



— BUREAU OF —
RECLAMATION

WaterSMART:
Water and Energy Efficiency Grants
BOR-DO-21-F001

FY
2021

Midway Irrigation Company

Secondary Water
Metering Project

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Technical Proposal and Evaluation Criteria

Executive Summary



Photo 1 – Midway City, Utah

Applicant Info

Date: September 17, 2020

Applicant Name: Midway Irrigation Company (MIC)

City, County, State: Midway, Wasatch County, Utah

Project Manager:

Brandon Nielsen

Project Manager/Engineer

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Project Funding Request: **Funding Group I \$500,000**; Total Project Cost \$1,028,500

Project Summary

One paragraph project summary that provides the location of the project, a brief description of the work that will be carried out, any partners involved, expected benefits and how those benefits relate to the water management issues you plan to address.

The proposed Midway Irrigation Company Secondary Water Metering Project, located in Midway City, Utah, and surrounding unincorporated areas of Wasatch County (West of the Provo River and North of Deer Creek Reservoir), will install 750 residential secondary water meters. The project will implement all of the required hardware and software to read and document water use within the Midway Irrigation Company (MIC) service area. The expected benefits include:

1. **Water Conservation:** 293 acre-feet of water will be saved annually with the completion of this project.
2. **Education Information:** Monthly water usage statements will be implemented to indicate water used as opposed to water needed for each residential property. The

statement will also include efficiency tips and conservation landscaping practices to inform and educate users.

3. **Reduced Conflict:** Increased awareness of how much water residential users are taking can educate and inform all users to help resolve conflicts over water. Agricultural water users have been troubled – especially during drought years – that residential users are taking too much water for their lawns and gardens, preventing farmers from receiving their full water share.
4. **Water Reliability:** Metering and increased water management for residential water users will contribute to better management of MIC’s water resources and provide greater water reliability for agricultural users who share the water.

Length of Time and Estimated Completion Date

State the length of time and estimated completion date for the proposed project.

The proposed project is ready to move forward as soon as it is awarded. Based on past Reclamation contracting timelines, MIC anticipates that they will begin the project in September/October 2021. Project completion is expected in September 2023, which adheres to the two-year timeframe for Funding Group I projects. MIC anticipates that a Categorical Exclusion will be prepared by Reclamation. The project will take place in previously disturbed areas and within existing road alignments. The environmental document will take three to four months. The installation of the meters will take place during the irrigation season (March 2022 – October 2022 and March 2023 – August 2023). The education and information process will be ongoing with regular public information regarding the time and placement of the meters throughout the project.

Federal Facility

Whether or not the project is located on a Federal facility.

The proposed project is not directly located on a Federal facility; however, MIC receives its water from Jordanelle Reservoir – a Reclamation facility – via the Provo River. This metering project will allow better management of MIC’s water right and Jordanelle water resources. It will allow water to remain in the Provo River for longer times during the irrigation season. This will benefit downstream water users, habitats, and recreational opportunities, including Deer Creek Reservoir, which is also a Reclamation facility.

Project Location

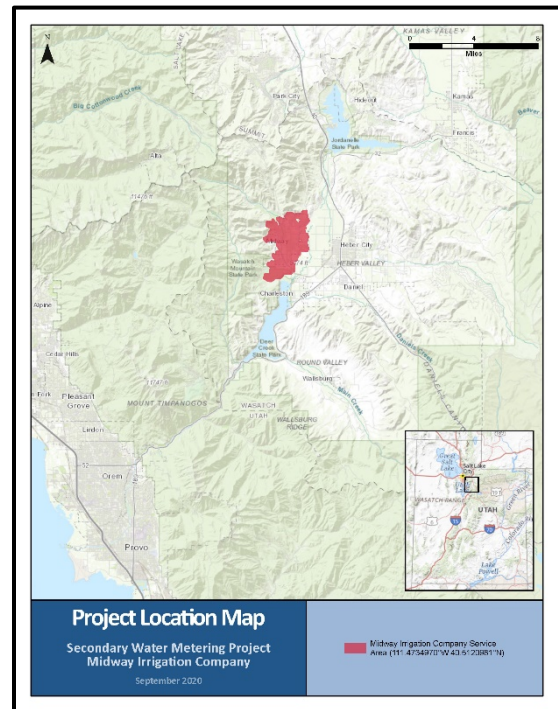
Provide detailed information on the proposed project location or project area including a map showing the specific geographic location. For example, {project name} is located in {state and county} approximately {distance} miles {direction, e.g., northeast} of {nearest town}. The project latitude is {###°##’N} and longitude is {###°##’W}.

Geographic Location

The proposed project will take place within MIC’s service area, which includes Midway City and other unincorporated areas of Wasatch County, Utah located West of the Provo River and

North of Deer Creek Reservoir. The project latitude is 40.5120981°N and longitude is 111.4734970°W. Maps showing the project location and detailed project info are included in **Attachment A and Attachment B**, respectively.

Figure 1 – Project Location Map



Technical Project Description

Provide a comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work. This description should provide detailed information about the project including materials and equipment and the work to be conducted to complete the project.

MIC has approximately 1,000 residential secondary irrigation connections, some are already metered due to the requirement that all new developments have to install secondary water meters. MIC’s objective for this project is to install 750 secondary water meters on existing connections within their system, and to implement the required hardware and software to read and document water use within their service area. The meters are equipped with endpoints that allow the collection of hourly data using a drive-by reader or a fixed network Advanced Metering Infrastructure (AMI) system. The proposed activities are estimated to conserve 293 acre-feet of water annually within MIC’s service area.

Prior to any physical construction or disruption to individual properties, a public information campaign will be organized to identify and inform users who will be affected. Notification of when the meters will be installed will happen at least 48 hours prior to installation on user’s properties. As part of this campaign, affected neighborhoods will be informed of what is being done and when, where, and how it will be accomplished. An informational flier will be created, and neighborhoods canvassed to explain the project and receive feedback from residents. Residents affected by this project will be given a designated point of contact to which they may ask questions or voice concerns regarding meter installation in their area.

