

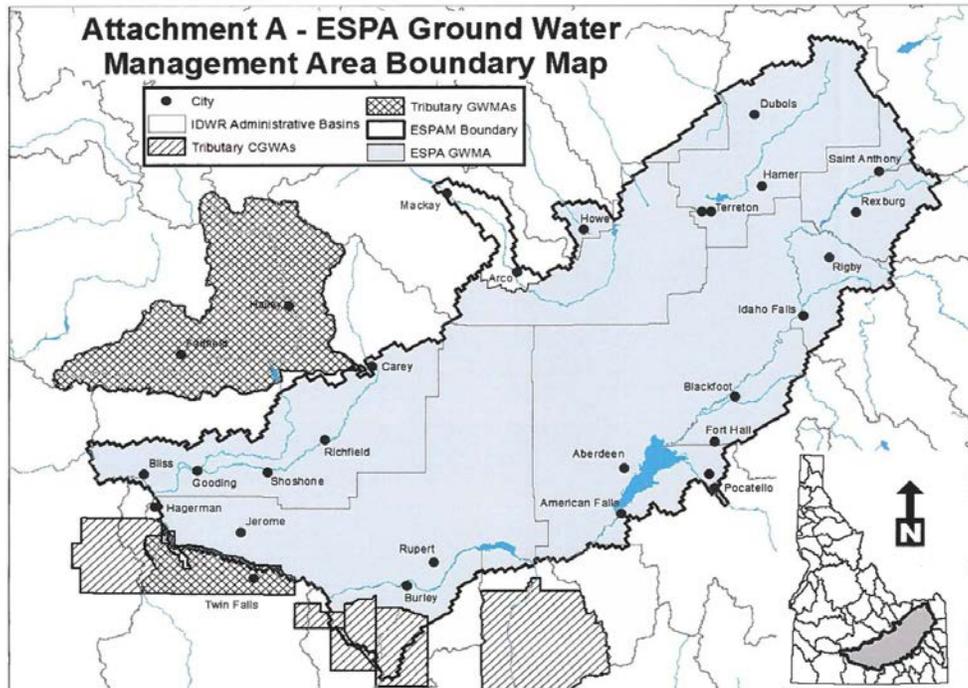
WaterSMART

Small-Scale Water Efficiency Projects for FY2020

Funding Opportunity Announcement No. BOR-DO-20-F006

A & B Irrigation District Groundwater Well Meter Upgrades in the ESPA

Rupert, Idaho



A & B Irrigation District

Dan Temple, General Manager
414 11th. Rupert, ID 83350
dtemple@abirrigation.org
Phone: 208-436-3152

March 4, 2020

Table of Contents

Technical Proposal and Evaluation Criteria

Executive Summary.....	3
Background Data.....	3
Project Location.....	5
Technical Project Description and Milestones.....	5
Evaluation Criteria	
Evaluation Criterion A: Project Benefits.....	6
Evaluation Criterion B: Planning Efforts Supporting the Project.....	8
Evaluation Criterion C: Project Implementation.....	8
Evaluation Criterion D: Nexus to Reclamation.....	9
Evaluation Criterion E: Department of the Interior Priorities.....	10
Environmental and Cultural Resources Compliance.....	11
Official Resolution.....	13
Project Budget.....	14
Funding Plan.....	14
Budget Narrative.....	15
Unique Entity Identifier and System for Award Management.....	15
Attachments.....	16

Technical Proposal and Evaluation Criteria

Executive Summary

Date: Application due date: March 4, 2020

Applicant: A&B Irrigation District
Rupert, Minidoka County, Idaho

Project Title: A&B Irrigation District Groundwater Well Metering Upgrades in the ESPA

Project Summary:

A&B District has measured groundwater extractions with mechanical propeller meters for 25 years. The district now plans to upgrade groundwater measurement to electromagnetic meters over a multi-year period. Electromagnetic meters will also comply with East Snake Plain Aquifer (ESPA) regulations set forth by the Idaho Department of Water Resources (IDWR).

A&B will make use of district and Bureau funds to upgrade **twenty** or approximately 10% of the meters on groundwater wells in the district in the next year. A&B will contract with a meter manufacturer for the purchase and configuration of electromagnetic meters that will satisfy state regulations as well as the district's water measurement and data needs. District staff is skilled in construction/repair of pipelines and will perform the installation of these new meters.

