FY 2017**

Advanced Engineering and Environmental Services, Inc.
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I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of North Dakota.

Geoff Slick

Geoffrey Slick, PE

Date: 3-20-17

Reg. No: PE-9235

**PROJECT PROPOSAL FOR BUREAU OF RECLAMATION
FUNDING ANNOUNCEMENT NO. BOR-DO-17-F011**

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

**SUBMITTED BY
BRIAN REILLY, MANAGER
WALSH RURAL WATER DISTRICT
14768 HIGHWAY 17
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March 20, 2017

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1.0 EXECUTIVE SUMMARY

Walsh Rural Water District (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 the 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. This is because the current meters in use are the older manual read meters. The meters are in fact so dated that they do not pass current EPA regulations on lead and copper allowances.

The intent of this project is to begin the first phase of AMR system installation which would impact the first 300 of 1,376 WRWD users. WRWD plans to phase the first part the AMR meter project over the course of eight months with a completion date of May, 2018. Currently none of WRWD's users have AMR systems, but instead have manual read meters. If awarded the WaterSMART grant WRWD would be able to start implementing the proposed water meter replacement project and hence the savings earned from reducing water loss could help to offset the need to raise customer's 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 the owner through monetary, in kind work, equipment, labor, and materials from WRWD installation of the AMR systems.

Currently, water loss throughout the system is 76.69 AF/yr through leaks or stolen water. It is estimated that WRWD customers also lose 34.4 AF/yr through residential plumbing. System water loss coupled with residential water loss result in an estimated annual water loss of 111.09 AF/yr in 2016 for WRWD customers. Under the WaterSMART grant WRWD expects that they will reduce water loss by 16.72 AF/yr + 7.5 AF/yr = 24.22 AF/yr with the installation of the initial 300 AMR Systems. By implementing the proposed project over the course of the next 4 years with the help from The Bureau of Reclamation (Reclamation), it is estimated that WRWD could save up to 111.09 AF/yr in water loss by the time all users in the system have AMR systems, thus conserving water and promoting energy efficiency.

WRWD is looking to expand its system to accommodate more users who are in desperate need of rural water. Currently WRWD is stretched to its water capacity limits as well as available manpower limits. It is WRWD's belief that with a new metering structure, revenue losses can be cut significantly, which in turn can lead to more funding to incorporate more users into the system and could free up enough funding to add another hire or in the least reduce the amount of workload on current staff.

WRWD has not participated with Reclamation in any previous projects but is looking forward to the opportunity of partnering with Reclamation on the proposed meter replacement project.

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 proposed project area, in which the initial 300 AMR systems will be installed under the proposed WaterSMART Grant Project. It should be noted that not all depictions in Figure 1.1 are to scale.

