



WEBER  
BASIN  
WATER  
CONSERVANCY  
DISTRICT

WaterSMART Grants:  
Small-Scale Water Efficiency  
Projects FY 2018

# WBWCD POTABLE WATER SYSTEM METERING PROJECT – PHASE 2



APPLICANT:

Weber Basin Water Conservancy District  
2837 East Highway 193  
Layton, UT 84040-8406

PROJECT MANAGER:

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### **Attachments:**

Attachment A - Map of the District’s Service Area (Project Area)

Attachment B – Weber Basin Delivery System Information

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# WBWCD POTABLE WATER SYSTEM METERING PROJECT

## Small-Scale Water Efficiency Projects FY 2018

### 1. Executive Summary

#### Applicant Info

**Date:** July 26, 2018

**Applicant Name:** Weber Basin Water Conservancy District

**City, County, State:** Layton, Davis, Utah

**Project Manager:**

*Name:* Riley Olsen, P.E., Weber Basin Water Conservancy District

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**Project Funding Request:** Small Scale Water Efficiency Projects- Total Cost \$149,768.07

#### Project Summary

*A one paragraph project summary that specifies the work proposed, including how project funds will be used to accomplish specific project activities and briefly identifies how the proposed project contributes to accomplishing the goals of this FOA*

Weber Basin Water Conservancy District (WBWCD or District) proposes to complete a second phase of an ongoing effort to meter existing potable water wholesale connections. The proposed project includes installation of 25 magnetic flow meters (mag meters) and upgrade of 10 existing flow meters on water transmission mains to allow for connection to an Automated Metering Infrastructure System (AMI). The meters to be installed and upgraded measure the flow of potable water from the District's potable water system to wholesale potable water customers. The project will help the District better manage water supplies, promote conservation among its wholesale customers and automate its potable meters. This project helps WBWCD move one more step toward accomplishing certain goals and priorities set forth in their System Optimization Review (SOR) completed in 2008.

#### Schedule

*The length of time and estimated completion date for the proposed project*

An environmental document will be prepared as part of the project, and it is anticipated that a Categorical Exclusion will be approved based on the fact that the project will take place within existing underground concrete vaults, previously disturbed areas and within existing road alignments.

This project construction will begin in March of 2019 and will continue through June of 2020. All components of the project will be completed within the two year allowance.

## Federal Facility

Whether or not the project is located on a Federal Facility

In 1949, the United States Congress authorized the Weber Basin Project (Project), which was a U.S. Bureau of Reclamation (Reclamation) project aimed at developing and effectively utilizing the available water resources within the Weber River Basin Drainage. The Weber Basin Water Conservancy District was subsequently created in June of 1950 by a decree of the Second District Court of Utah and under the guidelines of the Utah Water Conservancy Act. The District is the operating agency for the Weber Basin Project and is responsible for the sale and delivery of project water, operation and maintenance of project facilities and is contracted with the U.S. Government for repayment of reimbursable costs of the Project.

## 2. Background Data

### Project Location

With a regional water supply responsibility, Weber Basin Water Conservancy District (District or WBWCD) wholesales water to and develops additional supplies for cities, districts, and companies in five Utah counties. Those agencies, in turn, distribute and retail to their respective customers. The District is unique in that it provides many categories of water including drinking water, urban secondary water, agricultural irrigation water, and industrial water. See Attachment A for a Map of the WBWCD service area. Attachment A also shows the location of the WBWCD potable water transmission system and metering vaults. The proposed project will take place within a portion of the metering vaults. The proposed project will take place within Davis County and Weber County.

### Water Supply

*Describe the source of water supply, the water rights involved, current water uses (i.e., agricultural, municipal, domestic, or industrial), the number of water users served, and the current and projected water demand. Also, identify potential shortfalls in water supply. If water is primarily used for irrigation, describe major crops and total acres served.*

#### Source of water supply and water rights involved

Source	Maximum Yield (AF)	Reliable Yield (AF)
Project Stored Water	377,278	206,914
District Stored Water	12,917	9,627
Wells (both District and Project)	20,485	14,340
Stock Water	21,321	17,056
Decreed Water Rights	3,960	1,117
<b>Totals:</b>	<b>435,961</b>	<b>249,054</b>

Water resources of the area were extensively developed before initiation of the Weber Basin Project. Numerous private developments antedate the Federal projects. Prior federal Reclamation developments include the Weber River Project on the main stem of the Weber River, and the Ogden River Project on the Ogden River. Also, as part of the Weber River and Ogden River

Projects, water is diverted from the high reaches of the Weber River for multiple uses on the Provo River. The Weber Basin Project supplements all of the earlier undertakings, and its operation is correlated with users in approaching full practicable development of the area's water resources. Water is delivered from the Weber River to the District via two aqueducts.