Approximate Length: One Year

Completion Date: December 31, 2021

Federal Facility: The Project is located on a Federal facility, Reclamation's Minidoka Project North Side Pumping Division (A&B Irr. Dist.).

Background Data

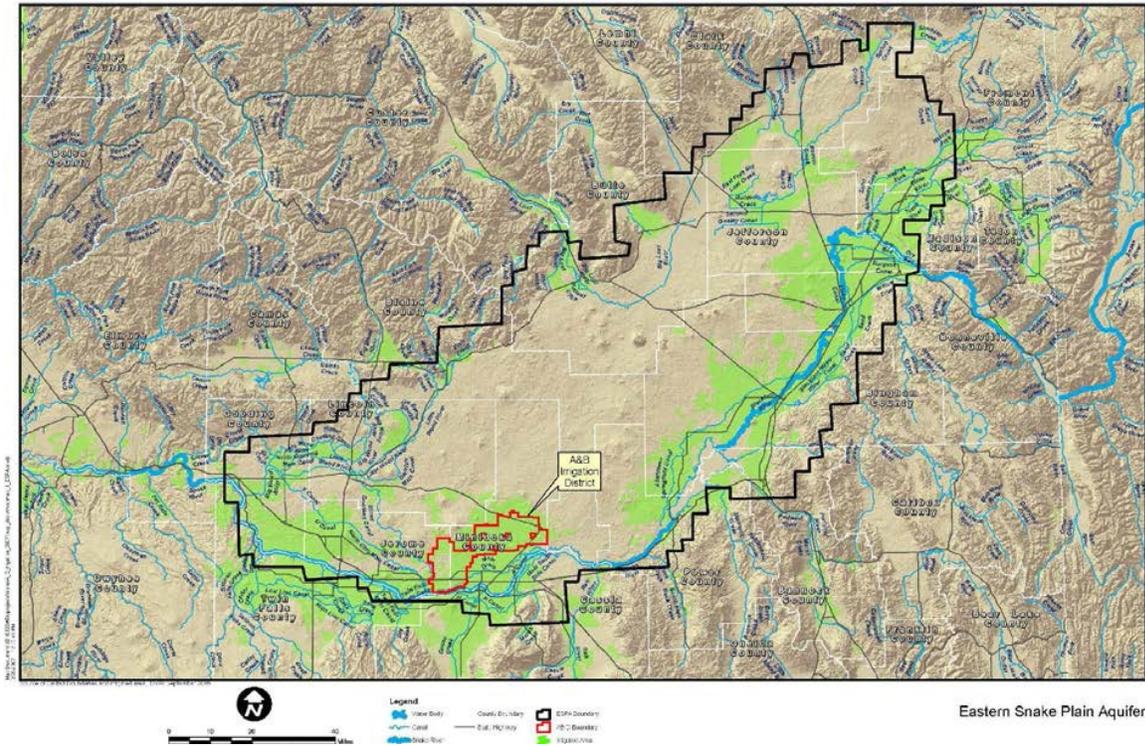
A&B Irrigation District:

The A&B Irrigation District (A&B or District) was formed by the landowners of the Northside Pumping Division of the Minidoka Project, (Fig. 1) a federal irrigation reclamation project, to operate and maintain the project and to repay to the United States the construction costs of the project. The District was organized pursuant to Idaho law and entered into a repayment contract with the U.S. Bureau of Reclamation (Reclamation) in 1962. The District operates two units, Unit A with a surface water delivery system at the Snake River, and Unit B with deep groundwater wells in the Eastern Snake Plain Aquifer (ESPA). Reclamation provides reserved power to the District by a contract through the Bonneville Power Administration's southern Idaho Power Pool.

The District has metered its groundwater and surface water diversions and deliveries for 25 years with propeller meters and has implemented a Conservation Plan since 2002 which outlines measurement practices for surface water and groundwater diversions. The IDWR implemented a metering order in the Fall of 2015 to address groundwater declines affecting flow in down-gradient springs. This requires measurement at the first diversion from the waters of the state with a state-approved flowmeter. IDWR has allowed the District to measure groundwater with propeller meters, but will now require A&B to measure diversions with an approved meter which must be a full-profile electromagnetic totalizing flow meter.

