



WEBER
BASIN
WATER
CONSERVANCY
DISTRICT

WaterSMART Grants:
Small Scale Water Efficiency
Projects FY 2017

WBWCD POTABLE WATER SYSTEM METERING PROJECT



APPLICANT:

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

PROJECT MANAGER:

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Table of Contents

| | |
|--|----|
| 1. Executive Summary..... | 1 |
| Applicant Info | 1 |
| Project Summary | 1 |
| Schedule | 1 |
| Federal Facility..... | 2 |
| 2. Background Data | 2 |
| Map..... | 2 |
| Water Supply..... | 2 |
| Source of water supply and water rights involved | 2 |
| Current water uses and number of water users served | 3 |
| Current and projected water demand/ Potential shortfalls in water supply | 4 |
| Water Delivery System..... | 4 |
| Relationship with Reclamation..... | 4 |
| 3. Project Description | 5 |
| 4. Evaluation Criteria..... | 6 |
| Evaluation Criterion A- Planning Efforts Supporting the Project..... | 6 |
| Evaluation Criterion B- Project Benefits | 7 |
| Evaluation Criterion C- Project Implementation | 8 |
| Evaluation Criterion D- Nexus to Reclamation | 9 |
| 5. Environmental and Cultural Resources Compliance..... | 10 |
| 6. Required Permits and Approvals..... | 11 |
| 7. Official Resolution | 11 |
| 8. Project Budget | 11 |
| Funding Plan and Letters of Commitment | 11 |
| Budget Proposal | 12 |
| Budget Narrative | 13 |

Attachments:

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

Attachment B – Weber Basin Delivery System Information

Attachment C – Official Resolution

WBWCD POTABLE WATER SYSTEM METERING PROJECT

Small-Scale Water Efficiency Projects FY 2017

1. Executive Summary

Applicant Info

Date: March 9, 2017

Applicant Name: Weber Basin Water Conservancy District

City, County, State: Layton, Davis, Utah

Project Manager:

Name: Derek Johnson, P.E., Weber Basin Water Conservancy District

Address: 2837 E. Highway 193, Layton, Utah 84040

Phone: 801-771-1677

Email: djohnson@weberbasin.com

Project Funding Request: Small Scale Water Efficiency Projects- Total Cost \$150,000

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 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 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 November of 2017 and will continue through April of 2019. 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

Map

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.

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 | 7,848 | 7,848 |
| Wells (both District and Project) | 70,990 | 35,495 |
| Stock Water | 20,601 | 16,481 |
| Decreed Water Rights | 3,960 | 3,168 |
| Totals: | 480,677 | 269,906 |

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 224,195 acre-feet, with 85,126 acre feet categorized as municipal and industrial (M&I) water, and the remaining 139,069 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 2016, existing contracts obligated 83% 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 575,500 to 1,099,100 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:

- 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. Project Description

WBWCD proposes to complete a 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 has selected 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.

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- 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 2013. The District's plan is updated and resubmitted every 5 years. Specifically, the proposed project addresses Section 8.1 and Section 8.2 within the Water Conservation Plan. The following includes a quote from each section that is applicable to the proposed project:

- **Section 8.1 – Water Management** – “continue to add and update the District SCADA system in order to provide operators with the data they need to minimize the amount of water wasted or lost throughout the District.”
- **Section 8.2 – Metering and Accounting** – “The District will continue to add to and upgrade its metering system to ensure that losses are detected and kept to a minimum”

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' 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 B- 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

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. WBWDC 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.

