

WaterSMART

Water and Energy Efficiency Grants for FY 2018

Funding Opportunity Announcement No. BOR-DO-18-F006

Funding Group I

Salem City Pressurized Irrigation Metering Project

Salem, Utah



Salem City (Applicant)

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Technical Proposal and Evaluation Criteria

Executive Summary

The executive summary should include:

- *The date, applicant name, city, county, and state*
- *A one paragraph project summary that specifies the work proposed, including how funds will be used to accomplish specific project activities and briefly identifies how the proposed project contributes to accomplishing the goals of this FOA*
- *State the length of time and estimated completion date for the proposed project*
- *Whether or not the project is located on a Federal facility*

Date: Application due date is May 10, 2018

Applicant: Salem City
Salem, Utah County, Utah

Project Title: Salem City Pressurized Irrigation Metering Project

Project Summary:

Salem City (City) is requesting funding to assist with the installation of flow measurement devices with automated metering infrastructure (AMI) for the businesses and homeowners on the Salem City Pressurized Irrigation (PI) System. By installing smart water meters with the AMI technology, the City will be able to monitor, on a real-time basis, the flows in the PI system, allowing the City to bill each connection for the actual amount of water used. Since the PI system has been installed, the measured water through the mainline flow meter indicates little or no water conservation by individual residents throughout the city due to the lack of accountability regarding individual water consumption. Similar smart metering installations in northern Utah have shown 30 to 40 percent water savings when individuals have a clear understanding of the amount of water they use. A study by Colorado State University in 2003 indicated flat-rate users expend, on average, approximately 39 percent more water than metered users. It is anticipated that this project will conserve 460 acre-feet of water annually and contribute to the improved water management of 1,500 acre-feet annually. In addition, the City will experience approximately \$87,000 in energy savings by eliminating the need for supplementary pumping. The City is confident these conservation numbers will be realized after metering their PI system.

Approximate Length: 27 months

Completion Date: December 2020

Federal Facility: The equalizing ponds for the Salem PI Metering Project are located on Federal land and the project utilizes Federal water.

Background Data

Applicant’s Water Supply

As applicable, describe the source of water supply, the water rights involved, current water uses (e.g., 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.

The City receives water for their PI system from the Strawberry High Line Canal, owned and operated by the Strawberry Water Users Association (SWUA), and Spanish Fork (SF) River as shown in Table 1. The majority of the delivered water is Strawberry Valley Project (SVP) water.

Table 1: Water Rights & Shares diverted into the Salem City PI System

Source	Shares	Volume (AF)	Type
BYU Well – Spanish Fork River Water (Contract)	N/A	550	SF River
Salem Canal (Salem City = 22% of SF River Flow)	450.7	924.8	SF River
Ballard Contract (SVP Water)	7.97	7.97	SWUA
Cornaby Contract (SVP Water)	78.88	78.88	SWUA
SVP Water owned by Salem City	129.59	129.59	SWUA
SVP Water (Water Dedication Agreements)	495.58	495.58	SWUA
TOTAL WATER RIGHTS:		2,186.82	
Canal Losses:		(364.55)	
TOTAL PI WATER SUPPLY:		1,822.27	

The PI system currently serves the lawns and gardens of residential homes and commercial businesses. The system has approximately 2,028 connections. While demand fluctuates year to year, on average, the annual water delivery is approximately 1,500 acre-feet (Figure 1). This requires the City to pump water from their two culinary wells to supplement the PI system during peak summer months. As demand increases over time, the PI water supply will continue to max out and additional strain will be placed on the culinary system as its water is diverted into the PI system.

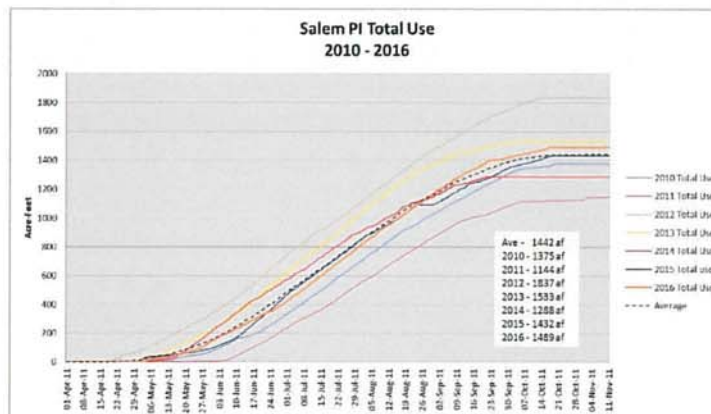


Figure 1: Salem City PI Water Delivery

Water Delivery System

Describe the applicant's water delivery system as appropriate. For agricultural systems, please include the miles of canals, miles of laterals, and existing irrigation improvements (e.g., type, miles, and acres). For municipal systems, please include the number of connections and/or number of water users served and any other relevant information describing the system.