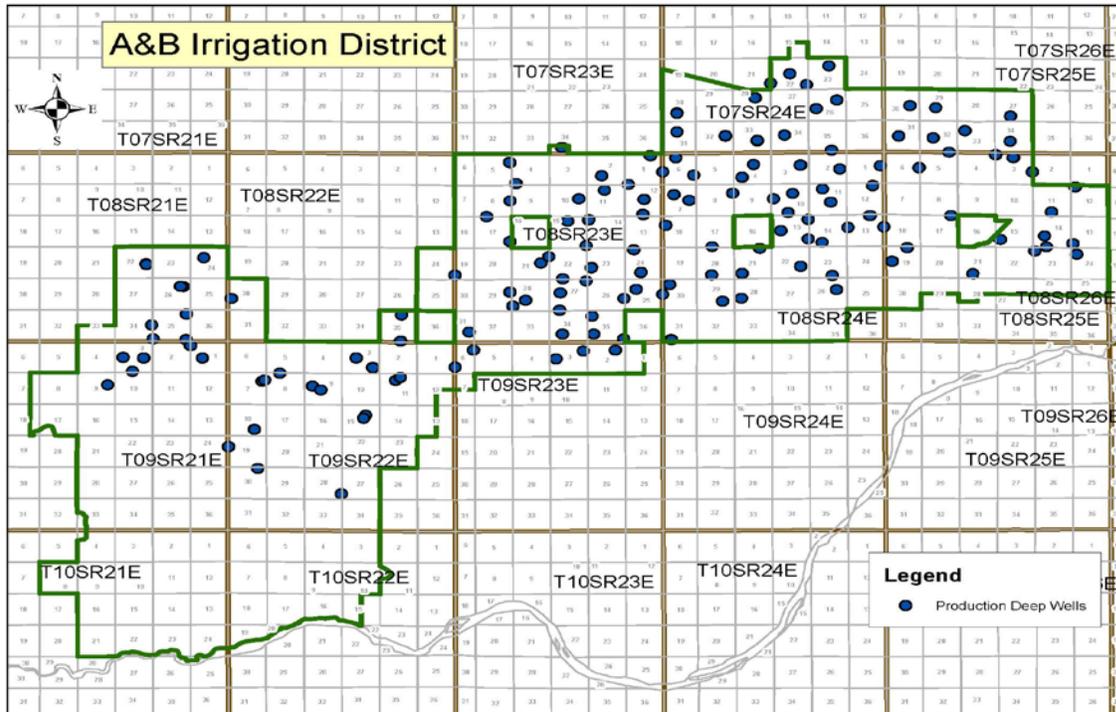
Area Map

Figure 1- Regional Map (Southern Idaho, A&B Irrigation District)



Project Location

Figure 2 - Deep Production Wells in A&B Irrigation District



Technical Project Description and Milestones

A&B Irrigation District intends to improve groundwater extraction measurement within the district by upgrading to electromagnetic meters for groundwater measurement with assistance from the WaterSMART Small-Scale Water Efficiency Grant. A&B owns and operates 182 deep groundwater wells which in turn provides irrigation water to approximately 66,000 acres in the district.

Meter Upgrades: The district proposes to implement Phase One of the process to upgrade each of these mechanical meters to electromagnetic meters with no moving parts. Converting all wells to electromagnetic meters is expected to be a multi-year project. A&B will begin by replacing approximately 10% of the propeller meters and will continue annually as funding is available. This one-year project will provide the District with valuable knowledge on staff requirements for conducting such field work and necessary information to plan for completion of the metering across the district.

The proposed project will upgrade old mechanical meters to an electromagnetic meter with no moving parts featuring datalogging capabilities. The new meters will also be telemetry-ready if the District decides to deploy remote telemetry. The new meters will also reduce the amount of staff time required for meter service and repairs. Meter down-time will be reduced improving water use records at A&B. The district is proposing to upgrade **twenty** mechanical propeller

meters with electromagnetic meters in the coming year. The meters planned to be installed will be the McCrometer DuraMag electromagnetic meter. The DuraMag is a battery-powered flanged full-bore electromagnetic meter. The DC-powered version of the DuraMag is approved by the Idaho Department of Water Resources. These meters will provide operational advantages to the district as well as improving data collected for water management in the ESPA.