E.1. Technical Proposal: Evaluation Criteria

E.1.1. Evaluation Criterion A – Quantifiable Water Savings (30 Points)

Quantifiable Water Savings

Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.

The estimated amount of water expected to be conserved as a direct result of this project is 293 acre-feet per year.

Describe current losses. Explain where the water that will be conserved is currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground).

In most cases, the water is being lost to evapotranspiration and evaporation due to an overuse of water on residential lawns, gardens, and sidewalks. Excess watering is a major issue causing water to run off properties into streets and stormdrain systems.

Describe the support/documentation of estimated water savings. Provide sufficient detail supporting how the estimate was determined, including all supporting calculations.

Water savings was developed based on metering data documented by Weber Basin Water Conservancy District (WBWCD) over the past seven years, who has installed over 5,000 secondary water meters within their service area. Using this information, MIC has estimated that installing 750 secondary water meters on their system will result in water savings of 293 acre-feet per year. This estimate is based on an average water savings of 0.39 acre-feet per residential secondary water connection.

Municipal Metering

a. *How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.*

It is estimated that the proposed project will conserve 293 acre-feet per year. Based on the data provided by WBWCD, metered secondary user connections used on average 0.91 AF/connection/yr. During the same time period, un-metered secondary connections were estimated to have used on average 1.30 AF/connection/yr. The 1.30 AF/connection/yr. was calculated based on data from main line flow meters. Meter data has shown that secondary users that have a secondary meter use significantly less water than those who are not metered. On average, metered secondary connections used 0.39 AF/per connection less than unmetered connections. MIC believes additional conservation is possible beyond the observed 0.39 AF/connection/yr if users continue to respond to the targeted water use given for their properties. The following calculation shows the anticipated water savings for the proposed metering project.

$$750 \text{ new meters} \times 0.39 \text{ AF/conn/yr. savings} = 293 \text{ AF/yr.}$$

b. *How have current distribution system losses and/or the potential for reductions in water use by individual users been determined?*

Water reductions for individuals in the proposed project area are based on actual metered connection data collected by WBWCD. This data shows that having a meter on a water connection and showing water users what they use is effective. Without usage information from the meter, people assume they are using a reasonable amount of water. However, when the actual usage is known, coupled with help and information on proper landscape water needs, data shows that water use in metered areas has decreased. The calculation for how much each user can reduce is based on average use from what has been seen and recorded. However, it is believed that even greater savings can be achieved depending on user demographics, such as parcel sizes, site locations, and other factors that can play a role

in high usage. MIC is confident that there will be substantial water savings with each new meter based on the historical data on meters already installed by WBWCD.

- c. *For installing end-user water service meters, e.g., for a residential or commercial building unit., refer to studies in the region or in the applicant’s service area that are relevant to water use patterns and the potential for reducing such use. In the absence of such studies, please explain in detail how expected water use reductions have been estimated and the basis for the estimations.*

Weber Basin Water Conservation District’s studies over the past seven years have provided MIC with the information needed to move forward with this project. Data is available for all WBWCD’s meters they have installed, but in order to have some consistency over time, WBWCD used data from a group of 1,057 meters that have usage records from 2012-2018. MIC has used this information to develop their understanding of possible water savings for their service area.

WBWCD collected data and compiled it in hourly increments to analyze and determine the effectiveness of these 1,057 meters, during the irrigation seasons of the past seven years. In addition to usage data, WBWCD has used mapping technology to identify the parcel size and the area of each parcel that would be considered to be “irrigated area” (everything that is not a physical structure or hardscape surfaces).

Figure 2 below offers a side-by-side comparison of WBWCD’s 2012-2018 irrigation seasons, again using the metered data group for calculation. On average, customers are using less than the traditional allocation, which is 3 acre-feet per gross acre, per year. Average usage compared to estimated need over the seven years shows improvement. Users comply with the volume given them, as the estimated demand shows a significant improvement from 145 percent in 2012 to just 90 percent in 2015, but due to the hot and dry summer of 2016, 2017, and 2018, all three saw an increased in usage.

Figure 2 - Water Savings Comparison – Source WBWCD

Water Savings Comparisons								
	2012	2013	2014	2015	2016	2017	2018	
Used Gallons	284,912,371	220,146,962	205,346,968	168,066,551	217,748,680	236,101,249	252,738,705	
Used AF	874	675.3	629.9	515.5	667.9	724.2	775.6	
Used AF / Gross Acreage	2.69	2.08	1.94	1.6	2.06	2.23		
Landscaped Area	225.3	225.3	225.3	225.3	225.3	225.3	225.3	
Used AF/ Landscaped Area Acres	3.9	3	2.8	2.3	3	3.2	3.4	
Estimated Need (inches)	30.46	29.72	24.81	22.33	28.6	29	33.7	
Average % Used of Est. Need	153.64%	121.13%	135.43%	123.60%	124.52%	132.37%	122%	
Average % Allocation Used	82.44%	63.70%	59.41%	48.62%	63.00%	68.31%	73%	
Average Allocation per Parcel/yr.	1.003	1.003	1.003	1.003	1.003	1.003	1	
Total Allocation	1060.171	1060.171	1060.171	1060.171	1060.171	1060.171	1060.2	
*This data includes 1,057 meters that have data for 2012-2017 with accurate landscape area.								

As WBWCD develop these Water Savings Comparisons, they keep the estimated need the same because it is based on the historical average reference rates with parcel size. Most

users exceed the estimated need, which is listed on every metered customer’s Secondary Water Use Report and is almost always less than the allotted amount they have for their parcel. Figure 3 to the right is a sample of WBWCD’s Secondary Water Use Report, which gives useful information and also includes instructions on how to read the report. MIC may use a similar, but simpler report for their service area.

WBWCD developed the estimated water use need based on the moisture required for turf, which has the highest water demand in any landscape. The assumption is made that the entire landscape area is turf, which gives users a generous amount of water for different landscape needs. Considering that most yards are not 100 percent turf and that other landscaping plants are more water-efficient (trees, shrubs, gardens), it is a reasonable goal to have users reduce water consumption to meet their estimated water need or below the estimated need. This data seems conclusive in showing that having a meter, a targeted goal, and receiving usage information (educating) promotes accountability and motivates behavior changes.