The City's PI system comprises two equalization ponds, two pump stations to pressurize the upper zones, and pipelines ranging from 24 inches to 6 inches in diameter. The system serves approximately 2,028 connections through the distribution system shown in Figure 2. Beginning in 2016, the City requires all new construction to install smart meters on all PI connections.

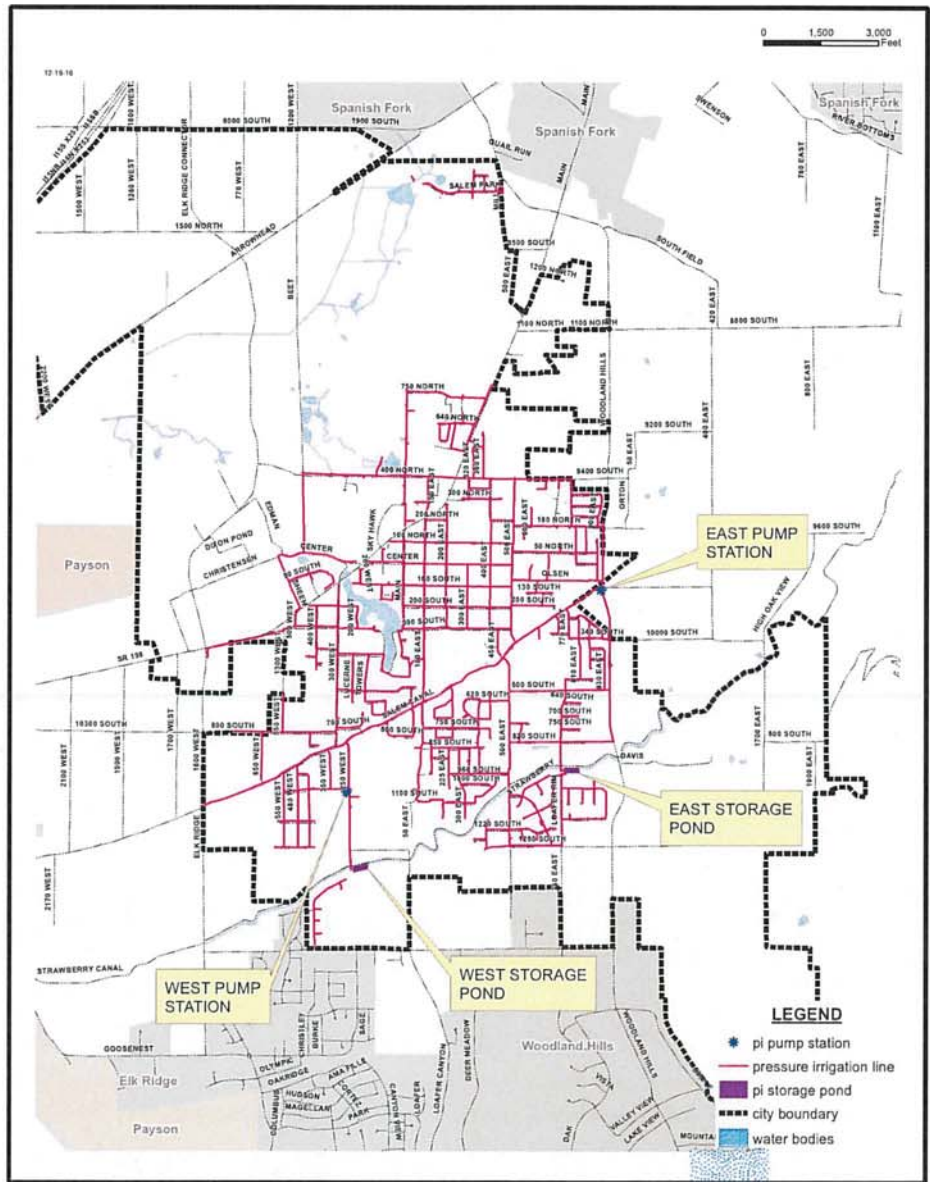


Figure 2: Salem City PI System

Hydropower or Energy Efficiency

If the application includes hydropower or energy efficiency elements, describe existing energy sources and current energy uses.