Upon the successful award of this proposal, meters will be ordered in late November/December of 2020 and installation of meters will be scheduled for January/February, 2021 during the off-season.

Evaluation Criteria

Evaluation Criterion (A)- Project Benefits: *Up to 35 points may be awarded based upon evaluation of the benefits that are expected to result from implementing the proposed project. This criterion considers a variety of project benefits, including the significance of the anticipated water management benefits and the public benefits of the project. This criterion prioritizes projects that modernize existing infrastructure in order to address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflict in the region.*

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

- *What are the benefits to the applicant's water supply delivery system?*

The meters that are proposed to be installed have an accuracy of +/- 1% compared to the accuracy expected in the Water Conservation Plan of 5% for the mechanical propeller meters. This improved measurement will provide for better accuracy for delivery to patrons of the A&B District. Greater accuracy of deliveries will improve efficiency of pumping practices in the district and will reduce inefficiencies including unnecessary pumping and conserve water in the local aquifer.

Improvements in technology will also be realized with the implementation of the new meters. Each of the meters installed will be equipped with internal dataloggers as a standard feature. These internal dataloggers will allow ditch riders to download time-stamped digital records of water pumped or delivered within specified time intervals. This is an improvement of water deliveries for internal purposes such as billing or pumping records for reporting purposes under state requirements.

Electromagnetic meters are also telemetry-ready in case A&B decides to deploy remote telemetry units for meter reading or other water management sensors in the future which will further the water management efficiencies of the district.

- *If other benefits are expected explain those as well. Consider the following:*
 - *Extent to which the proposed project improves overall water supply reliability*

Since A&B delivers water to its patrons by volume, the new meters will provide more accurate flow measurements to ensure that the amount delivered is correct. The district has deployed Variable Frequency Drive (VFD) pumps on some pumps in the district. Meters installed on VFD pumps will improve the operational efficiency and performance of these pumps improving equipment longevity and energy efficiency.

This will improve on-farm water management and distribution throughout the district. These meters are more conducive to provide signal outputs for center pivots or other irrigation systems in the district. Farmers will also be able to quantify the amount of water being used for on-farm irrigation management purposes.

- *The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)*

The new meters will have significant effects across the entire A&B district which manages approximately 182 deep groundwater wells. These wells cover an area which is approximately 6 miles deep and 30 miles wide (See Figure 2). Improved water management will have benefits within the district as well as for downstream water users that will experience sustained spring flows due to improved baseflow from groundwater.

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

The new meters proposed are well-suited to groundwater measurement. The short installation distance capable for these electromagnetic meters is conducive to water measurement in A&B with limited distance to existing underground pipelines. These meters also have no moving parts and consequently will not stop due to mechanical wear and tear. Standard equipment for the new meters also includes an internal datalogger which the district can use for recording water deliveries to patrons during the irrigation season. The datalogging feature will enable the district to improve data collection on water use in the Snake River Basin consistent with A&B's Conservation Plan.

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

This project will support improved groundwater management as well as more uniform water distribution across the district which will mean that more fields will be watered more effectively for better productivity. This in turn will prevent less waste of water resources and conserves water in the aquifer for future uses. Improved groundwater management will reduce the drawdown and slow or reverse the decline of the water table in the local aquifer.

- *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.*

New meters also have pulse-output capability in case farmers want to integrate flow data into their irrigation system. Having meters at individual turnouts will facilitate EQIP applications for such practices as soil moisture monitoring, surge valves, pivot nozzle conversions, etc.

Evaluation Criterion (B) Planning Efforts Supporting the Project: *Up to 35 points may be awarded based on the extent to which the proposed on-the-ground project is supported by an applicant’s existing water management plan, water conservation plan, System Optimization Review (SOR), or identified as part of another planning effort led by the applicant. This criterion prioritizes projects that are identified through local planning efforts and meet local needs.*

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?*

Yes, the board considers measuring water as accurately as possible to be a priority consistent with the A&B Irrigation District Water Management and Conservation Plan. This plan calls for the measurement of all surface and groundwater diversions in the district with stated accuracies. Section 5.1 of the Conservation Plan states that “During the irrigation season all delivery points receiving water are measured 7 days a week...”.