The Weber Aqueduct conveys irrigation water to lands on the Uintah Bench as well as municipal and industrial water to Ogden and adjacent communities in Weber County. Part of the irrigation water is pumped to parcels above the aqueduct and the remainder is delivered by a gravity pressure distribution system. At the terminal of the aqueduct, water is delivered to the District's Weber South Water Treatment Plant (WTP) from which it is treated then distributed to Ogden City and surrounding communities. The Davis Aqueduct extends to the south from the Weber Canyon along the foot of the Wasatch Mountains to North Salt Lake City. Part of the water is pumped for irrigation of lands above the aqueduct; the remainder of the water is sold by the District to irrigation companies, Improvement Districts, Sub-conservancy Districts and individual landowners. The remaining water is processed through the District's Davis North WTP for distribution to communities in North Davis County, and through the Davis South WTP for communities in the south end of Davis County (Combined communities of approximately 300,000 people). A large block of treated and untreated industrial water is also delivered to the several oil refineries in the extreme south end of Davis County.

In addition to surface water distribution, nineteen deep wells relieve water shortages in dry periods and to meet peak water demands. Streams flowing from the face of the Wasatch Mountains toward the Great Salt Lake contribute small quantities of water for project use. The Ogden Valley Canal distributes Ogden River water to mountain valley lands near Huntsville and Eden.

#### Current water uses and number of water users served

Currently District-administered water contracts total 226,170 acre-feet, with 90,375 acre feet categorized as municipal and industrial (M&I) water, and the remaining 135,795 acre feet categorized as irrigation. WBWCD serves a geographic area over 2,500 square miles, serving a population of about 600,000 people, with five principle water uses:

1. **Wholesale Irrigation:** wholesale water is supplied to a number of irrigation suppliers along the Wasatch Front. These organizations then retail water to customers in their respective service areas. This use accounts for approximately 35% of the District's water contracts.
2. **Groundwater Replacement:** is accomplished by various drinking water purveyors and individuals (either residential or agricultural) with a water contract which is used in an exchange application to obtain approval from the State Engineer to drill a groundwater well to meet water supply needs. This use accounts for nearly 11% of WBWCD contracts currently.
3. **Retail Secondary Irrigation:** WBWCD provides residential customers with irrigation water in Davis and Weber counties via 211 miles of pipelines. This use accounts for roughly 26% of water contracts. They also deliver irrigation water to many irrigators and farmers in Box Elder, Davis, Morgan, Summit and Weber Counties.

**4. Treated Municipal Water:** The District wholesales potable water to nearly 50 cities and water improvement districts in Davis and Weber Counties via 69 miles of transmission lines. This use accounts for approximately 22% of the District’s contracts.

**5. Untreated Industrial Water:** This use accounts for about 5% of the District’s Contracts.

#### Current and projected water demand/ Potential shortfalls in water supply

As of 2017, existing contracts obligated 90% of the District’s reliable yield supply. Current population projections for the District’s service area show the population nearly doubling between 2010 and 2060 from 583,700 to 1,011,800 people. As this growth takes place, additional water supply will be necessary to meet anticipated demands even by meeting the conservation goals of 25% reduction in per capita use by 2025 and 35% conservation by 2050 when compared with year 2000 per capita use. Increased conservation will be critical with all types of programs and incentives such as rebates playing a role in water efficiency and water savings.

#### Water Delivery System

*Describe the applicant's water delivery system as appropriate. For agricultural systems, please include the types and appropriate lengths canals and laterals, the number irrigation turnouts and other existing irrigation improvements. For municipal systems, please include the length of distribution lines, number and size of storage tanks, number of pump stations and capacities, and number of connections and/or number of water users served and any other relevant information describing the system.*

#### **Delivery System:**

In addition to the summary in Attachment B, WBWCD receives 5,000 acre-feet from Echo Reservoir that was acquired as part of the Weber Basin Project. They have also acquired 1,357 acre-feet of Weber River Stock in Echo.

**See Attachment B “WBWCD Delivery System Information”**

#### **Connections:**

The District has approximately 18,000 individual secondary irrigation connections that are operated and maintained by the WBWCD. The District also provides potable water to nearly 50 cities and water districts.

#### Relationship with Reclamation

*Identify any past working relationships with Reclamation. This should include the date(s), description of prior relationships with Reclamation, and a description of the projects(s).*

WBWCD has collaborated with Reclamation on a number of recently completed and ongoing cooperative projects, including:

- Title XVI Reuse Feasibility Study 2017: This study will allow the WBWCD to evaluate and collaborate with five wastewater treatment facilities within the District on ways to help develop greater resiliency and diversity of their water portfolio.