The City currently operates two pump stations with three electric pumps in each station to pressurize the upper zones of the PI system. In order to meet the PI system demands during the peak summer months, the City supplements the system with pumped water from the two city-owned culinary wells. The city wells are equipped with one 150 horsepower (hp) electric pump and one 250 hp electric pump. The 2016 pumping costs for the two culinary wells serving both the culinary and PI systems were \$776,640. The conserved 460 acre-feet of PI water resulting from the proposed project will eliminate the need to supplement the PI system with pumped culinary water from wells. This results in an annual energy savings of \$87,088 based on 2016 costs. This cost savings will be realized each year until the growth of the City requires supplementary culinary water once again.

Prior Work 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 project(s).

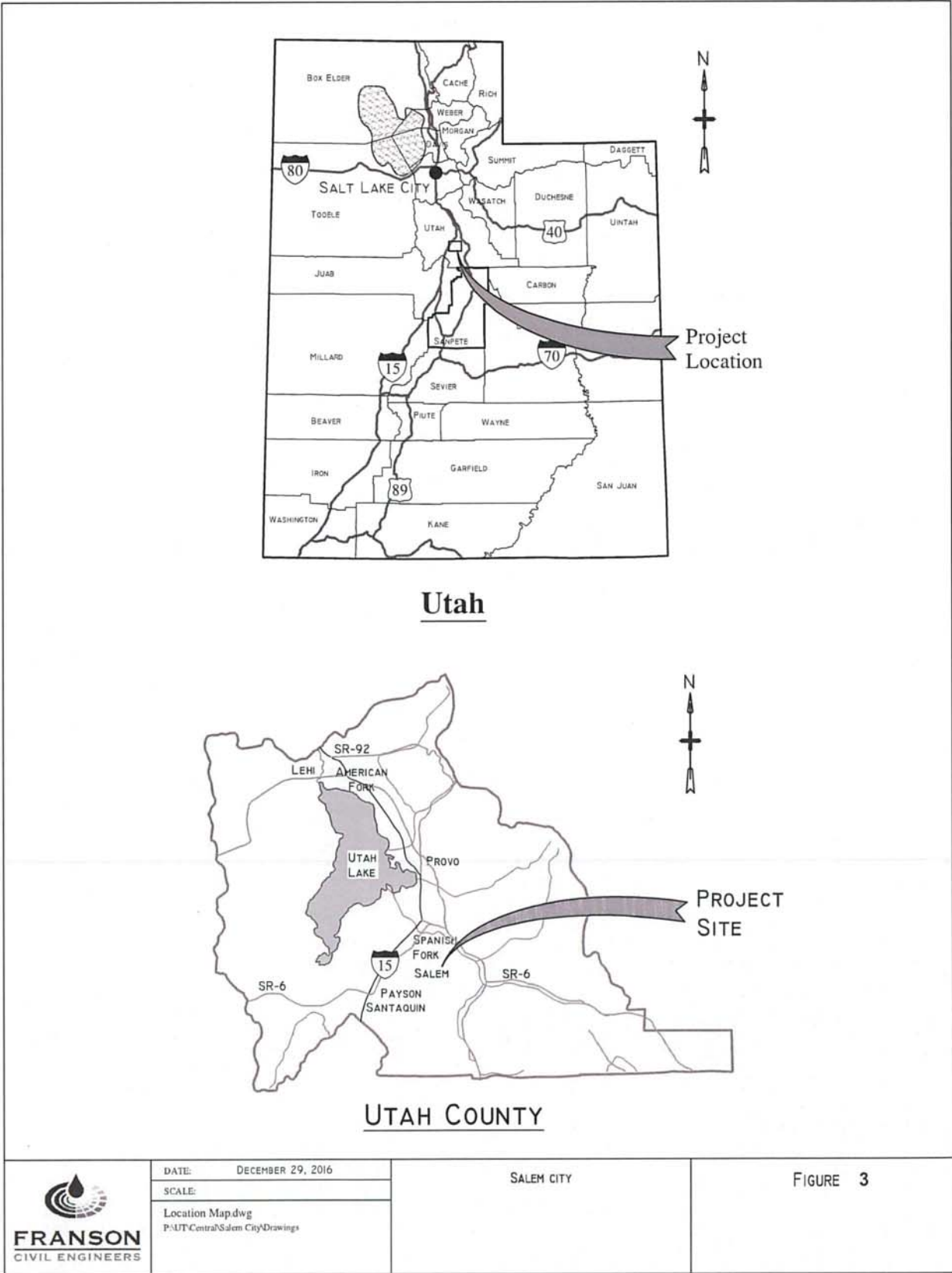
There have been no directly working relationships between the City and Reclamation. However, the majority of the City's PI water is SVP water. The SVP is a Reclamation project with water supplied from trans-basin deliveries by the Central Utah Water Conservancy District (CUWCD) and the Central Utah Project (CUP) into the Strawberry River. The CUP is another Reclamation project in Utah County. Conserving water for the City will directly result in conserving water for Reclamation.