The A&B Water Management and Conservation Plan also discourages wasteful use of project water within the district. The Plan establishes a tiered system of escalated rates for water users that use water in excess of the allotted rate for that farm account. This discourages the non-beneficial use of water while careful water measurement by the district promotes water conservation. Accurate water measurements will make it easier to leave more water in the aquifer for future use and to provide baseflow for the Snake River downgradient of the district.

The new meters will improve the data collected on volumes of groundwater pumped within the district and delivered to patrons for irrigation purposes as required by the Conservation Plan. Water measurements will be taken at a higher degree of accuracy than the propeller meters used previously and will also aid in the implementation of technology such as datalogging flow rates or remote meter monitoring.

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

Despite A&B’s long history of groundwater measurement with mechanical propeller meters, the IDWR is enforcing the ESPA measurement order uniformly to the A&B District as well as other districts in the basin. The A&B Board of Directors has resolved at its January 8, 2020 board meeting to initiate meter upgrades.

Evaluation Criterion (C) Project Implementation: *Up to 10 points may be awarded based upon the extent to which the applicant is capable of proceeding with the proposed project upon entering into a financial assistance agreement. Applicants that describe a detailed plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.*

- *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.*

April, 2020: Successful notification of award from the Bureau

July, 2020: Sign contract with the Bureau

Oct, 2020: Initiate Environmental Compliance with local Bureau office. Determine adequate sizing of meters for Phase One meter order.

Nov, 2020: Order flowmeters from manufacturer

Jan-Feb, 2021: Begin installing new meters at pumps or farmer turnouts

Oct-Dec 2021: Finish installing new meters if not completed in Jan-Feb 2021

Dec, 2021: Prepare Final Project Report for Bureau

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

No permits will be required for this project.

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

A&B will complete the necessary design work for the diversion points and pipelines from the wells. A&B has extensive experience completing similar projects and will complete the necessary designs for meter installation at each well for this project.

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

No new policies are needed.

- *Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?*

A&B staff has spoken with Leah Meeks of the Boise, ID Bureau office. Leah estimated BOR Environmental compliance costs to be an estimated \$500 for the project. A&B expects environmental costs to be minimal since meters installed will be using the same footprint (or smaller) as currently metered pipelines.

Evaluation Criterion (D) Nexus to Reclamation: *Up to 10 points may be awarded based on the extent that the proposal demonstrates a nexus between the proposed project and a Reclamation project or activity. Describe the nexus between the proposed project and a Reclamation project or activity, including:*

- *Is the proposed project connected to a Reclamation project or activity? If so, how?*

Yes. A&B is a Reclamation District. A&B will be proceeding with title transfer likely in the fall of 2020. However, once this project is complete, A&B will still utilizing Reclamation water rights.

- *Does the applicant receive Reclamation project water? Is the project on Reclamation project lands or involving Reclamation facilities?*

Yes. A&B receives Reclamation water and equipment will be installed on various groundwater pumps and pipelines owned and managed by A&B. All meters purchased for this project will be installed on pumps within this Reclamation facility.

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

Yes. All installations of equipment will be within the Reclamation district and A&B boundaries.

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

Yes. The project is located in the Upper Snake River Basin where Reclamation has several projects. The project will benefit Reclamation storage facilities in the Upper Snake River Basin above Milner Dam.

- *Will the project benefit any tribe(s)?*

Yes, Improved groundwater storage in the local aquifer will have the potential to improve spring flows and reach gains in the American Falls area for the benefit of the Shoshone-Bannock Tribes.

Evaluation Criterion (E) Department of the Interior Priorities: *Up to 10 points may be awarded based on the extent that the proposal demonstrates that the project supports the Department of the Interior priorities. Please address those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the Priorities listed, and whether the connection to the priority(ies) is well supported in the proposal.*

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

- d. Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity;

A&B's project complies by using technology to record usage and improve the distribution of irrigation water being used to maintain water in the East Snake Plain Aquifer, the Snake River, and local canals for future needs.

3. *Utilizing our natural resources*

- b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.