- The Secondary Water Metering, Fish Passage, and Solar Array Project 2017: This project received full funding through the 2017 WaterSMART program. The project is in the process of being completed and will install 2,365 meters and install a solar array at the Davis North Water Treatment Plant; estimated to be completed in September 2020.
- WaterSMART Small-Scale Water Efficiency Project FY 2017 – WBWCD Culinary Meters Project. This project will install new metering equipment on water transmission mains to allow to an Automated Metering Infrastructure System (AMI).
- Drought Contingency Plan 2016: This planning project received partial funding to help develop a drought plan for the entire District.
- The Secondary Water Meter Project: This project, which received partial funding through the 2016 WaterSMART program, is in the process of being completed with the installation of secondary water meters in the Uintah Bench area.
- Phase 3 Upper Willard Canal Lining and Water Marketing Project: This project, which received partial funding through the 2013 WaterSMART program has been completed.
- Phase 2 Upper Willard Canal Lining and Water Marketing Project: This project, which received partial funding through the 2012 WaterSMART program, has been finalized.
- Phase 1 Upper Willard Canal Lining and Water Marketing Project: This project, which received partial funding through the 2011 WaterSMART program, has been completed.
- The Layton Canal Lining and Water Marketing Project: This project, which received partial funding through the 2010 WaterSMART program, has been completed.
- The first Secondary Water Meter Project: This project, which received partial funding through the 2010 WaterSMART program, has been completed with the installation of 1000 meters.
- System Trunk-line Meter Project: Completed in 2009, this project involved installation of large meters and provides information for the water deliveries through the many of the large lines that service portions of the District’s retail secondary water system.
- System Optimization Review (SOR) was completed in 2008; this project evaluated the efficiencies of the District’s entire water storage and distribution system.
- Weber River Basin Aquifer Recharge Water Bank: This project, which was completed in 2009, received partial funding through the 2007 Water 2025 program.
- Gateway Canal Landslide Stabilization Projects: This is an ongoing collaboration.

### 3. Technical Project Description

WBWCD proposes to complete a second phase of its Potable Water System Metering Project. The proposed project includes installation of 25 magnetic flow meters (mag meters) and upgrade of 10 existing flow meters on water transmission mains to allow for connection to an Automated Metering Infrastructure System (AMI). The meters to be installed and upgraded will measure the flow of potable water from the District’s potable water system to wholesale potable water customers. The project will help the District better manage water supplies, promote conservation among its wholesale customers and automate its potable meters. This project helps WBWCD accomplish goals in the WBWCD Conservation Plan.

The proposed meters to be replaced or upgraded are located within underground concrete vaults. These vaults are often located in roadways which can make accessing them difficult. The existing meters at these locations are traditional “turbo” type meters which have a totalizing readout that is manually read on a monthly basis. The amount of work to install a new mag meter or retrofit an existing mag meter to communicate with the District’s AMI system will be specific for each site. The easier sites will only require installing an AMI endpoint that will communicate with the AMI system. More complex sites will require removal of reducers, spools, strainers and old meters and installation of new piping and mag meters. For this project, the District will continue retrofitting sites that are considered “low hanging fruit” which will not require complete reconstruction of vaults, but will only require minimal piping changes that can be performed by WBWCD maintenance personnel.



*Mag Meter Installation*

With the current operation of WBWCD’s potable water system, flow data is only collected monthly so this only provides the District with a snapshot of water flow. By installing meters that continuously communicate with a central database, flow data on a daily and hourly resolution will be captured. This data will be very helpful for the District in understanding peak day water use and encouraging conservation with its customers.

The proposed project will increase safety of WBWCD personnel by reducing the number of trips that WBWCD personnel need to enter vaults which are confined spaces and are often located in busy roadways.

## 4. Evaluation Criteria

### Evaluation Criterion A- Project Benefits

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

***What are the benefits to the applicant’s water supply delivery system?*** The proposed project will provide many benefits to WBWCD’s potable water system including:

- *Better management of the potable water system. For example – the metering system will help the District identify water losses for both WBWCD and its wholesale customers.*
- *Reduced staff time in reading meters*
- *Documentation of water demand peaks for wholesale customers which will greatly assist WBWCD in planning of potable water infrastructure.*

- *Hourly and Daily water demand data can aid in water system modeling efforts which will also assist in planning for infrastructure.*
- *Ability to work with wholesale customers to reduce peak demands on District transmission lines, water treatment facilities and other infrastructure. This will improve the reliability of WBWCD's potable water system and can aid in delaying the need for costly capital improvements.*

***Extent to which the proposed project improves overall water supply reliability:*** By better understanding the peak demands of existing wholesale customers, the District will be better able to plan water infrastructure improvements. Currently, the District has flow data available for its sources but only has a monthly flow for most wholesale customers. This makes it difficult to know on a daily or hourly basis where the water is going. The proposed project will provide some of the data necessary to understand demands on the District's infrastructure and allow for necessary improvements which will improve the water supply reliability by doing so. Also, as mentioned previously, WBWCD can work with wholesale customers to decrease the peak demands to improve water supply reliability.