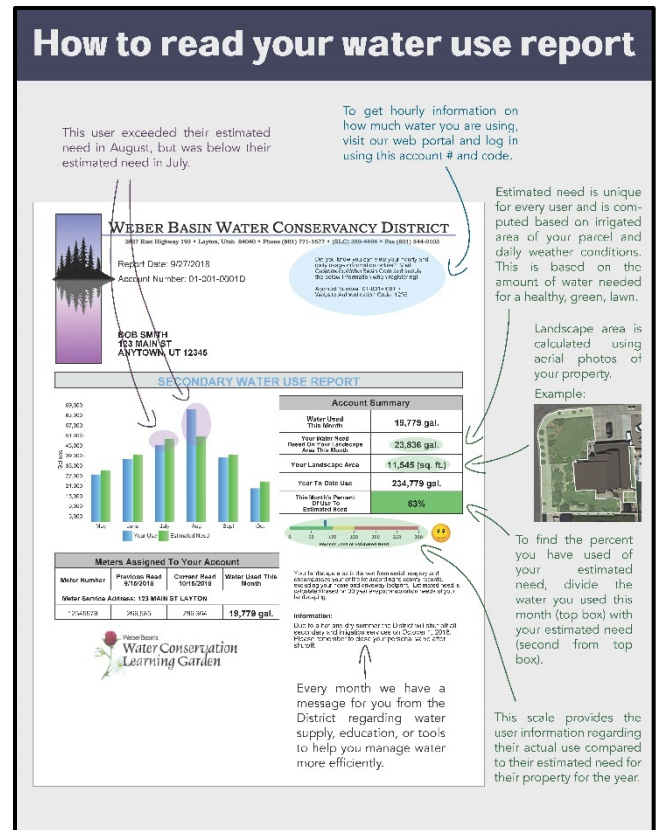


Figure 3 - WBWCD Sample Secondary Water Use Report

- d. *Installation of distribution system meters will not receive points under this criterion. Accordingly, these projects must be paired with a complementary project component that will result in water savings in order for the proposal to receive credit for water savings, e.g., pipe installation using upgraded materials, or individual water service meters.*

The proposed project **does not** include the installation of **main distribution system meters**. The project **will install** 750 **secondary end-user meters** within the MIC secondary system service area. The installation of these end-user meters will result in a quantifiable and sustainable water savings of 293 acre-feet per year.

- e. *What types (manufacturer and model) of devices will be installed and what quantity of each?*

MIC plans on installing the Sensus Iperl meter on all 750 connections. The meter endpoints can collect hourly data, and the meter read system that MIC anticipates to initially use is a drive-by reader, with software and a computer to manage the data. The software is compatible with a fixed AMI network system which they may upgrade to in the future.

- f. *How will actual water savings be verified upon completion of the project?*

At the completion of each year of the project, MIC will have water usage data from every meter installed. The data will be in hourly increments from April 15 to October 15. The data

will also include a monthly consumption value. Water savings will not be fully known after just one irrigation year, so MIC will prepare a water savings comparison chart much like WBWCD did and will track the same 750 meters from this project each year for a series of years to document the changes.

MIC will be able to use historical main line meter data to compare usage from years prior to metering with years following metering. Comparing historical water use to use after full implementation of the meter project will more accurately depict what impact the installation of individual meter has on users and their entire system.

E.1.2. Evaluation Criterion B – Water Supply Reliability (18 Points)

Address how the project will increase water supply reliability. Provide sufficient explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:

1. *Will the project address a specific water reliability concern? Please address the following:*
 - o *Explain and provide detail of the specific issue(s) in the area that is impacting water reliability, such as shortages due to drought, increased demand, or reduced deliveries. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)?*

The specific issue affecting MIC's service area is drought. Utah has experienced twelve drought years over the past fifteen years. These drought years range in severity, but all have had a real impact on MIC's service area. According to NRCS' May 1, 2020 Utah Water Supply Outlook Report, 2020 did not deliver Utah's typical amount of precipitation. "As of May 1st, the statewide snow water equivalent (SWE) is 78% of normal. By comparison, at the beginning of April, the statewide SWE was 107%. This change resulted from a well below average amount of precipitation for the month and widespread early melting of Utah's snowpack," which accounts for most of the annual streamflow in Utah and the western United States. NRCS' report called this a "disappointing amount of snow and rain." A closer look at the Provo River Basin, which is where MIC draws most of its water, shows a below normal snowpack of 69% for 2020, compared to 151% last year. According to the report, precipitation in April was far below average at 39%!



Photo 2 - Provo River, Midway, Utah

Precipitation is especially important during the summer months because during rainfall events, agricultural and residential users do not need to turn on their sprinklers. When this happens, stored irrigation water from Jordanelle as well as captured stream water flowing from the canyons can last longer during the season. However, if the area has a low precipitation summer, then MIC has to rely completely on stored water and will not have enough irrigation water to last the season; especially if snowpack was low during the winter months. 2020 has not been a good year for many reasons, but it has most certainly not been a good year for precipitation and snowpack to provide enough irrigation water for farms and pastures, and for residential lawns and gardens.



Photo 3 – Jordanelle Reservoir

As a result of these challenges, MIC seeks to implement greater water conservation measures for its service area to ensure that they will have enough irrigation water to last the season from year to year. Currently, MIC has no way of knowing how much water its secondary water users are using, and especially no way to monitor usage to ensure that its users are conserving. This project will provide the metering equipment and software needed to measure and monitor individual water usage so that MIC can educate its secondary water users on best water practices.

- *Describe how the project will address the water reliability concern? In your response, address where the conserved water will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

By maximizing the efficiency in which its customers use secondary irrigation water, MIC will be able store water longer, allowing it to come down the river later in the year when it is most needed. This will also allow for a longer irrigation season during drought years. Water conservation will help facilitate the ability for agricultural users to receive their full water share and provide greater water reliability.

- *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

The development of this metering project will allow for more water to be saved and held in the Provo River system, contributing to instream flows and increased water sustainability.