Since A&B metered deliveries and groundwater extraction before IDWR required groundwater metering in the ESPA, this proposal demonstrates the degree of cooperation between the district and IDWR. A&B has spent a significant amount of time with the Idaho Department of Water Resources and neighboring groundwater and surface water districts to improve the management of both surface and groundwater resources. The proposed project is consistent with and furthers the goals of the District's Conservation Plan of obtaining water use data for improved surface/groundwater management in the ESPA.

5. *Modernizing our infrastructure*

This project demonstrates maintaining and modernizing the infrastructure of this federal project with the addition of new meters with datalogging capability by combining district funds with grant funds from the Bureau. Meters are also telemetry-ready for enhanced recordkeeping and management of groundwater resources and have a greater measurement accuracy than the previously utilized propeller meters.

Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

A&B plans to accomplish meter upgrades or improvements with this project. The meters are in the same locations as previous meters and any environmental impacts will be minimal. All pipeline work to be done will be above ground installations. A&B has consulted Leah Meeks with the Boise, ID Bureau of Reclamation office and the environmental compliance cost has been estimated to be \$500.

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?

No, Endangered species will not be affected.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.

No.

When was the water delivery system constructed?

Construction of A&B District was completed and began delivering water in 1962.

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

Discharge pipes of existing wells will need slight modifications, but no changes will be made to canals, headgates, or flumes as a result of this project.

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.

All A&B District facilities were recorded and evaluated for the National Register of Historic Places in 2019 by the Bureau of Reclamation. This project will not change or affect structure or function of the Unit A Pumping Plant #1 or its historical status.

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

No

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

No

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

No

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

No

Board Resolution

OFFICIAL RESOLUTION OF THE A & B IRRIGATION DISTRICT

Resolution NO.2020-01

WHEREAS, the United States Department of Interior, Bureau of Reclamation, has announced the WaterSMART Grants for Small-Scale Water Efficiency Projects for Fiscal Year 2020 to provide financial assistance to water managers.

WHEREAS, A&B Irrigation District has a present need for funding to implement irrigation water meter upgrades necessary under Idaho Department of Water Resources (IDWR) regulations.

NOW, THEREFORE, BE IT RESOLVED that the A&B Irrigation District Directors agree to and authorize the following;

- The A&B Irrigation District Directors have reviewed and support the proposal submitted;
- The A&B Irrigation District is capable of providing the amount of funding needed for the matching grant from the WaterSMART Grant; and
- If selected for a WaterSMART Grant, A&B Irrigation District will work with the Reclamation to meet the established deadlines for entering into a cooperative agreement.

DATED: January 8, 2020



Harold Mohlman, President
A&B Irrigation District

ATTEST:



Diana Warburton, Secretary
A&B Irrigation District

Project Budget

Funding Plan

Funding Sources	% of Total Project Cost	Total Cost by Source
Costs to be reimbursed with the requested federal funding	50.0%	\$29,307.50
Costs to be paid by applicant, A&B ID	50.0%	\$29,307.50
Value of Third Party Contributions	0.00%	
TOTAL PROJECT COST	100%	\$58,615

Budget Item Description	Computation \$/unit	Quantity	Quantity Type (hours/days)	Total Cost
Salaries and Wages				
	No federal funds to be used for salaries/wages			
Fringe Benefits				
	No fringe benefits provided by this project			
Travel				
	No federal funds to be used for travel to install equipment			
Equipment				
12" DuraMag Electromagnetic Meter	\$2,570.00	20	ea	\$51,400
Subtotal				\$51,400
Supplies and Materials				
Datalogger Software & Cable	\$ 268.00	1	ea	\$268
Grounding Rings for Mag Meters	\$ 208.00	20	ea	\$4,160
DC Power Supply	\$ 58.00	10	ea	\$580
Subtotal				\$5,008
Contractual/Construction				
Environmental Compliance (BOR)	\$500.00		ea	\$500
				\$0
Subtotal				\$500
Total Direct Costs				\$56,908
Indirect Costs		3%		\$1,707.24
Total Estimated Costs				\$58,615

Funding for our project will be provided by the WaterSMART grant and the A&B Irrigation District. No letters of commitment from outside sources will be needed.

Budget Narrative

The estimated project cost is \$58,615. Upon delivery of the supplies, the grant funds from the BOR will help pay for the equipment purchased from the meter distributors. Quotes for meters have been obtained from distributors and are included in Attachment 1.