***The expected scope of positive impact from the proposed project:*** WBWCD's potable water system spans Davis County and Weber County and provides wholesale water to over 50 entities. The proposed project will have a positive impact on potable water supplies for this entire area that currently has a population of nearly 600,000 people.

***Extent to which the proposed project will increase collaboration and information sharing among water managers in the region:*** This project will allow for the sharing of water use data including annual use, peak day demands etc. with entities across the state of Utah and the region. WBWCD was approached by the Utah Division of Drinking Water (DDW) in 2016 to provide water use data to the DDW to aid them in determining appropriate Peak Day Demand factor for DDW regulations. These regulations are used in the sizing of potable water systems throughout the state of Utah. The data collected from the meters/AMI equipment proposed in this project will undoubtedly be useful in future planning efforts not only for WBWCD but the region as a whole.

***Any anticipated positive impacts/benefits to local sectors and economies:*** A benefit that this project will provide for the local economy will be in increasing the reliability of the local water supply. WBWCD provides potable water to industries including oil refineries, mineral processing facilities, military installations and other customers where reliability of this water supply is critical to operation of these facilities.

***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).*** The proposed project deals with potable water deliveries and does not have a direct connection to the NRCS assistance through EQIP or other programs. However, WBWCD is also a large agricultural irrigation water provider and there is potential for future collaboration with NRCS for efficiency projects on the District's dams, canals, piping infrastructure that serve the agricultural community.

## Evaluation Criterion B- Planning Efforts Supporting the Project

*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?*** The proposed project will assist the District by providing better metering and accounting for potable water. The proposed project supports the proposed water conservation activities outlined in WBWCD's Water Conservation Plan, which was updated and submitted to the Utah State Division of Water Resources and the Bureau of Reclamation in 2018. The District's plan is updated and resubmitted every 5 years. Specifically, the proposed project addresses Section 7.1 within the Water Conservation Plan. The following bullet points are from WBWCD's Water Conservation Plan that are applicable to the proposed project:

- **Section 7.1 – System Improvement for Conservation – The District is continually working to improve its programs and methods to increase conservation. These include:**
  - Supervisory Control and Data Acquisition (SCADA) System on all District water control facilities
  - Metering and accounting. Meters installed on all M&I delivery points to wholesale and large customers. A policy implemented to install meters on all District secondary connections.
  - Encourage wholesale customers to emphasize conservation with their retail users.

Note that the proposed AMI system will provide the same capabilities of the existing District SCADA system except the equipment to be installed will operate on 10 to 20 year batteries instead of A/C power. This allows WBWCD to install these meters at locations that were not previously feasible.

This project helps WBWCD improve system automation which was analyzed in the WBWCD System Optimization Review (SOR) completed in 2008.

***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 is being pursued simultaneously with other goals identified in the WBWCD Water Conservation Plan such as secondary (irrigation) water metering. The proposed project recently became feasible because of advances in battery technology which allow flow meters to have 10 to 20 year battery life. Prior to this metering/AMI technology, A/C power would have needed to be installed at each of the District's approximately 100 vaults which was not feasible. The AMI technology which is being implemented to read WBWCD's retail secondary (irrigation) water meters can now be used to gather meter data for the District's potable water system. This had made collecting this important data feasible to implement.

Evaluation Criterion C- Project Implementation

**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:**

The schedule provided below outlines timing of the major tasks and milestones for the proposed project. Before any work can begin on the project, an Environmental Document will be prepared in collaboration with Reclamation’s Provo Area Office. Once this is complete construction can begin. Because the proposed meters will be installed on potable water transmission lines that are critical supplies to WBWCD’s wholesale customers, WBWCD will coordinate each shutdown with the wholesale customer. It is anticipated that the mag meters will be installed during the non-summer months March 2019- May 2019 and November 2019 – March 2020 when flows are typically lowest to wholesale customers.

Work will continue during the spring/summer/fall months April 2019 – October 2019 that does not require transmission lines to be shut down. This work will include installing encoders for compatible turbo meters and upgrading existing mag meters with encoders and AMI endpoints so that they can communicate with the District’s AMI system. Final reporting to Reclamation and project close-out will be completed within two years of award of this grant.