Project Location

Provide specific information on the proposed project location or project area including a map showing the 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}. For larger project areas, please provide location information in one of the following formats:

1. Shapefile (.shp)
2. KMZ/KML (.kmz or .kml) aka Google Earth File, not an exported Google Earth map
3. AutoCAD (.dwg)
4. PDF map (.pdf)

The project is located in Salem, Utah County, Utah, as shown in Figure 3. The project latitude is 40°3'16"N and the longitude is 111°40'24"W.



Technical Project Description

The technical project description should describe the work in detail, including specific activities that will be accomplished. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal.

If a grant from Reclamation is awarded, the City will utilize existing revenues and reserve funds to complete the metering project. Upon award, an engineering design report will be prepared to evaluate the best flow meter and AMI equipment options. All necessary permits will be obtained during this process. The City is tentatively looking at iPearl magmeters with the iTron 100W communication module, but with the continually-changing technological advancements in metering, an evaluation of the best possible equipment will be completed during the design phase of the project. An environmental and cultural review will be conducted by a registered environmental firm. Once environmental and cultural clearance is obtained, the engineering design and construction documents will be prepared. It is anticipated that all permitting, environmental and cultural clearances, and engineering design will be completed in early 2019 such that construction can begin in the early spring of 2019 and reach completion in December 2020. Installation of the flow meters must occur during the early spring and late fall in order to avoid impacting the irrigation season.

The proposed project will involve installing a smart meter on each existing city connection to the PI system. When the City constructed the PI system initially, the connection configuration was designed to accommodate a smart meter in the existing City-provided underground irrigation box. Figure 4 shows a typical meter installation. The design of the AMI equipment and the AMI-GIS link will be done by a professional engineering firm to ensure the system meets the needs and requirements of the City. All design drawings will be stamped by a professional engineer and be available for review by Reclamation upon request.

The City plans to begin charging users based on actual water use, as measured by the installed meters, using an incentive-based pricing water rate structure (see Appendix G). The new rate structure will be designed to have the heaviest users paying incrementally more for their water. The City anticipates providing a monthly secondary water use report for individual users notifying them of their water usage and how it compares to their estimated need. The monthly report will be similar to the example report provided by Weber Basin Water Conservancy District (WBWCD) shown in Appendix F.