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

The Utah Division of Drinking Water will be contacted to confirm that no permit is required for this work. 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 |
|--------------------------------------|----------------|
| Non-Federal Entities | \$75,000.00 |
| Non-Federal Subtotal | \$75,000.00 |
| Other Federal Entities | \$0.00 |
| Other Federal Subtotal | \$0.00 |
| Requested Reclamation Funding | \$75,000.00 |
| Total Project Funding | \$150,000.00 |

| FUNDING SOURCES | % of Total Project Cost | Total Cost by Source |
|-----------------------|-------------------------|----------------------|
| Recipient Funding | 50% | \$75,000.00 |
| Reclamation Funding | 50% | \$75,000.00 |
| Other Federal Funding | 0% | \$0.00 |
| Totals | 100% | \$150,000.00 |

Budget Proposal

| Budget Item Description | Computation | | Quantity Type | Total Cost |
|--|-------------|----------|---------------|---------------------|
| | \$/Unit | Quantity | | |
| Salaries & Wages | \$0.00 | - | - | \$0.00 |
| Fringe Benefits | \$0.00 | - | - | \$0.00 |
| Travel | \$0.00 | - | - | \$0.00 |
| Equipment | \$0.00 | - | - | \$0.00 |
| Supplies and materials | \$0.00 | - | - | \$0.00 |
| Contractual /Construction | | | | |
| 8" Mag Meter & AMI Endpoint | \$11,113 | 3 | EA | \$33,340 |
| 6" Mag Meter & AMI Endpoint | \$8,919 | 3 | EA | \$26,758 |
| 4" Mag Meter & AMI Endpoint | \$4,907 | 12 | EA | \$58,885 |
| 3" Mag Meter & AMI Endpoint | \$4,284 | 2 | EA | \$8,567 |
| 2" Mag Meter & AMI Endpoint | \$3,660 | 2 | EA | \$7,320 |
| 1" Mag Meter & AMI Endpoint | \$1,293 | 3 | EA | \$3,880 |
| Retrofit Existing Meters with Encoder and AMI Endpoint | \$825 | 10 | EA | \$8,250 |
| Other | | | | |
| Environmental Report | \$3,000 | 1 | EA | \$3,000 |
| | | | | |
| Total Direct Costs | | | | \$150,000.00 |
| Indirect Costs | \$0.00 | - | - | \$0.00 |
| Total Project Costs | | | | \$150,000.00 |

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.