WBWCD Potable Water System Metering Project - Phase 2			2018												2019												2020											
TASK ACTIVITY	MONTH		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul										
1	Award of Small-Scale Water Efficiency Project Grant																																					
2	Sign WaterSMART contracts																																					
3	Environmental Document prepared and approved by Reclamation																																					
4	Project Design & Permitting																																					
5	Installation of Mag Meters - Year 1																																					
6	Upgrade Endpoints for Existing Mag Meters																																					
7	Installation of Mag Meters - Year 2																																					
8	Final Reporting and Project Close-out																																					

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

The proposed work will fall within existing concrete vaults, therefore permitting from cities for right of way work is not expected. However, if retrofit ends up requiring work in the roadway then the appropriate permits will be filed with the municipality. Also, since the proposed work is largely replacing turbine type meters with new metering and AMI technology, it is not expected that a Permit to Construct will be required from the Utah Division of Drinking Water (DDW). If DDW does require a permit it is typically a 30 to 60 day process. Adequate time for this has been included in Project Design and Permitting.

**Identify and describe any engineering or design work performed specifically in support of the proposed project.** WBWCD has a staff of engineers experienced in metering, piping retrofit, and waterworks projects. All engineering work is expected to be completed in-house by licensed Professional Engineers.

**Describe any new policies or administrative actions required to implement the project.** None

#### Evaluation Criterion D- Nexus to Reclamation

**How is the proposed project connected to a Reclamation project or activity?** The proposed project will be performed within the Weber Basin Project, which is a Reclamation project. It will therefore benefit the District and Reclamation through better management of water resources and reduce overall demand that is increasing with a growing population throughout the entire Reclamation project.

**Will the project help Reclamation meet trust responsibilities to any tribe(s)?** N/A

**Does the applicant receive Reclamation project water?** Yes, approximately 80% of water sold by WBWCD is original Weber Basin Project water. Weber Basin is the central entity for Reclamation Project water for the entire region.

**Is the project on Reclamation project lands or involving Reclamation facilities?** The existing metering vaults are owned and operated by WBWCD, however they are interconnected with the Weber Basin Project water delivery system which is a Reclamation facility.

**Is the project in the same basin as a Reclamation project or activity?** Yes, the proposed project is in the Weber Basin service area which is the same basin as the Weber Basin Project.

**Will the proposed work contribute water to a basin where a Reclamation project is located?** Yes, the proposed project will better manage water resources within the Weber Basin Project by providing better water use data to WBWCD and wholesale customers. It is expected that this increased knowledge of water use will encourage conservation and essentially contribute additional water to the basin.

#### Evaluation Criterion E- Department of Interior Priorities

Following are DOI priorities that are addressed as part of this project:

- 1. Creating a conservation stewardship legacy second only to Teddy Roosevelt** - The proposed project will utilize the latest Automatic Metering Infrastructure technology to collect meter data where it was not feasible to do so in the past. This will allow for increased conservation and better water management to nearly 600,000 people. This project is also an opportunity to expand capacity of existing DOI infrastructure because better metering information will help the District reduce peak demands and promote conservation.
- 2. Utilizing our Natural Resources**- The proposed project will help water to be used more efficiently and will reduce peak demands on infrastructure. This will result in energy

savings due to decreased well pumping and other energy costs. Currently WBWCD receives most of its power through federally owned hydroelectric facilities. Conserving energy will allow this American Energy resource to be stretched further.

3. **Restoring Trust with Local Communities-** The proposed project will allow for better data to be available to local communities who purchase water from WBWCD. Better water flow data availability will not only reduce conflict but will increase trust between communities, environmental interests and regulatory agencies.
4. **Modernizing our infrastructure-** The proposed project will modernize WBWCD's existing infrastructure with the latest metering technology.

## 5. Environmental and Cultural Resources Compliance

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

The project will not impact the surrounding environment. Since all work will be completed within existing vaults and previously disturbed areas, there is no excavation, earthwork, or other physical impacts. No animal habitats will be negatively impacted.

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?

No endangered species are impacted by this project.

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.

There are wetlands in the District's boundaries, however, this project will not affect or have any impact on any wetland areas.

4. When was the water delivery system constructed?

The original District/Reclamation Project began in the late 1950's and continued over a several year period in the early 1960's. Since then additional infrastructure such as potable pipelines, conveyance canals and pipes have been added to meet the growing population water needs.

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, there will be no major modifications to the District's irrigation system. The proposed work will only impact piping within existing concrete vaults.

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, WBWCD is not aware of any buildings, structures or features that would be impacted or would qualify.