- *Indicate the quantity of conserved water that will be used for the intended purpose.*

For this project, the amount of estimated water savings is 293 acre-feet per year. This amount of water saved will provide a more reliable water supply for agricultural irrigators due to the fact that residential users are overwatering and reducing the amount of irrigation water available to agricultural users.

2. *Will the project make water available to achieve multiple benefits or to benefit multiple water users? Consider the following:*

- *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*

Yes, metering secondary water connections will benefit the multiple sectors served by MIC. MIC serves primarily residential and agricultural properties. Residential use includes lawns and gardens, and agricultural use includes irrigation of alfalfa, small grains cut for hay, and pasture. Residential users will be able to use collected meter data to better understand how they can reduce water usage and contribute to greater water supply reliability.

- *Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project.*

This project will not directly benefit species, but within this water-short basin, all water conservation will provide some sort of benefits as it allows for more water to stay in the river system for longer periods of time, especially during drought years.

- *Will the project benefit a larger initiative to address water reliability?*

The proposed project contributes to a larger initiative to help achieve the Utah Governor's goal of 25 percent water conservation. Through water use awareness education and conservation, MIC is doing its part to help meet this goal and to encourage its users to manage and conserve water resources more efficiently.

- *Will the project benefit Indian tribes?*

No, this project will not directly benefit Indian tribes.

- *Will the project benefit rural or economically disadvantaged communities?*

MIC's service area is a rural area with a population of 5,639 and a median age of 45. This area has an overall poverty rate of 3.03 percent.

- *Describe how the project will help to achieve these multiple benefits. In your response, please address where the conserved water will go and where it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

Conserved water will be stored for longer periods of time in the Jordanelle Reservoir and released later in the irrigation season. The various creeks and springs that MIC draws additional water from will also have water longer during the season. This will benefit agricultural and downstream users, habitats, and recreational opportunities.

3. *Does the project promote and encourage collaboration among parties in a way that helps increase the reliability of the water supply?*

- *Is there widespread support for the project?*

There is widespread support for this project among agricultural users who have ongoing conflicts with residential users. Over the years, this has been a volatile situation, especially during drought years when agricultural users' water shares are reduced, making it difficult to get through the irrigation season. This happens because residential users are not aware of their usage and continue to water without being mindful of conserving the water that sustains local crops and pastures.

- *What is the significance of the collaboration/support?*

Collaboration between MIC and Midway City has been an important part of the decision to move forward on this project. MIC and Midway City participate monthly in a committee established between both entities to coordinate water uses and demands for the future. This committee is called the "Water Authority Board." This is an innovative step not seen in most communities to manage water resources. This collaboration has helped MIC and Midway City avoid many conflicts associated with normal irrigation company and local city interactions over water management.

- *Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?*

Other nearby water providers in the area will benefit from the data and water savings that will be realized by this project. MIC will share their data and information on the water savings and the stability and efficiency of the meters they are using with nearby Cities and other irrigators so they can make sound decisions for their irrigation systems.

- *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*

As stated previously, there is conflict among agricultural and residential water users, especially during drought years when irrigators are usually required to reduce their water use; whereas many residential users are not making any changes due to not having a way to monitor the amount of water they are using.

- *Describe the roles of any partners in the process. Please attach any relevant supporting documents.*

The project will include the support of Midway City Corporation, Central Utah Water Conservancy District, and Jordanelle Special Service District. See **Attachment C – Letters of Support**.

4. *Will the project address water supply reliability in other ways not described above?*

The most significant water supply reliability concerns or measures have been addressed above.

E.1.3. Evaluation Criterion C – Implementing Hydropower (18 Points)

If the proposed project includes construction or installation of a hydropower system, please address the following:

Describe the amount of energy capacity. For projects that implement hydropower systems, state the estimated amount of capacity (in kilowatts) of the system. Provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

The project will not include any hydro elements.

E.1.4. Evaluation Criterion D – Complementing On-Farm Irrigation Improvements (10 Points)

If the proposed project will complement an on-farm improvement eligible for NRCS assistance, please address the following:

The project will not include any on-farm opportunities.

E.1.5. Evaluation Criterion E – Department of the Interior and Bureau of Reclamation Priorities (10 Points)

Address those priorities that are applicable to your project. 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.

Department Priorities

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

MIC is committed to implementing the proposed project, which will monitor and inform water usage to better safeguard water resources and to more fully support the irrigation needs of *all* of its water users (agricultural and residential). The proposed project is an

opportunity for MIC and its water users to work together to create goals and sound water use habits. Working towards these goals and implementing better water use habits will protect Utah’s water resources and ensure these resources are made available to sustain current and future water users during difficult drought years.

2. *Restoring trust with local communities.*

Currently, agricultural water users are troubled that residential users are taking too much water for their lawns and gardens, preventing farmers from receiving their full water share to support crops and pastures. This proposed project will help to eliminate water user infighting by building trust through education, conservation, and accountability. MIC intends to help its users, both agricultural and residential, better manage their water use. The proposed metering project will provide MIC with the resources needed to address residential overuse and conserve valuable water resources.

3. *Modernizing our infrastructure.*

According to a study from 2009 called “Metering Secondary Water in Residential Irrigation Systems,” done by Utah State University, “...by way of innovative meter designs [as is proposed in MIC’s project] ...secondary water systems have had success metering their secondary water.” Modern meter designs on secondary water systems have proven successful in making many water users more aware of how much water they are really using. The study mentions that because secondary water supply is commonly charged at a fixed rate, many water users think that they have the right to an unlimited supply of water. MIC knows this firsthand. However, as this project is implemented, users will come to understand that they do have a limited amount of water that they can use; and the knowledge of how much water they are using will help change their way of thinking.

Reclamation Priorities

1. *Leverage Science and Technology to Improve Water Supply Reliability to Communities*

As was previously explained under “Department Priorities: Modernizing our Infrastructure,” MIC will be using an innovative meter design, a technology which through much science and research, has proven to be a successful tool amongst many irrigation water suppliers in the West to encourage their agricultural and residential communities to save on water usage; so that they might increase water supply reliability in their communities to prepare for difficult drought years.