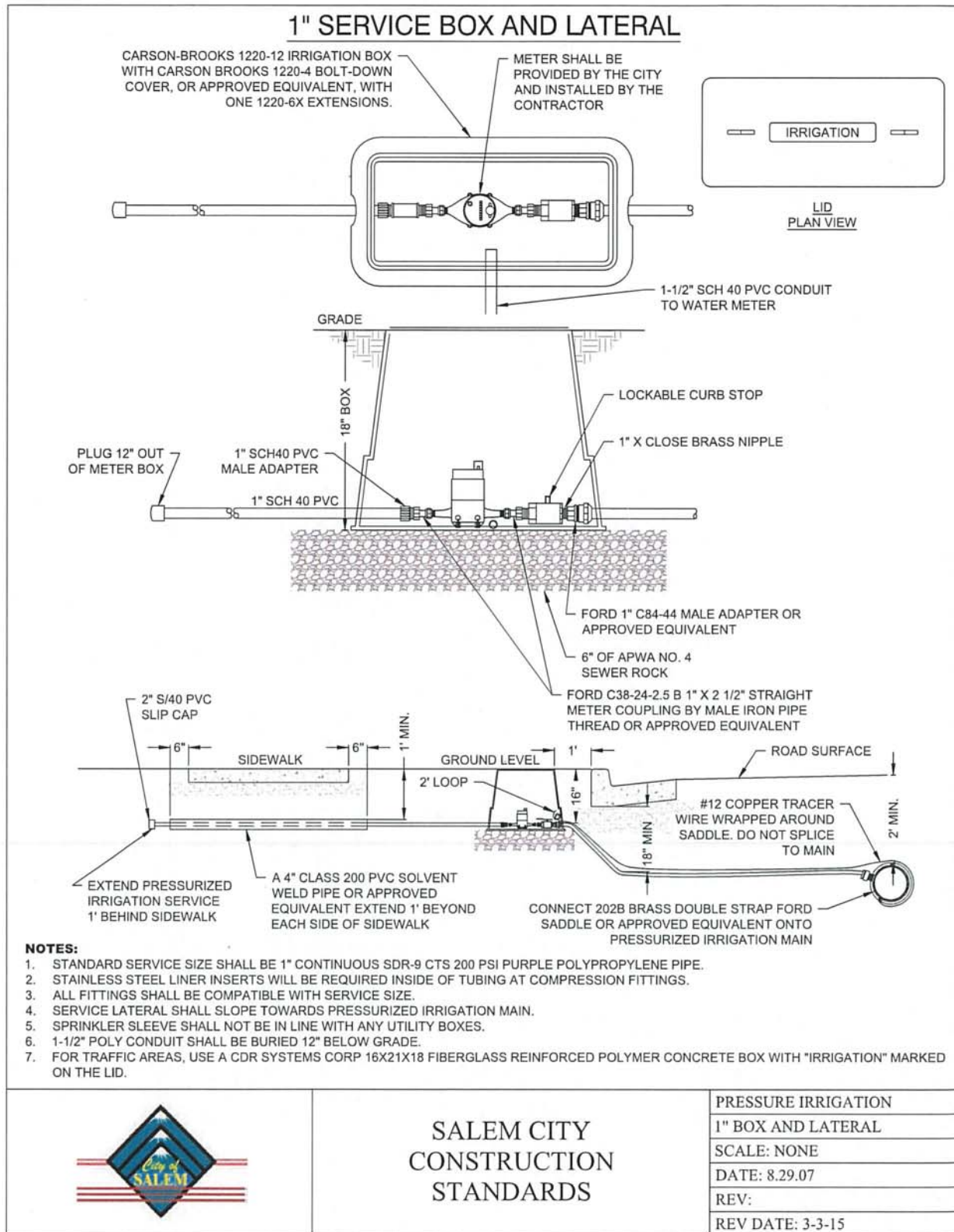


Figure 4: Typical Meter Installation

Evaluation Criteria

Evaluation Criterion A: Quantifiable Water Savings

Up to 30 points may be awarded for this criterion. This criterion prioritizes projects that will conserve water and improve water use efficiency by modernizing existing infrastructure. Points will be allocated based on the quantifiable water savings expected as a result of the project. Points will be allocated to give greater consideration to projects that are expected to result in more significant water savings. All applicants should be sure to address the following:

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.

It is anticipated that the City will conserve 460 acre-feet annually by metering individual users, charging users based on usage, and providing monthly comparisons of actual use and estimated need. Water savings were calculated by estimating the total PI water need throughout the City and subtracting it from actual water delivered by the City. The estimated water need was calculated by determining total landscaped area and multiplying it by 24.6 inches. The 24.6 inches estimate comes from a 2002 Utah State University publication titled, "Turfgrass Water Use in Utah," and is a realistic initial target for the City to achieve. Table 2 shows the calculations using percent landscaped area per lot to determine total landscaped area for each lot size.