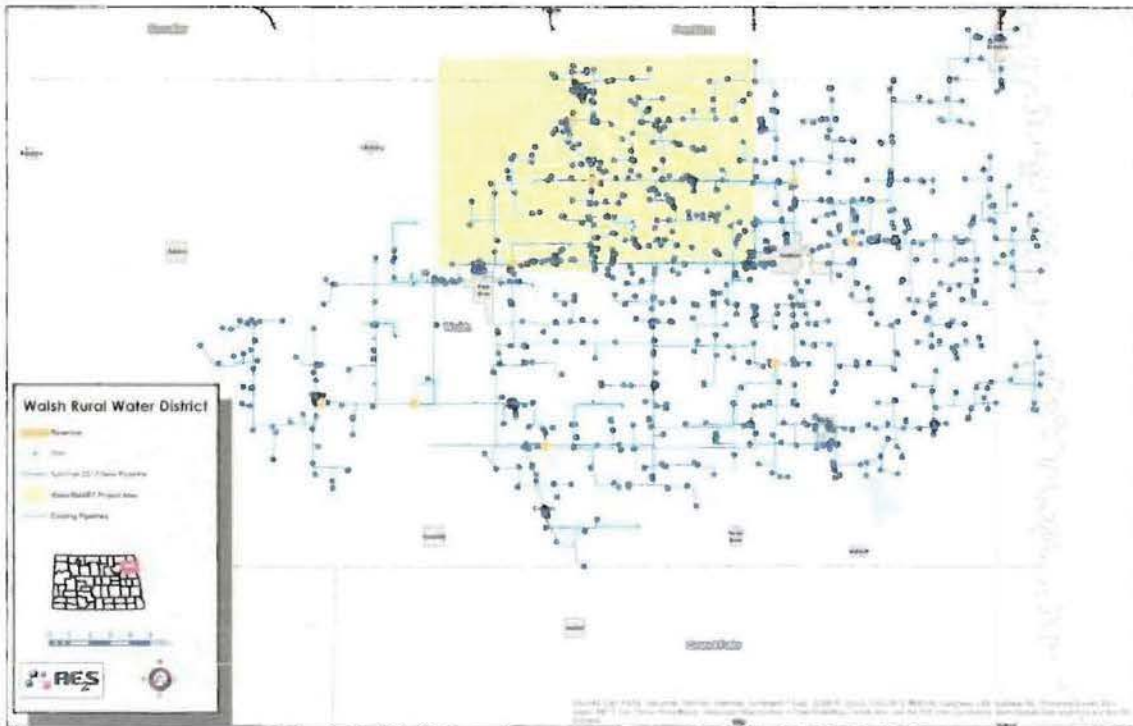


Figure 1.1: Walsh Rural Water District

2.2 Walsh Rural Water District

2.2.1 Background

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.

WRWD continues to grow and is in the process of a much needed system improvements and expansion project to be completed in summer of 2017. This system

improvements project will add 9.5 miles of 6-inch pipeline along County Road 17 to North of Grafton, 8 miles of 6-inch pipeline along County Road 9, an additional 25 miles of 2.0-inch pipeline to serve 17 new users, all which will have the new AMR Systems, and the replacement of 5 pressure reducing vaults. This system improvements plan will drastically increase the capacity in the WRWD system. During spray season in the spring many of these pipelines are stretched to their limits and water pressure is drawn to dangerously low levels.

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 cut more 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.

2.2.2 Water Source

WRWD obtains its finished water supply from the water treatment facility 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 Finished Water Conveyance

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

Currently, WRWD purchases finished water from the City of Park River. In 2016, WRWD purchased 369.5 AF of finished water, however total quantity of water sold by WRWD only amounted to 293 AF, accounting for a 20.75% water loss.

WRWD currently sells 48.46 AF/yr of water to a bulk accounts and 244.38 AF/yr to 1,376 users, which equates to 0.18 AF per user per year.

2.3 Bureau of Reclamation Involvement

WRWD has yet to work on any projects with Reclamation but is looking forward to this possible opportunity.

3.0 TECHNICAL PROJECT DESCRIPTION

3.1 Scope of Work

3.1.1 Distribution System Losses

Due to recent water loss and lack of revenue throughout the WRWD system, staff members have been entering customer's residences and have been testing and replacing faulty residential meters and upgrading with new manual read meters that are capable of being hooked up to AMR meters and SmartPoints. AMR meters automatically collect consumption from the water meter and then transfer the data to a central database for billing. In order for the data to be transferred a SmartPoint head must be installed with each AMR meter. The SmartPoint head is a radio transceiver that gives the operator radio frequency inbound and outbound access to water measurements and ancillary device diagnostics. The SmartPoint heads collect data from the AMR meter, register the data, and then proceed to transmit the data to a collection device, in this instance a tablet. WRWD will use the walk-by/drive-by mode; the SmartPoint will continuously collect data and wait for an activation signal from the tablet when it is within the required distance. Once the signal is received by the SmartPoint, meter readings are transmitted to the collection device (tablet).

The new remote read meter would not replace faulty meters with the same type of meter, but rather replacing 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 exist in the system. Currently WRWD customer's read and report their meter readings each month and then are billed according to the reported reading. These manual read meters allow for discrepancies between the actual water used vs. 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 all but eliminate the issue. With new AMR systems WRWD users will no longer have to read and report their meters. Data will be transmitted via the SmartPoint heads, which are attached to the AMR meter, and automatically transmitted to the collection device (tablet) that the WRWD employee's utilize.

The new AMR meter system is anticipated to reduce system water loss by giving WRWD operators the ability to find water that is lost through leaks in the distribution system or stolen by WRWD customers. WRWD is divided into 7 different metered zones, therefore having a master meter that shows how much water is pumped into each zone, paired with residential meters that record how much is being consumed at a given time; WRWD will be able to locate problem areas and remedy the potential water loss problems.