2. *Address Ongoing Drought*

Like many water suppliers in Utah, MIC has experienced first-hand the adverse effects of ongoing drought on its communities; a drought that has overstayed its welcome and continues to affect countless communities throughout all of Utah. As was explained previously under E.1.2. Evaluation Criterion B – Water Supply Reliability, MIC seeks to address ongoing drought by completing this proposed metering project so that it can monitor secondary water usage within its own service area to ensure that its users are conserving. This project will provide the metering equipment and software needed to

actively measure and monitor individual water usage, and to educate its secondary water users on best water practices. This will ultimately contribute to greater water conservation for its service area, and by extension, the State of Utah.

E.1.6. Evaluation Criterion F – Implementation and Results (6 Points)

E.1.6.1. Subcriterion No. F.1 – Project Planning

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Please self-certify or provide copies of these plans where appropriate to verify that such a plan is in place.

MIC has continually participated in planning with Midway City, who has a Water Master Plan that addresses secondary water needs, and other larger irrigation companies/districts around them, including the Provo River Water Users’ Association. MIC attends planning meetings and takes advantage of opportunities that allow them to understand future needs and plan for growth and drought issues in the area.

Provide the following information regarding project planning:

- 1) *Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, or other planning efforts done to determine the priority of this project in relation to other potential projects.*

MIC documents the growth and needs of their system through GIS data, planning with Midway City, updated system maps, and developing priority projects. As the system maps continue to be updated based on planning data, MIC will determine future water conservation projects, including additional metering needs and other system improvements.

- 2) *Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).*

Central Utah Water Conservancy District Prepare 60 Plan has three main focuses:



Protect what we have

- Repair and replacement of existing infrastructure
- Watershed and water source protection



Use it wisely

- Water conservation – efficient use of a precious resource



Provide for the future

- New water sources and development of new infrastructure

This project meets all three focuses by metering existing secondary water users, conserving 293 acre-feet of water, and reducing the amount of water taken from Jordanelle Reservoir and the Provo River system. The project will help provide water for

the future as it continues to implement secondary metering and continued water conservation.

E.1.6.2. Subcriterion No. F.2 – Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved).

At the completion of each year of the project, MIC will have water usage data from the meters installed. The data will be in hourly increments from April 15 to October 15. The data will also include a monthly consumption value. Water savings will not be fully known after just one irrigation year, so MIC will prepare a water savings comparison chart much like WBWCD did and will track the same 750 meters from this project every year for a series of years to document the changes.

MIC will be able to use historical main line meter data to compare usage from years prior to metering with years following metering. Comparing historical water use to use after full implementation of the metering project will more accurately depict what impact the installation of individual meters has on users and their entire system.

E.1.6.3. Subcriterion No. F.3 – Readiness to Proceed

Identify and provide a summary description of the major tasks necessary to complete the project.

Based on a contract lag time of one year, MIC plans to begin the project in September/October 2021. Project completion is expected in September 2023, which adheres to the two-year timeframe for Funding Group I projects.

Table 1 - Major Tasks and Milestones

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

MIC does not anticipate any permits based on the fact that secondary valves are currently placed in valve pits already located in the roads or park strips of residential subdivisions. Midway City will be involved and notified of metering project implications and timelines. Any concerns the City may have will be addressed prior to project construction. MIC will work with homeowners to minimize installation impacts and provide improved service connection.

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

None at this time.

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

No new policies or actions will be required in order to proceed with the proposed project.

Include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

Environmental costs associated with the project are based on previous metering projects of similar size.

E.1.7. Evaluation Criterion G – Nexus to Reclamation Project Activities (4 Points)

Is the proposed project connected to Reclamation project activities? If so, how? Please consider the following:

- *Does the applicant receive Reclamation project water?*
Yes, MIC receives water from Jordanelle Reservoir, which is a Reclamation project.
- *Is the project on Reclamation project lands or involving Reclamation facilities?*
No.
- *Is the project in the same basin as a Reclamation project or activity?*
Yes, the project is in the Provo River Basin.
- *Will the proposed work contribute water to a basin where a Reclamation project is located?*
Yes, the project will conserve water that can be left in Jordanelle Reservoir and the Provo River system for longer periods of time and contribute to the storage of Deer Creek Reservoir downstream, which is a Reclamation project.

Will the project benefit any tribe(s)?

No.

E.1.8. Evaluation Criterion H – Additional Non-Federal Funding (4 Points)

State the percentage of non-federal funding provided using the following calculation

$$\frac{528,500}{1,028,500} = 51\%$$

Project Budget

Funding Plan and Letters of Commitment

Describe how the non-Federal share of project costs will be obtained.

Identify the sources of the non-Federal cost-share contribution for the project, including:

- *Any monetary contribution by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments).*

MIC has committed \$79,275 from their cash reserve account that is required as they request a loan from the Utah Division of Water Resources (DWRe). They made application for a loan for \$449,225.

- *Any costs that will be contributed by the applicant.*

MIC is required to contribute 15 percent of the project cost when they receive a loan from DWRe. This above any grant funds received from Reclamation or any other granting agency. MIC will be coming with \$79,275 cash.

- *Any third-party in-kind costs (i.e., goods and services provided by a third party).*

There are no in-kind project costs included in this project.

- *Any cash requested or received from other non-Federal entities.*

N/A

- *Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied.*

As state above, MIC submitted a loan application DWRe for a Secondary Water Metering Loan, which is currently under review. MIC has been in communication with the Board of Water Resources, who funds more than 90 percent of submitted loan requests. MIC feels confident that they will receive the loan from DWRe. If funding is denied, MIC can seek funding on the open market.