Table 2: Potential Water Conservation Amount

Lot Size	Lot Area (ft ²)	# of Lots	% Landscaped	Landscaped Area (ft ²)	Water Use per Lot (gal)	Water Use per Lot (AF)	Total Water Use (AF)
0-0.25	10,890	790	50%	5,445	83,494	0.256	202
0.25-0.33	14,520	240	55%	7,986	122,457	0.376	90
0.33-0.5	21,780	600	60%	13,068	200,385	0.615	369
0.5-0.75	32,670	191	65%	21,236	325,625	0.999	191
0.75-1	43,560	40	65%	28,314	434,167	1.333	53
1-1.33	57,935	25	65%	37,658	577,442	1.772	44
1.33-1.5	65,340	7	65%	42,471	651,250	1.999	14
1.5-2	87,120	12	65%	56,628	868,334	2.665	32
> 2	108,900	10	65%	70,785	1,085,417	3.331	33
Total (acre-feet)							1,029
Salem City 2016 Water Delivery (acre-feet)							1,489
Savings (acre-feet)							460
% Savings							31%

Two cities/water districts in northern Utah have installed flow meters on their secondary water systems: WBWCD and Payson City. WBWCD provided the City with a summary sheet of their

experiences and water savings from installing secondary meters on their connections. WBWCD has experienced a 30 to 40 percent savings due to their metering program. In addition, Payson City has conducted preliminary studies on anticipated water savings due to installing meters on a selected sample of connections throughout their city. Their studies indicated that they could expect a 40 to 50 percent savings due to metering. Based on these experiences, the estimated 31 percent water savings to be experienced in Salem City due to metering appears to be realistic, if not conservative.

Current Water Losses

Describe current losses: Please 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)?

The conserved water is currently being delivered to users on the City's PI system who are overwatering their landscape and exceeding their estimated water need. This is due to a lack of knowledge of their actual water consumption and a lack of understanding of their landscape's estimated water need. In addition, because customers are not charged based on usage, there is little incentive for users to adjust their watering patterns.

Support/Documentation of Water Savings

Describe the support/documentation of estimated water savings: Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Note: projects that do not provide sufficient supporting detail/calculations may not receive credit under this section. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal.

It is anticipated that once meters are installed on all City PI connections and users are billed according to their actual usage, users will modify their watering patterns to match the estimated water need for their landscape. The total estimated water need, based on a publication by Utah State University in 2002 titled, "Turfgrass Water Use in Utah," was compared with the current total water usage among City users. The difference of 460 acre-feet, or 31 percent, was determined as a conservative estimate of the water savings. This number appears realistic based on similar projects and studies completed by WBWCD and Payson City, both located in northern Utah as well. Calculations are shown in Table 2 above.

The conserved water will eliminate the need for the City to supplement the PI system with culinary water pumped from the City's culinary wells as well as reduce the amount of SVP water needed throughout the year. The 460 acre-feet of conserved water will allow for an additional 750 connections to the PI system based on the average lot size in the City. According to calculations based on the Utah Governor's Office of Management and Budget Municipal Populations Projections, the conserved water from this metering project should ensure that the City will be able to meet its PI system demands with its current PI-allocated water until 2027. At that point the City will need to begin pumping culinary water to supplement the PI system again or call on their full SVP water supply.

For the interim period of time between the completion of the metering project and the point when the population growth of the City requires total water deliveries beyond their SVP allocation, the conserved water will not be diverted by the City. It will be left in the CUP system as instream flows, potentially assisting in the recovery of the endangered June Sucker.

In addition to the proposed project, the City currently has a program offering smart irrigation controllers to homeowners. This program will continue as the metering project progresses. It is anticipated that homeowners will see the value in installing a smart irrigation controller to help conserve water and decrease their overall bill.

Project Types

Please address the following questions according to the type of infrastructure improvement you are proposing for funding.

(1) **Municipal Metering:** *Municipal metering projects can provide water savings when individual user meters are installed where none exist to allow for unit or tiered pricing, when existing individual user meters are replaced with advanced metering infrastructure (AMI) meters, and when new meters are installed within a distribution system to assist with leakage reduction. To receive credit for water savings for a municipal metering project, an applicant must provide a detailed description of the method used to estimate savings, including references to documented savings from similar previously implemented projects. Applicants proposing municipal metering projects should address the following:*

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.*

Actual realized water usage from WBWCD was used to calculate the Salem City's potential usage with metered connections. The inches per landscaped acre water use experienced by WBWCD in Farmington, Utah, was applied to the known number of Salem City lots and lot sizes. This figure was also referenced in the 2002 Utah State University publication described above. Calculations to determine estimated water needs compared to current actual water use are shown in Table 2. The difference between the estimated need (potential usage with metered connections) and current actual water use was determined as the water savings expected from the implementation of this project.