WRWD intends to implement this project in the yellow area as previously shown in Figure 1.1. This initial area has been selected because it is composed of some of the oldest infrastructure of the system and has the ability to use a master meter at Reservoir 4. Ability to monitor the water pumped from Reservoir 4 and water used 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.

Water loss throughout the WRWD distribution system was 76.69 AF in 2016, it is anticipated the addition of the new AMR meters acquired by this grant over the next several months will help WRWD reduce water loss from 76.69 AF to $\sim (76.69 - (300 \text{ users} / 1,376 \text{ users}) * 76.69 \text{ AF}) = 59.97 \text{ AF}$. Therefore, under the proposed WaterSMART project an estimated 16.72 AF of water loss will be eliminated from the distribution system, due to the addition of 300 AMR meters and SmartPoint heads.

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 $13.7\% \times 0.18 \text{ AF}$ (see section 2.2.3) = 0.025 AF/yr through residential plumbing leaks.

The total water loss that can be attributed to WRWD residential plumbing is 1,376 users $\times 0.025 \text{ AF/yr}$, which equates to 34.4 AF/yr. Being that this project would only account for 300 of the 1,376 users it is anticipated 7.5 AF in the first year will be saved from losses within residential plumbing. WRWD anticipates that under the WaterSMART Grant they would reduce water loss by $16.72 \text{ AF/yr} + 7.5 \text{ AF/yr} = 24.22 \text{ AF/yr}$ after the installation of the first 300 AMR systems.

3.2 Purpose and Objective

WRWD's current manual read meters are in dire need of complete replacement, due to the fact most of the current meter arrangements do not pass current EPA lead and copper allowances. With potential funds from this WaterSMART grant WRWD is looking to start automating and updating its system, by starting to implement a multi-year meter replacement project. In order to start automating the system WRWD needs to purchase 300 AMR systems. These systems are composed of 300 AMR capable meters and 300 SmartPoint heads. It is estimated that the meters and SmartPoint heads will cost a total of \$74,700.00, which will be funded by the WaterSMART grant. This grant requires that half of the project cost is funded by the recipient; hence WRWD plans to fund \$74,737.75 towards the project through monetary, in-kind work,

equipment, labor, and materials from WRWD installation of AMR systems. While Reclamation funds \$74,700.00 via the WaterSMART Grant. It is anticipated that this project will cost \$149,437.75; a budget breakdown can be seen in Table 8.2.

In 2016, WRWD's water loss was 76.69 AF. The annual water loss was calculated by taking the water purchased from the city of Park River, less the water sold to the customers. Similar water districts throughout the region have a system water loss of 0-5%. The final objective of this multi phased project would be to reduce the water loss to a value close to 0% over the course of the multi phased project.

Additional water loss reduction will be achieved by being able to obtain real time data of the water leaving the master meters and the water entering the customers residential AMR meters throughout the whole system. This will allow WRWD to find leaks by knowing which customers are taking water when they are viewing real time data. The water can be narrowed from larger branches to smaller branches. By minimizing project area, leaks will be more easily found, detected and fixed. The ability to track down and repair the leaks is proposed to cut system water losses down from 20.75% to ~0% over the course of the multi phased project.

WRWD will also be able to more readily determine if a customer has a problem within their plumbing, by seeing irregular water uses. The proposed AMR systems would allow for WRWD to find irregularities within water use. After determining irregular water use WRWD would notify the customer of their observation which would allow the customer to fix the problem, in turn saving the district and the customer water loss.