In addition, identify whether the budget proposal includes any project costs that have been or may be incurred prior to award. For each cost, describe:

- *The project expenditure and amount.*

N/A

- *The date of cost incurrence.*

N/A

- *How the expenditure benefits the Project.*

N/A

Budget Proposal

Table 2 – Total Project Cost Table

Source	Amount
Costs to be reimbursed with the requested Federal funding	\$500,000
Costs to be paid by the applicant	\$528,500
Value of third-party contributions	\$0
Total Project Cost	\$1,028,500

Table 3 – Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	\$/Unit	Quantity		
Salaries and Wages				\$0
Fringe Benefits				\$0
Equipment				\$0
Supplies and Materials				\$0
Contractual /Construction				\$0
Meter Installation	\$500	750	EA	\$375,000
Meter Materials	\$800	750	EA	\$600,000
Meter Reading Hardware	\$10,000	1	LS	\$10,000
Meter Software and Computer	\$20,000	1	LS	\$20,000
Public Involvement Assistance	\$7,500	1	LS	\$7,500
Reporting	\$125	8	HR	\$1,000
Environmental Document Assistance	15,000	1	EA	\$15,000
Third-Party In-Kind Contributions				\$0
Other				\$0
Total Direct Costs				\$1,028,500
Indirect Costs				\$0
Type of rate	Percentage	\$base		\$0
Total Estimated Project Costs				\$1,028,500

Budget Narrative

Salaries and Wages

No MIC salaries or wages will be included. All services will be contracted. MIC's staff time will be over and above the cost of the project and will not be counted toward the project cost.

Fringe Benefits

Fringe benefits will not be necessary for this project.

Travel

Travel will not be necessary for this project.

Equipment

No equipment will be required to complete this project.

Materials and Supplies

No materials and supplies are needed for this project.

Contractual

To determine unit costs, which are included in the cost estimate for this project, MIC relied upon contract unit prices from similar projects recently completed. MIC will follow the State of Utah procurement process for procuring a contractor for this project. They will bid the construction portion of the project to several prequalified construction companies. The contractual costs shown are estimates for each of the components to furnish and install meters, reading hardware, and other items. Generally, the low bidder will be selected based on a determination of acceptable qualifications.

Third-Party In-Kind Contributions

No third-party in-kind contributions will be included.

Environmental and Regulatory Compliance Costs

The environmental impact for this project will be minimal in that all the metering will be within previously disturbed areas. \$15,000 is included in the project cost to assist Reclamation with the completion the environmental document.

Other Expenses

No other expenses are required for this project.

Indirect Costs

There will be no indirect costs for this project.

Total Costs

Table 4 – Total Costs

MIC Portion	Fed Portion	Total
\$528,500	\$500,000	\$1,028,500

Environmental and Cultural Resources Compliance

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

Impacts will be those associated with metering existing secondary water connection in streets and park strips. The proposed project improvements will take place entirely within the existing street and park strip right-of-way. In the past, similar projects have had minimal impacts and were approved as a Categorical Exclusion.

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?

MIC is not aware of any impacts.

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.

MIC is not aware of any impacts.

When was the water delivery system constructed?

MIC’s secondary water delivery system was constructed in twelve phases over multiple years. Planning and design were completed in 2001, and construction of the main distribution system was completed in 2005. A few minor improvements have been made by MIC, but since the system was completed in 2005, there haven’t been any major upgrades; just extensions and additions to the system as fields were converted to subdivisions. The most notable addition was that of the Valais Pump Station, which was constructed in 2014. MIC has plans to install another larger pump station at the Dutch Hollow Reservoir in the future.

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.

The project will install 750 secondary water meters.

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.

N/A

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

MIC is not aware of any sites.

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

No. The proposed project will have no negative impact on the socioeconomic resources in the project area. The proposed project would not require the relocation of any residences or businesses and is not anticipated to put a strain on the local workforce, businesses, or other resources.

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.

Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

MIC does not anticipate any permits based on the fact that secondary valves are currently placed in valve pits already located in the roads or park strips of residential subdivisions. Midway City will be involved and notified of metering project implications and timelines. Any concerns the City may have will be addressed prior to project construction. MIC will work with homeowners to minimize installation impacts and provide improved service connection.

Letters of Project Support

Include letters from interested stakeholders supporting the proposed project.

Letters of Support from the following entities are included in **Attachment C**:

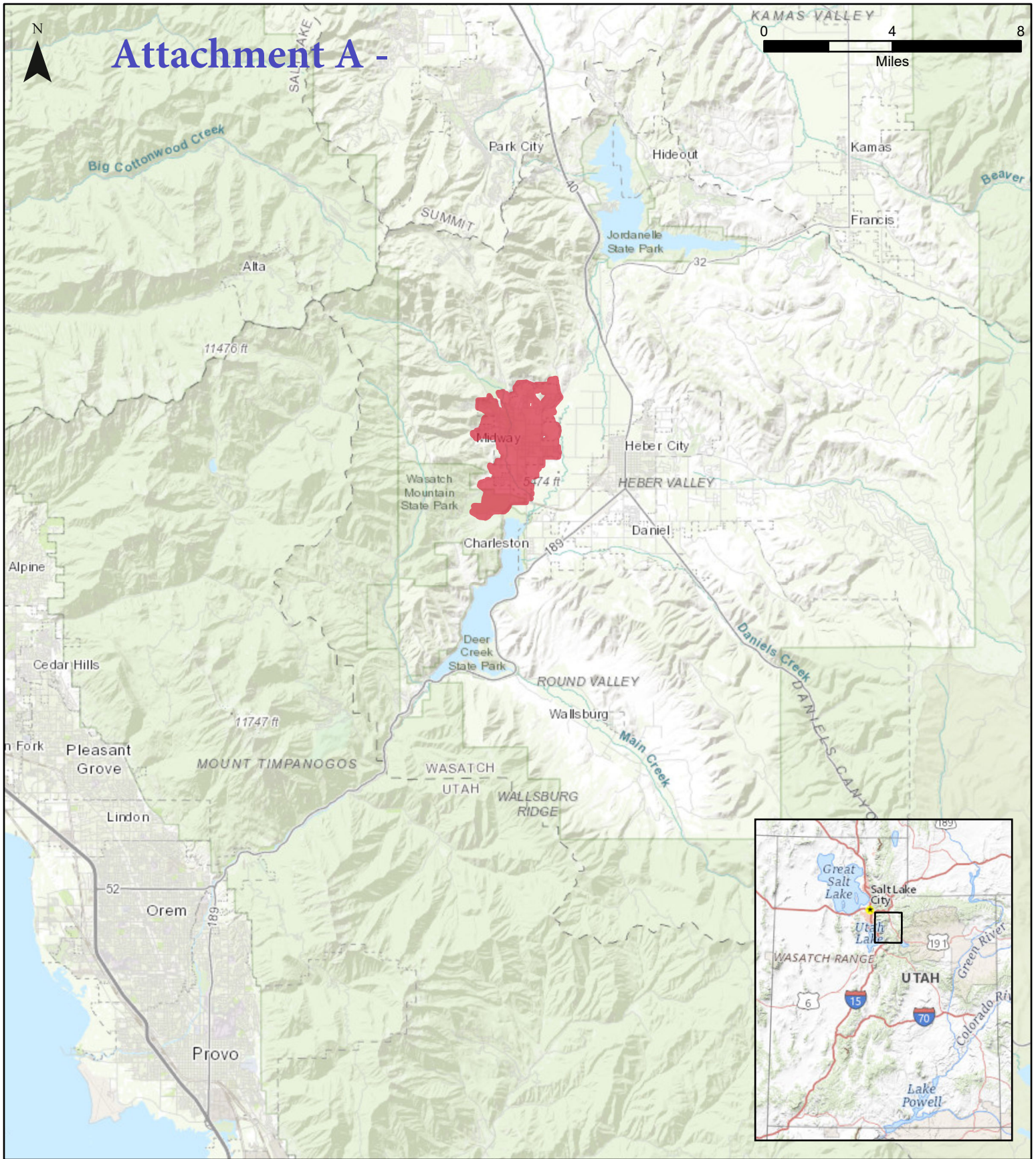
- Midway City Corporation
- Central Utah Water Conservancy District
- Jordanelle Special Service District