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

No, WBWCD is not aware of any archeological sites in the proposed project area.

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

No.

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

No.

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

No.

## 6. Required Permits and Approvals

Since the proposed work is largely replacing turbine type meters with new metering and AMI technology, it is not expected that a Permit to Construct will be required from the Utah Division of Drinking Water (DDW). In addition, if work is required outside of an existing vault, appropriate permits will be filed with the municipality. As stated previously, the Environmental Document will be completed in cooperation with Reclamation's Provo Area Office.

## 7. Official Resolution

An official resolution is attached as Attachment C.

## 8. Project Budget

### Funding Plan and Letters of Commitment

1. How you will 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).

The District will fund all non-Federal contributions entirely with Weber Basin Water Conservancy District operating revenues.

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

N/A

3. Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards the cost share unless otherwise allowed by statute.

N/A

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

N/A

FUNDING SOURCES	FUNDING AMOUNT
<b>Non-Federal Entities</b>	\$74,884.04
<b>Non-Federal Subtotal</b>	\$74,884.04
<b>Other Federal Entities</b>	\$0.00
<b>Other Federal Subtotal</b>	\$0.00
<b>Requested Reclamation Funding</b>	\$74,884.03
<b>Total Project Funding</b>	\$149,768.07

FUNDING SOURCES	% of Total Project Cost	Total Cost by Source
Recipient Funding	50%	\$74,884.04
Reclamation Funding	50%	\$74,884.03
Other Federal Funding	0%	\$0.00
Totals	100%	\$149,768.07

### Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	\$/Unit	Quantity		
<b>Salaries &amp; Wages</b>	\$0.00	-	-	\$0.00
<b>Fringe Benefits</b>	\$0.00	-	-	\$0.00
<b>Travel</b>	\$0.00	-	-	\$0.00
<b>Equipment</b>	\$0.00	-	-	\$0.00
<b>Supplies and materials</b>	\$0.00	-	-	\$0.00
<b>Contractual /Construction</b>				
Retrofit Existing Meters with Encoder and AMI Endpoint	\$462.73	4	EA	\$1,850.91
4" Mag Meter & AMI Endpoint	\$3,892.90	11	EA	\$42,821.89
6" Mag Meter & AMI Endpoint	\$5,897.91	8	EA	\$47,183.24
8" Mag Meter & AMI Endpoint	\$8,772.91	2	EA	\$17,545.82
10" Mag Meter & AMI Endpoint	\$11,985.40	2	EA	\$23,970.80
12" Mag Meter & AMI Endpoint	\$13,395.41	1	EA	\$13,395.41
<b>Other</b>				
Environmental Report	\$3,000	1	EA	\$3,000
<b>Total Direct Costs</b>				\$149,768.07
Indirect Costs	\$0.00	-	-	\$0.00
<b>Total Project Costs</b>				<b>\$149,768.07</b>

## Budget Narrative

### Salaries & Wages

No WBWCD Salaries or Wages will be included. WBWCD's staff time will be over and above the cost of the project and will not be counted toward the project cost.

### Fringe Benefits

No fringe benefits will be required.

### Travel

No travel will be required.

### Equipment

Equipment is included as a cost in the Contractual /Construction portion of the project. Equipment will be procured by the District. Procurement will be consistent with state requirements.

### Materials and Supplies

Materials and Supplies is included as a cost in the Contractual /Construction portion of the project and will be documented as required.

### Contractual /Construction

In order to determine unit costs which were included in the cost estimate for this project, WBWCD relied upon budgetary cost information for the equipment, materials and supplies required for a typical meter of each size. WBWCD personnel will install the new equipment.

### Environmental and Regulatory Compliance Costs

The environmental document for this project will be minimal. The cost was included at \$3,000 which is 2% of the project cost.

### Reporting

WBWCD's staff time to prepare the reports will be over and above the cost of the project and will not be counted toward the project cost.

### Other Expenses

No other expenses will be part of the project.