3.3 Proposed Project Schedule

Based on the anticipated project requirements, a proposed schedule for project implementation is presented in Table 3.1. A change in scope would most likely be related to funding approval or the ability to obtain required amount of meters from the supplier. It is unlikely that legal or financial troubles would delay progress schedule. It is anticipated that forty (40) AMR systems will be installed per month.

| Date | Event | Anticipated Monthly Expenses |
|---------------|--|------------------------------|
| 17-Mar | Submit Proposal | \$7,000 |
| Mar – July-17 | Await approval of funding/Begin scheduling AMR System installation | - |
| 17-Aug | Install AMR Systems 1-40 | \$18,991.70 |
| 17-Sep | Install AMR Systems 41-80 | \$18,991.70 |
| 17-Oct | Install AMR Systems 81-120 | \$18,991.70 |
| 17-Nov | Install AMR Systems 121 – 160 | \$18,991.70 |
| 17-Dec | Install AMR Systems 161-200 | \$18,991.70 |
| 18-Jan | Install AMR Systems 201 – 240 | \$18,991.70 |
| 18-Feb | Install AMR Systems 241– 280 | \$18,991.70 |
| 18-Mar | Install AMR Systems 281 – 300 | \$9,495.85 |

Table 3.1 – Proposed Progress Schedule

4.0 EVALUATION CRITERIA

Application Evaluation Scoring Criteria **(Answers in blue)**

E.1.1. Evaluation Criterion A—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?

WRWD has an extensive planning effort in place. One of the steps of this existing planning effort is to reduce water loss via improved water metering. With the installation of 300 AMR systems WRWD will be able to begin the metering step of its water plan. WRWD intends on phasing out all of the manual read water meters with AMR systems. Currently all of the users on the WRWD system have manual read meters, it is WRWD's intent to phase all of these out over the course of the next 4 years with grant assistance, if available.

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

The proposed project has been determined a priority among many other proposed measures due to importance of water loss, which corresponds with a loss of income for WRWD. Currently, WRWD is losing 76.69 AF of water a year or 24,990,440 gallons. This amounts to a value of 24,990,440 gallons x \$7/1000 gallons= \$174,933.08 in revenue lost annually. Water loss can be generally attributed to three different factors; leaks in the system, faulty meters, or water theft.

Due to the age and condition of older meters, WRWD believes a majority of its water loss can be attributed to faulty meters. WRWD has also discovered issues with water theft from homeowners intentionally providing incorrect meter readings over the years. With the addition of the AMR systems water users will not have the opportunity to provide false meter readings because of the new automation features in the AMR systems. With the incorporation of this WaterSMART grant it is expected that WRWD will be saving 16.72 AF of water in the first year, which is equivalent to \$38,139.48 in revenue loss savings. By the time the WRWD system is automated it is anticipated WRWD will save a total of 24,990,440 gallons per year and \$174,933.08 in lost revenue.

E.1.2. Evaluation Criterion B—Project Benefits (35 points)

- Describe the expected benefits and outcomes of implementing the proposed project.
 - What are the benefits to the applicant's water supply delivery system?

WRWD will strive to reduce water loss within their system to close to 0%. Currently, the 1,376 residential meters are manual read meters, which do not meet current EPA regulations on lead and copper allowances. 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.

2017 Meter Replacement

When a meter is misread, WRWD staff are not aware of how much water they are actually losing month to month. The AMR systems will allow WRWD to track 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. Not only will this allow WRWD to track leaks that users may have throughout their current plumbing or that reside throughout the distribution system, but will also help ensure the safety of the water users.

The 20.75% (76.69 AF) water loss throughout the delivery system coupled with the EPA's average of 13.7% (34.4 AF) lost through home owner's appliances amounts to 111.09 AF/yr 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 pumped daily and usage. They will determine the most likely areas water is being lost or stolen and they will concentrate their efforts on these areas to fix the problems. Each month they will compare water loss to previous year in order to trend water loss from 20.75% to approximately 0% 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 illegal connections to their system as well as be able to ensure all current users are metered properly.

In 2016, 76.69 AF of water was lost throughout the distribution system, this amounts to 24,990,440 gallons. WRWD charges customers \$7 per 1000 gallons of water used. Hence, WRWD lost \$174,933.08 in revenue for 2016. With the addition of the 300 new AMR meters systems it is the hope of WRWD that \$38,139.48 and approximately 5,448,497 gallons would be saved in the first 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 scope of positive impact 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 losses. This is because WRWD has already seen the positive trends of water loss reduction in several nearby water systems, which can be contributed to AMR technologies. The managers of these systems, which utilize AMR technologies, have been giving presentations to managers and board members of systems which have the older style meters and demonstrating the effectiveness of AMR systems. Once these presentations are heard system owners are able to incorporate the appropriate AMR systems that will suit them best, hence 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 technologies will reduce the amount of water that will be lost throughout the system. With a more efficient system more capacity will be created that can be used to benefit the agricultural sector. During spray season the system is generally stretched to its capacity limits, by eliminating water loss more capacity will be generated and provide more flow to farmers to use for spraying. When water loss is reduced there would also be a benefit to the environment. Aforementioned 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.