Official Resolution

Include an official resolution adopted by the applicant's board of directors or governing body. The official resolution may be submitted up to 30 days after the application deadline.

The Official Resolution for Midway Irrigation Company's Secondary Water Metering Project will be submitted within 30 days after the application deadline.

Attachment A -



Project Location Map

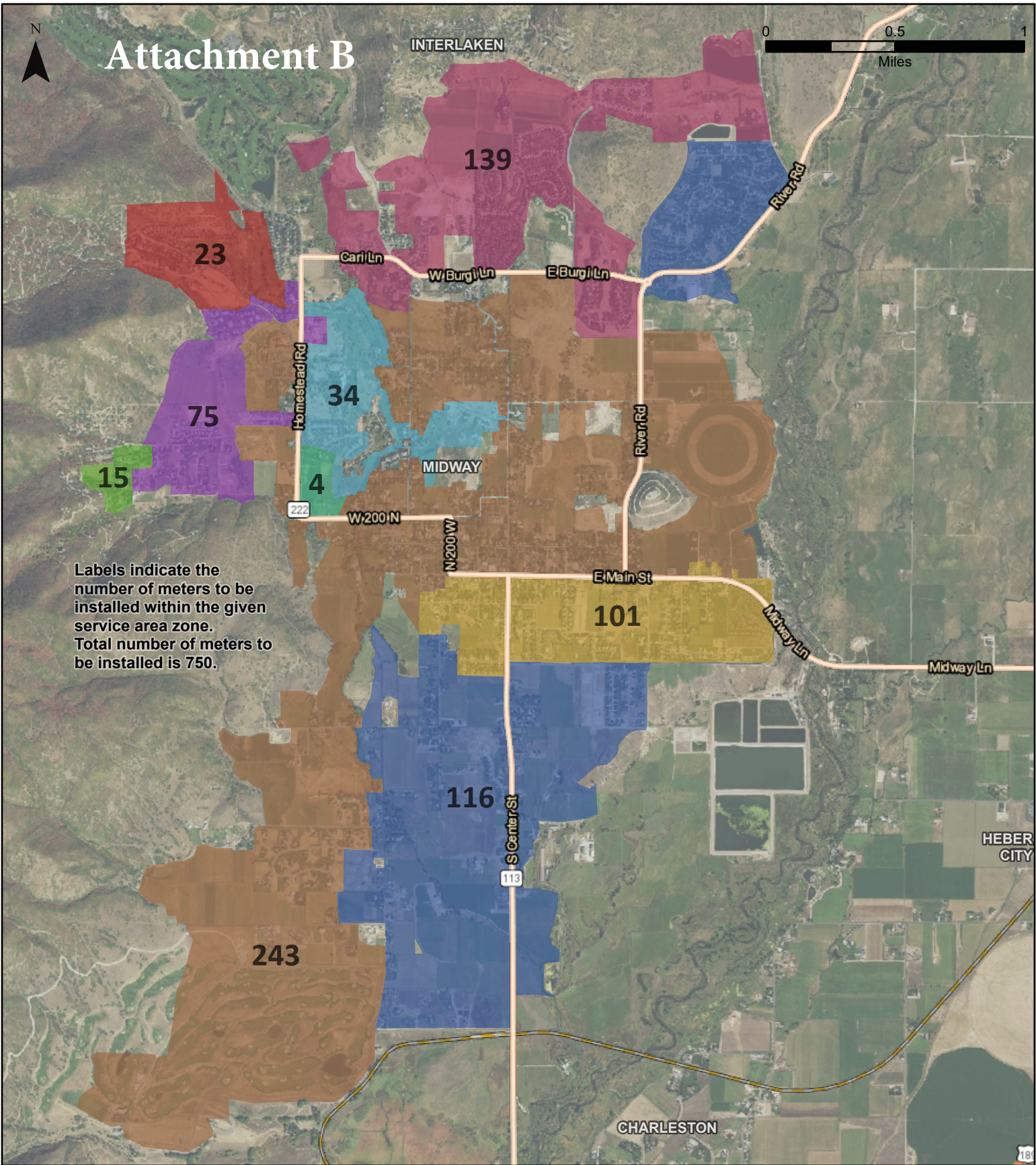
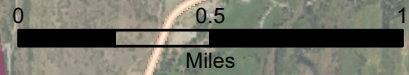
Secondary Water Metering Project
Midway Irrigation Company

September 2020

Midway Irrigation Company Service Area (111.4734970°W 40.5120981°N)

Attachment B

INTERLAKEN












Labels indicate the number of meters to be installed within the given service area zone. Total number of meters to be installed is 750.