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

The City currently has mainline meters installed on their PI system. Without metering the end user, distribution system losses cannot be determined. The potential for reductions in water use are expected to be similar to the water savings realized by WBWCD, between 30 and 40 percent, after the installation of meters on each connection. This was confirmed by determining the estimated water need for each landscape size and subtracting it from the actual water use which indicated a 460-acre-foot water savings, equivalent to 31 percent water savings for the City.

c. *For installing individual water user meters, 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.

Payson City, a neighboring city to Salem, installed 25 residential secondary water meters randomly throughout their PI system to evaluate customer usage. Data was collected for water years 2009 to 2012. The sample test selection consisted of an average lot size of 0.33 acres with an average landscaped area of 0.2 acres (irrigable acreage). According to the Utah State University Extension Office, as stated in the previously-mentioned publication, the estimated water need for residential landscaping and irrigation in the Payson City area is 24.6 inches annually. The data collected from this case study indicated that nearly 50 percent of the residents metered used more than the recommended 24.6 inches of water, with the highest user applying 167.12 inches (85 percent more than recommended).

In addition, WBWCD collected data on their system after installing secondary water meters and indicated that they experienced water savings between 30 and 40 percent.

Salem City's PI delivery experience indicates similar water use patterns to Payson City and water savings calculations based on the estimated need of 24.6 inches results in an estimated 31 percent water savings due to metering. Both are realistic in comparison with the studies conducted in the region by WBWCD and Payson City. Calculations are shown in Table 2.

- d. If installing distribution main meters will result in conserved water, please provide support for this determination (including, but not limited to leakage studies, previous leakage reduction projects, etc.). Please provide details underlying any assumptions being made in support of water savings estimates (e.g., how leakage will be reduced once identified with improved meter data).*

The City currently has mainline meters installed on their PI system such that this will not be part of the proposed project. However, the ability to corroborate mainline meter readings with end user meter readings will allow the City to identify potential areas of leakage within the distribution system. This will improve the overall system efficiency and management to maximize water savings. In addition, it will allow the City to concentrate their maintenance crews on specific areas of the system to search for possible problems or issues.

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

It is anticipated that Sensus iPearl magnetic meters capable of 30-minute interval readings will be installed on most of the City connections. Large connections will use the Badger E-series magnetic meters. All meters will utilize the iTron 100W communication module to allow AMI connectivity. The City is anticipating installing 1,821 meters for the 1-inch connections, 72 meters for the 1-1/2-inch connections, and 22 meters for the 2-inch connections as part of the proposed project.

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

Actual water savings will be calculated by comparing historic mainline meter readings with post-project mainline meter readings. The difference will be the water savings realized by the project. In

addition, the City will be able to track individual water savings by comparing monthly water use over time with the initial reading for each individual user.

Evaluation Criterion B: Water Supply Reliability

Up to 18 points may be awarded under this criterion. This criterion prioritizes projects that address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflicts in the region.

Please address how the project will increase water supply reliability. Proposals that will address more significant water supply shortfalls benefitting multiple sectors and multiple water users, will be prioritized. General water supply reliability benefits (e.g., proposals that will increase resiliency to drought) will also be considered. Please provide sufficient explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:

- *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?*
 - *What is the significance of the collaboration/support?*
 - *Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?*

The proposed project requires collaboration among the Mt. Nebo Water Agency, Spanish Fork City, CUWCD, SWUA, and the Strawberry High Line Canal Company. The latter three entities are all directly tied to Reclamation through various projects, most associated with the CUP. The project has the support of all involved entities listed. In addition, the City is receiving technical support and direction from Payson City who is implementing a similar WaterSMART project and WBWCD who has also implemented a similar program. WBWCD has been instrumental in meeting with Salem City to educate them on information and lessons learned from their metering program. The influence and support of all listed entities has been crucial to the progress of achieving the goal of metering the City system. It is anticipated that by making usage data available to residents, individuals will be encouraged to conserve water and enhance their on-site efficiency.

- *Will the project make water available to address a specific water reliability concern? Please address:*
 - *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.*
 - *Describe where the conserved water will go/how it will be used. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)? Will it be left in the river system?*
 - *Describe how the project will address the water reliability concern.*
 - *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*
 - *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

- Describe the roles of any partners in the process. Please attach any relevant supporting documents.
- Indicate the quantity of conserved water that will be used for the intended purpose.