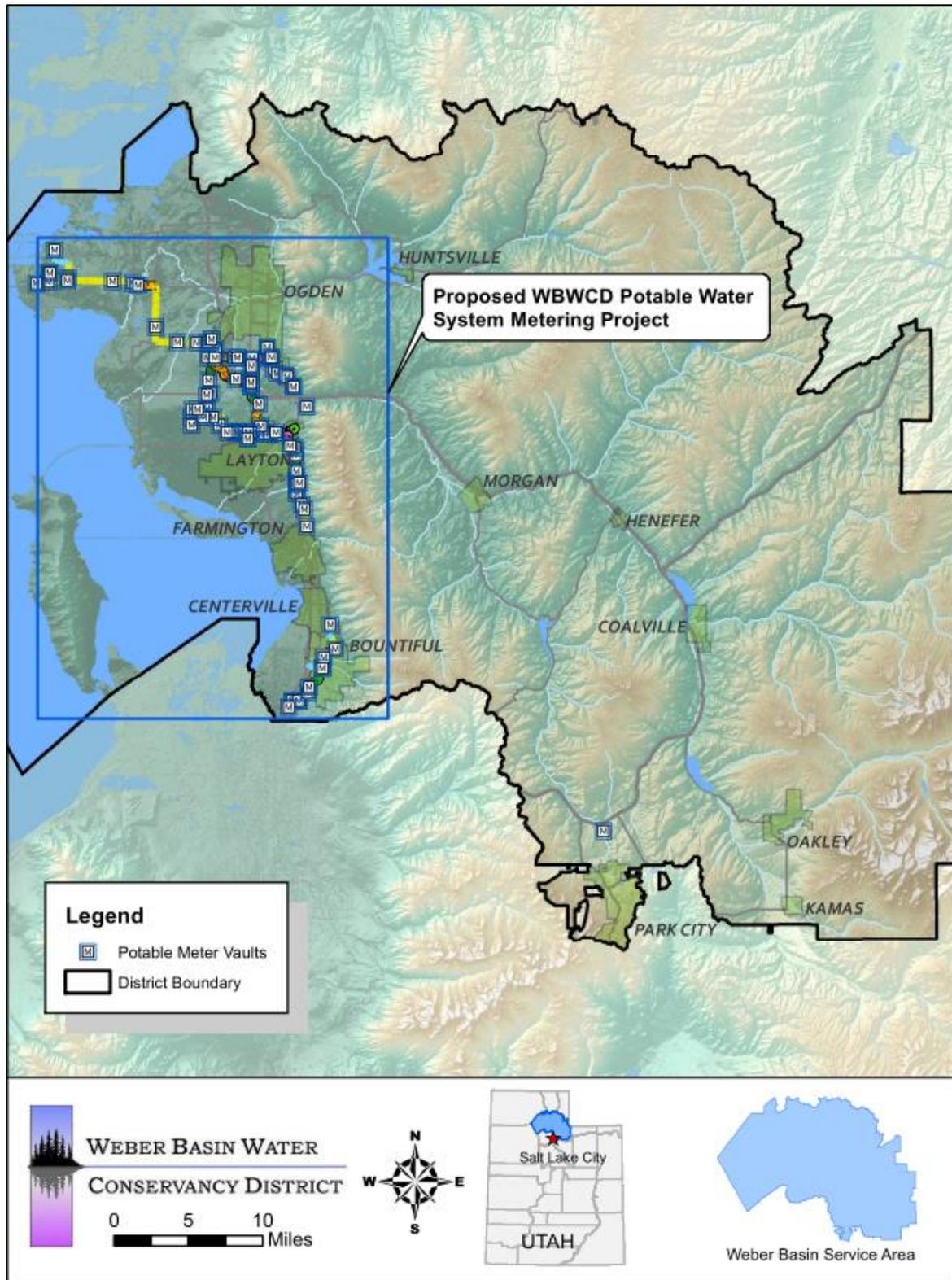
Indirect Costs

No indirect costs will be part of the project.

Total Costs

| WBWCD Portion | Fed Portion | Total |
|---------------|-------------|-----------|
| \$75,000 | \$75,000 | \$150,000 |

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**



WEBER BASIN WATER CONSERVANCY DISTRICT

2837 East Highway 193 • Layton, Utah 84040 • Phone (801) 771-1677 • (SLC) 359-4494 • Fax (801) 544-0103

**RESOLUTION OF THE BOARD OF TRUSTEES
OF
WEBER BASIN WATER CONSERVANCY DISTRICT**

Tage I. Flint
General Manager/CEO

WHEREAS, the Weber Basin Water Conservancy District (District) is committed to the concept of water conservation;

Board of Trustees:

Kyle R. Stephens
President
Davis County

WHEREAS, the District recognizes the need to conserve water and use it more efficiently in order to provide for the needs of the growing population in the District's Boundaries;

Kym O. Buttschardt
Weber County

Jay V. Christensen
Weber County

WHEREAS, the District strongly supports the Bureau of Reclamation's goals set forth in the 2017 WaterSMART Grants: Small-Scale Water Efficiency Projects program;

Kerry W. Gibson
Weber County

Marlin K. Jensen
Weber County

NOW THEREFORE, BE IT RESOLVED that the Board of Trustees for the Weber Basin Water Conservancy District agrees and authorizes that:

John Petroff Jr.
Davis County

Paul C. Summers
Davis County

Dave Ure
Summit County

Dee Alan Waldron
Morgan County

1. The Board has reviewed and supports the proposal submitted;
2. The District will provide \$75,000 of the funding for the WaterSMART Small-Scale Water Efficiency Projects for the proposed *Culinary Meter Project*;
3. If selected for the proposed project, the District will work with Reclamation to meet established deadlines for entering into a cooperative project.

ATTEST

I, TAGE I. FLINT, Secretary of the Weber Basin Water Conservancy District, hereby certify that the foregoing is a true and correct copy of a resolution adopted by the Board of Trustees of the Weber Basin Water Conservancy District at a regular meeting held January 26, 2017.




Tage I. Flint, Secretary