E.1.3. Evaluation Criterion C—Project Implementation (15 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.

With the proposed project the only engineering and design work performed is the WaterSMART Grant Report.

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

In order to implement this project, the WRWD Board of Directors had to approve the spending of the total project costs.

E.1.4. Evaluation Criterion D—Nexus to Reclamation (15 points)

- How is the proposed project connected to a Reclamation project or activity?

WRWD has not worked with Reclamation in the past but is looking forward to the possibility of partnering on this 2017 WaterSMART project and other potential future ventures.

- Will the project help Reclamation meet trust responsibilities to any tribe(s)?

No tribes are located in the proposed project area.

- Does the applicant receive Reclamation project water?

WRWD does not receive Reclamation project water.

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

The project is not on Reclamation project lands and does not involve Reclamation facilities.

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

Not Applicable.

- Will the proposed work contribute water to a basin where a Reclamation project is located?

Not Applicable.

5.0 ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

5.1 Environmental Impact

The environmental impacts are beneficial for the proposed project. The environmental benefits will outweigh any detriments to this project. The environmental impacts recognized from reducing water loss would be directly proportional to chemicals used during water production and power used for the additional pumping of the lost water; however these would be hard to quantify. The power/chemical reduction although not extensive is a way of creating a more "green" system. Also, there will be no new ground disturbance so no environmental impacts are anticipated.

5.2 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 surrounding environment will be little to 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 in Walsh County 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. This is because all of the 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-now, as the system is undergoing additional construction.](#)

(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 rates.

(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.

6.0 REQUIRED PERMITS OR APPROVALS

No permits are required.

7.0 OFFICIAL RESOLUTION

See Appendix A

8.0 PROJECT BUDGET

8.1 Letters of Commitment

WRWD will utilize their reserve funds for their cost share portion of the project.

8.2 Funding Plan

8.2.1 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 both use monetary and in-kind work contributions to the project. The monetary contributions will use reserve funds to pay for all project expenses incurred

during the project in order to meet grant cost share percentages. The in-kind work will include the installation of all AMR systems in user's homes.

2. Describe any costs incurred before the anticipated Project start date that you seek to include as project costs. For each cost, identify:

(a) The Project expenditure and amount:

It is anticipated that the cost incurred prior to the project will be \$7,000 for the WaterSMART Grant Report.

(b) Whether the expenditure is or will be in the form of in-kind services or donations

The cost incurred for the report will be incurred by WRWD financially.

(c) The date of cost incurrence:

March 2017.

(d) How they benefitted the project:

The WaterSMART Grant benefited the project, by quantifying the cost of the project, providing the potential savings, as well as outlining a plan for WRWD to systematically install the AMR meters to successfully minimize system water loss.

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 8.1 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* | \$ 74,737.75 |
| | |
| Non-Federal subtotal: | \$ 74,737.75 |
| Other Federal entities | |
| | |
| Other Federal Subtotal: | \$ 0 |
| | |
| Requested Reclamation Funding: | \$ 74,700.00 |
| Total Project Funding: | \$ 149,437.75 |

Table 8.1 – Summary of non-Federal and Federal funding source

APPENDIX A – OFFICAL RESOLUTION

**OFFICIAL RESOLUTION OF THE WALSH RURAL 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:

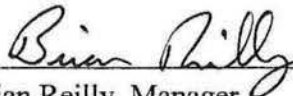
1. The Board of Directors verifies that (Keith Nilson) has legal authority to enter into an agreement with Reclamation.
2. The Board of Directors has reviewed and supports the application submitted.
3. The Board of Directors is capable of providing the amount of funding and/or in-kind contributions specified in the funding plan.
4. That if selected for a WaterSMART Grant under the Fiscal Year 2017, 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 22 day of March 2017.



Keith Nilson, President

Attest:



Brian Reilly, Manager

This appendix consisted of the SF-424 forms, which were moved to the front of the application package. do

APPENDIX B – BUDGET FORMS