Project Detail Map

Secondary Water Metering Project Midway Irrigation Company

September 2020

Service Area Zones

- | | |
|--|---|
|  Devils Hole, 15 |  Lower West Bench, 101 |
|  Epperson, 75 |  Middle Ditch, 139 |
|  Epperson pmp, 23 |  River Ditch, 116 |
|  HSGCpond, 34 |  Slew Ditch, 4 |
| |  Upper West Bench, 243 |

Midway City Corporation

Mayor: Celeste T. Johnson
City Council Members
Lisa Orme • Jeffery Drury
J.C. Simonsen • Steve Dougherty
Kevin Payne



75 North 100 West
P.O. Box 277
Midway, Utah 84049
Phone: 435-654-3223
Fax: 435-654-4120
midwaycityut.org

September 9, 2020

Steve Farrell, President
Midway Irrigation Company
PO BOX 404
Midway, UT 84049

Dear Steve,

Midway City is pleased to support your effort to develop a Secondary Water Metering Project under the Bureau of Reclamation's WaterSMART Water and Energy Efficiency Program. We appreciate the importance of improving the efficiency of your system and becoming more resilient to overuse in our water-short basin. We are also looking forward to being a stakeholder in the process of metering secondary water use. This type of system upgrade is important as it will permit all users to better understand their usage and limit unnecessary overwatering.

As you are very aware, Midway has acres of agricultural land. Additionally, Midway City is in one of the fastest growing counties in the country, Wasatch County. It is vitally important that we control, through monitoring, the amount of water used to ensure that farmland and residential properties will both be fairly treated.

We strongly support your grant application and appreciate the advancements it will make in water conservancy and efficiencies for Midway Irrigation Company and the Provo River Basin.

Sincerely,



Celeste Johnson
Midway City Mayor



**CENTRAL UTAH WATER
CONSERVANCY DISTRICT**

Al Mansell *Chair of the Board*
Shelley Brennan *Vice Chair of the Board*
Gene Shawcroft *General Manager / CEO*

G. Wayne Andersen
JR Bird
E James (Jim) Bradley
Shelley Brennan
Max Burdick
Kirk L Christensen

Board of Trustees

Steve Farrell
Steve Hanberg
Max Haslem
Nathan Ivie
Bill Lee
Al Mansell

Greg McPhie
Jim Riding
Jennifer Scott
Edwin Boyd Sunderland
Byron Woodland
Boyd Workman

Steve Farrell, President
Midway Irrigation Company
PO BOX 404
Midway, UT 84049

Dear Steve,

Central Utah Water Conservancy District is pleased to support your effort to develop a Secondary Water Metering Project under the Bureau of Reclamation's WaterSMART Water and Energy Efficiency Program. We appreciate the importance of improving the efficiency of your system and becoming more resilient to overuse in our water-short basin. We are also looking forward to being a stakeholder in the process of metering secondary water use. This type of system upgrade is important as it will permit all users to better understand their usage and limit unnecessary overwatering.

We have been pleased to work with Midway Irrigation Company with water agreements and in exchanging water rights to help with the Central Utah Project water supply. We hope this project is funded as secondary water metering is highly effective in encouraging wise-water-use efforts. The savings in water conservation could be up to 35%, would increase yields of direct flow water rights, would meet other needs such as natural flows of the Provo River, and would help Midway Irrigation Company's CUP water supply to stretch further.

We strongly support your grant application and appreciate the advancements it will make in water conservancy and efficiencies for Midway Irrigation Company and the Provo River Basin.

Sincerely,

Gene Shawcroft, P.E.
General Manager/CEO
Central Utah Water Conservancy District



September 9, 2020

Steve Farrell, President
Midway Irrigation Company
PO BOX 404
Midway, UT 84049

Dear Steve,

Jordanelle Special Service District is pleased to support your effort to develop a Secondary Water Metering Project under the Bureau of Reclamation's WaterSMART Water and Energy Efficiency Program. We appreciate your efforts of improving the efficiency of your system and becoming more resilient to overuse in our water-short basin. Jordanelle Special Service District and other Districts we operate have seen substantial reductions in water use in the areas since we have installed such metering. We are also looking forward to being a stakeholder in the process of metering secondary water use. This type of system upgrade is important as it will permit all users to better understand their usage and limit unnecessary overwatering.

As a neighboring entity that works with Midway irrigation with water delivery and conservation, we feel that the secondary meter project will benefit not only Midway Irrigation, but all water users within Wasatch County and the Provo River Basin.

We strongly support your grant application and appreciate the advancements it will make in water conservancy and efficiencies for Midway Irrigation Company and the Provo River Basin.

Sincerely,

A handwritten signature in blue ink, appearing to read "Max Covey", with a long, sweeping flourish extending to the right.

Max Covey
General Manager
Jordanelle Special Service District

OFFICIAL RESOLUTION
RESOLUTION NO. BOR-DO-21-F001

Midway Irrigation Company

WHEREAS, The **Midway Irrigation Company** must maintain, provide for, and service the Water System,

WHEREAS, The **Company** sees the need to construct the **Secondary Water Metering Project** to improve water and energy conservation and efficiency,

WHEREAS, The **Company** desires to obtain grant funding from the Bureau of Reclamation through the **WaterSMART: Water and Energy Efficiency Grant**.

NOW THEREFORE, BE IT RESOLVED that the **Board of Directors**, agrees and authorizes that:

1. The **President** of **Midway Irrigation Company** has the legal authority to enter into an agreement with Reclamation;
2. The **WaterSMART: Water and Energy Efficiency Grant** application prepared by **J-U-B Engineers, Inc.** has been reviewed by the **Board of Directors** and supports the application submitted;
3. The **Midway Irrigation Company** is capable of providing the amount of funding and/or in-kind contributions specified in the funding plan; and
4. If selected for a **WaterSMART: Water and Energy Efficiency Grant**, the **Company** will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

DATED: 9/15/2020



Steve Farrell, President

ATTEST:



Mike Kohler, Manager