In-kind contributions from A&B will be 50% of the cash required to purchase meters and accessories. This will amount to approximately **\$29,307.50** as noted in the Budget Proposal. A&B will be responsible for all the labor, heavy equipment, and the materials needed for the alterations at the sites to accommodate the new equipment, but this will not be included in the project budget.

In-kind contributions that do not cover our share will be made up by the A&B Operating fund. The expenditures benefit the project by improving A&B's ability to monitor and deliver constant water flows to the farmers and to our own canals and laterals.

Total Costs

The district requests **\$29,307.50** from the Bureau's Small-scale Water Efficiency Grant. The remaining \$29,307.50 will come from the A&B Irrigation District in cash.

Unique Entity Identifier and System for Award

A&B Irrigation District is registered on the SYSTEM for Award Management (SAM). The unique entity identifier is **072962608**. The A&B Irrigation District will maintain an active SAM registration throughout the project.

Attachment 1



Quotation

Quote Number: 157030 Rev2

Codes: 001 / 006 / 066

Company: A B IRRIGATION DISTRICT
 Address: PO BOX 675
 City: RUPERT
 State: ID Postal Code: 83350

Quoted By: Cherish Stack
Date Quoted: 1/31/2020 **Expires:** 3/1/2020
Payment Terms: TO BE ADVISED (TBA)
Shipping Terms: FCA SELLER'S PREMISES (FCA)

Following is the information requested

Line #:	Item Number:	Description:	Qty:	UM:	List Price:	Disc:	Net Price:	Ext. Price:
1.000	DM12-1002	12" DURA MAG 150# AWWA Class D Flanges Battery Powered Pulse Output No Cable Quick Connect Cable Terminals Data Logger	20	EA	\$3,187.00	20%	\$2,549.60	\$50,992.00
1.100	3-2781-12-K	Grounding Ring Assy., 12" UM Grounding Rings for above meter	20	EA	\$260.00	20%	\$208.00	\$4,160.00
Subtotal (List):					\$68,940.00		Subtotal (Net):	\$55,152.00

2.000	G3COM01	McMag 3000 Data logger Data Logger Software and cable	1	EA	\$268.00			\$268.00

All Prices are in US Dollars (USD)					Total List Quoted:	\$69,208.00	Total Net Quoted:	\$55,420.00

****Above price does not include tax or shipping cost****

This quotation applies to equipment cost and does not include freight, site visits for pipe measurement, cable run evaluations, equipment start-up, end user training or submittals. These value added services will be quoted separately through your local McCrometer Factory Representative.

McCROMETER, INC.'S STANDARD TERMS AND CONDITIONS OF SALE FOR PRODUCTS AND SERVICES
 REV: 1.4 04/17

SECTION 1: PRODUCT SALES AND FIELD SERVICES

ARTICLE 1: THE CONTRACT

ANY PREPRINTED TERMS AND/OR CONDITIONS ON BUYER'S PURCHASE ORDER OR INVOICE SHALL NOT APPLY AND MCCROMETER GIVES NOTICE OF REJECTION OF SUCH TERMS AND/OR CONDITIONS IN THEIR ENTIRETY.

This document sets forth the Terms & Conditions of Sale for goods manufactured and/or supplied, and services provided, by McCrometer, Inc. of Hemet, California ("McCrometer") and sold to the original purchaser thereof ("Buyer"). Unless otherwise specifically stated herein, the term "McCrometer" includes only McCrometer, Inc. and none of its affiliates. The Contract shall be comprised of the following terms, together with such terms and conditions set forth in McCrometer's written proposal or quotation (the "Quotation"), including any documents, drawing or specifications incorporated by reference, and any additional or different terms proposed in Buyer's purchase order (the "Purchase Order") that are accepted by McCrometer in writing, which together shall constitute the entire agreement between the parties and supersede all previous communications, representations or agreements, either oral or written, with respect to the subject matter hereof. These terms and conditions are subject to change without notice.

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Page 1 of 10

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McCrometer, Inc. • 3255 West Stetson Avenue, Hemet, CA 92545, USA
 Tel (951) 652-6811 • Fax (951) 652-3078 • Website: <http://www.mccrometer.com>