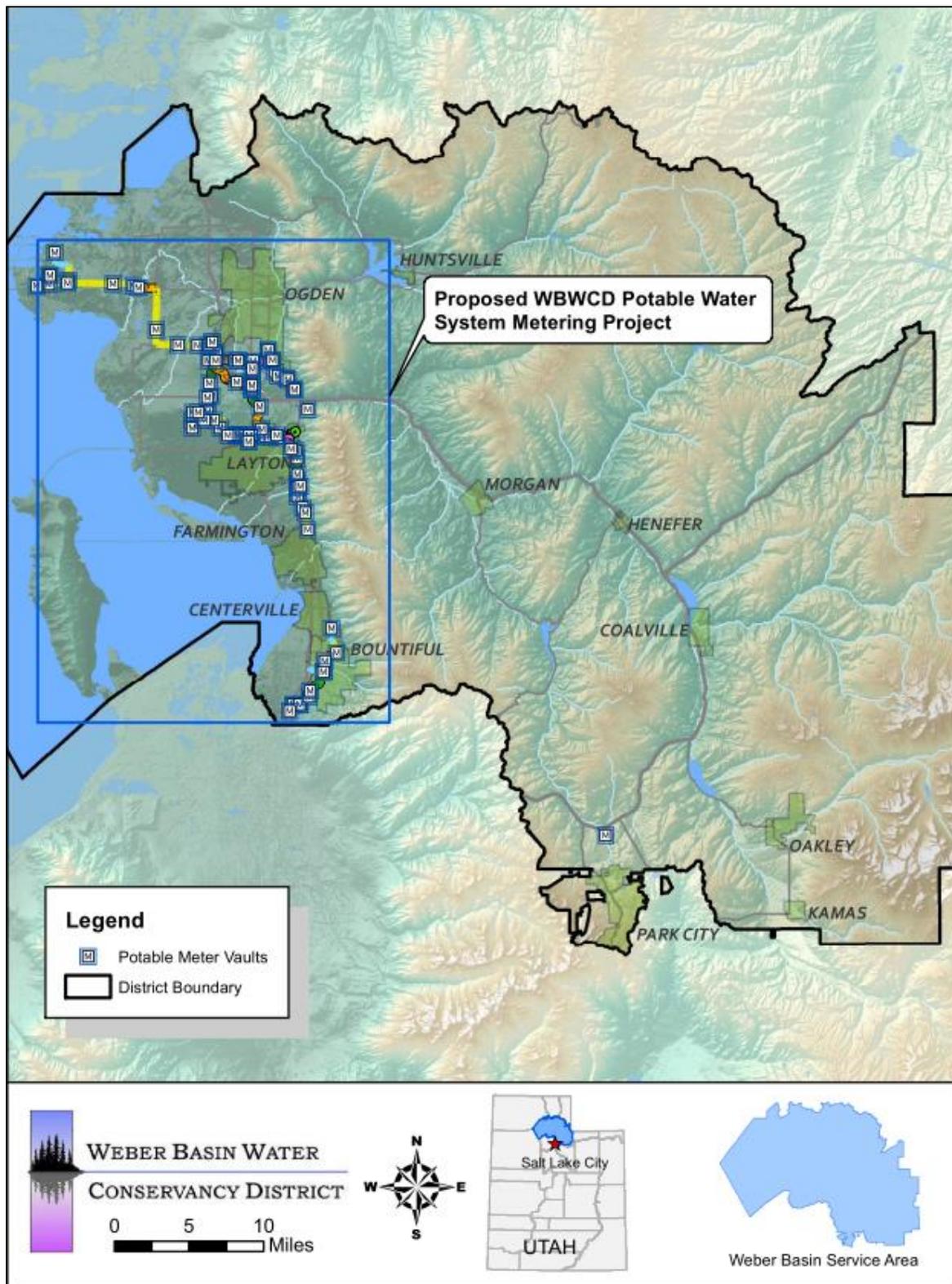
### Indirect Costs

No indirect costs will be part of the project.

### Total Costs

WBWCD Portion	Fed Portion	Total
\$74,884.04	\$74,884.03	\$149,768.07

Attachment A.  
Map of the District's Service Area (Project Area)



Attachment B.  
Weber Basin Delivery System Information

## Weber Basin Water Principal Infrastructure

### DAMS & RESERVOIRS

Name	Location	Type of Dam	Height (ft)	Total Capacity (AF)	Usable District Capacity (AF)	Acquisition Dates
Causey	Eastern Weber County	Earth & Rock	200	7,870	6,870	1962-1964
East Canyon	Southern Morgan County	Concrete Arch	245	51,200	20,100	1965-1967
Last Creek	Eastern Morgan County	Earth & Rock	220	22,500	20,010	1964-1966
Pineview	Ogden Valley, Weber County	Earth & Rock	91	110,150	66,228	1955-1957
Smith & Morehouse	South-eastern Summit County	Earth & Rock	82	8,350	6,560	1984-1988
Wanship	Summit County	Earth & Rock	156	62,120	60,860	1954-1957
Willard	Southern Box Elder County	Earth	36	227,189	202,160	1957-1963

### AQUIFER STORAGE & RECOVERY

Name	Location	Pond Area (acres)	Capacity (cfs)	Acquisition Dates
ASR	Weber County	7.5	10	2002

### DIVERSIONS

Name	Location	Pass-Through Capacity (cfs)	Acquisition Dates
Ogden Valley	South Fork of Ogden River	2,000	1962-1964
Slatsville	Weber River west of Ogden	9,000	1956-1957
Stoddard	Weber River north of Morgan	6,000	1955-1956

### HYDRO GENERATION POWER PLANTS

Name	Location	Type	Capacity (kw)	Acquisition Dates
Causey	Eastern Weber County	2 unit	2,100	1999-2000
Gateway	Mountain Green	1 unit	4,275	1957-1958
Wanship	Wanship	1 unit	1,950	1957-1958

### CANALS, TUNNELS & PIPELINES

Name	Location	Type	Capacity (cfs)	Length (miles)	Acquisition Dates
Davis Aqueduct	Davis County	Concrete pipe	355	23.0	1954-1957
Gateway Canal	Morgan County	Concrete-lined	700	8.5	1954-1956
Gateway Tunnel	Morgan and Davis County	Concrete-lined	435	3.3	1952-1954
Layton Canal	Davis County	Earth-lined/concrete-lined/pipe	260	18.0	1962-1964
M&I Pipelines	Davis and Weber County	Varies 6"-48"	varies	80.0	1955-2012
Ogden Valley Canal	Weber County	Part earth-lined	35	9.2	1962-1964
Secondary Pipelines	Davis and Weber County	Varies 2"-36"	varies	325.0	1955-2012
Weber Aqueduct	Weber County	Concrete pipe	80	5.0	1954-1956
Western Summit County	Summit County	Ductile Iron	8.9	9.0	2013
Willard Canal	West Weber County	Earth-lined/concrete-lined	1,050	11.0	1961-1963

### PUMPING PLANTS

Name	Location	Capacity (cfs)	Height of Lift (ft)	Acquisition Dates
Antelope Booster	Layton	22	50	1978
East Bountiful	Bountiful	18	475	1955
East Layton	Layton	9	65	1955
Gateway	Mountain Green	150	150	1995
Kanesville #1	West Haven	3	218	2000
Kanesville #2	West Haven	10	315	2001
Layton Canal	West Haven	260	23	1955
Old Post Rd Booster	Ogden	6	200	1960
Rockport	Wanship	25	45	2009
Roy Drought Relief	Roy	150	340	1981
Sand Ridge East	Layton	9	92	1955
Sand Ridge West	Layton	15	138	1955
South Davis	Bountiful	18	530	1955
Unitah Bench	South Ogden	18	365	1955
Val Verda	Bountiful	6	240	1955
West Haven #1	West Haven	10	218	2003
West Haven #2	West Haven	3	230	2010
Willard No. 1	West Weber County	500	45	1960
Willard No.2	West Weber County	250	20	1960

### UNDERGROUND WATER WELLS

Name	Location	Type	Capacity (cfs)	Acquisition Dates
Ben Lomond	Harrisville	M&I	1.8	2001
Bountiful	Bountiful	M&I	5.2	1961
Clearfield #1	Clearfield	M&I	5.0	1961
Clearfield #2	Clearfield	M&I	5.0	1961
Davis Boulevard	Bountiful	M&I	2.2	2003
District Well #2	South Weber	M&I	11.0	1985
District Well #3	South Weber	M&I	10.0	1990
Fairfield	Layton	M&I	10.0	1992
Farmington #1	Farmington	Irrigation	5.0	1995
Farmington #2	Farmington	Irrigation	5.0	1996
Laytona	Layton	M&I	5.0	1958
Mills Park	West Bountiful	Irrigation	2.2	2011
North Ogden	North Ogden	M&I	1.8	1967
North Weber	Harrisville	M&I	1.6	2006
Orchard Dr. Well	Bountiful	M&I	0.8	1991
Riverdale	Riverdale	M&I	6.6	1960
South Weber #1	South Weber	M&I	10.0	1962
South Weber #2	South Weber	M&I	10.0	1962
Washington Terrace	Washington Ter.	Irrigation	4.0	2013
West Bountiful 5th South	West Bountiful	Irrigation	4.0	1992
West Bountiful Golf	West Bountiful	Irrigation	2.0	1993

### WATER TREATMENT PLANTS

Name	Location	Capacity (MGD)	Acquisition Dates
Davis North WTP	Layton, Davis	46	1955
Davis South WTP	Bountiful, Davis	16	1955
East Canyon WTP	Jeremy, Summit	5.5	2013
Weber South WTP	Ogden, Weber	32	1955

AF=Acro Feet • CFS=Cubic Feet per Second • MGD= Million Gallons per Day

**Attachment C.**  
**Official Resolution**

A resolution will be provided after WBWCD's August Board of Trustees meeting.