The City's water reliability is a concern largely due to increased demand. The 2010 census indicated that the City had a population of 6,423; current estimates indicate the population is now approximately 7,500. The 2060 population projection is 45,200, a growth rate similar to those expected in all the neighboring cities in the area. The associated demand with this growth dramatically reduces the reliability of the City's water supply and is likely to lead to a water crisis or conflicts among local water entities.

To prevent future crises or conflicts, the City participated in a Reclamation-sponsored Basin Water Supply Study commissioned by the Mt. Nebo Water Agency, of which, the City is a founding member. One of the results of this study is a Capital Improvement Plan which will be shared with local cities. The City is taking a proactive approach to planning for the future with the proposed metering project which will conserve water and extend their existing water supply as far as is practical.

- Will the project benefit Indian tribes?

Not applicable.

- Will the project benefit rural or economically disadvantaged communities?

Not applicable.

- 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)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project.

The conserved water will remain in the natural river systems controlled by CUWCD who will dictate which specific river system (Duchesne, Spanish Fork, or Provo) the water will be directed to. All three systems are associated with Reclamation endangered species recovery programs. The conserved water will benefit local endangered fish species and improve the overall fish habitat and ecosystem.

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

Not applicable.

Evaluation Criterion C: Implementing Hydropower

Up to 18 points may be awarded for this criterion. This criterion prioritizes projects that will install new hydropower capacity in order to utilize our natural resources to ensure energy is available to meet our security and economic needs.

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. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

Not applicable.

Describe the amount of energy generated. For projects that implement hydropower systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

Not applicable.

Describe any other benefits of the hydropower project. Please describe and provide sufficient detail on any additional benefits expected to result from the hydropower project, including:

- *Any expected reduction in the use of energy currently supplied through a Reclamation project*
- *Anticipated benefits to other sectors/entities*
- *Expected water needs, if any, of the system*

Not applicable.

Evaluation Criterion D: Complementing Future On-Farm Irrigation Improvements

Up to 10 points may be awarded for projects that describe in detail how they will complement on-farm irrigation improvements eligible for NRCS financial or technical assistance.

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

- *Describe any planned or ongoing projects by farmers/ranchers that receive water from the applicant to improve on-farm efficiencies.*
 - *Provide a detailed description of the on-farm efficiency improvements.*
 - *Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?*
 - *If available, provide documentation that the on-farm projects are eligible for NRCS assistance, that such assistance has or will be requested, and the number or percentage of farms that plan to participate in available NRCS programs.*
 - *Applicants should provide letters of intent from farmers/ranchers in the affected project areas.*

Not applicable.

- Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.
 - Will the proposed WaterSMART project directly facilitate the on-farm improvement? If so, how? For example, installation of a pressurized pipe through WaterSMART can help support efficient on-farm irrigation practices, such as drip-irrigation.

OR

- Will the proposed WaterSMART project complement the on-farm project by maximizing efficiency in the area? If so, how?

Not applicable.

- Describe the on-farm water conservation or water use efficiency benefits that would result from the on-farm component of this project.
 - Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.

Not applicable.

Evaluation Criterion E: Department of the Interior Priorities

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

1. *Creating a conservation stewardship legacy second only to Teddy Roosevelt*
 - a. *Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment;*
 - b. *Examine land use planning processes and land use designations that govern public use and access;*
 - c. *Revise and streamline the environmental and regulatory review process while maintaining environmental standards.*
 - d. *Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity;*
 - e. *Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands;*
 - f. *Identify and implement initiatives to expand across to DOI lands for hunting and fishing;*
 - g. *Shift the balance towards providing greater public access to public lands over restrictions to access.*

As shown through multiple reports, studies, and the emphasis of the WaterSMART program, metering is critical in striving to conserve water, improve water management, and increase water use

efficiency. As such, science has proven it to be a best practice among all types of water systems. This project directly meets the DOI's priority to utilize science to identify best practices to manage water resources and adapt to changes in the environment. The installation of meters will greatly improve Salem City's management of their water resources and allow them to adapt to the environment and population growth moving into the future.

2. *Utilizing our natural resources*

- a. *Ensure American Energy is available to meet our security and economic needs;*
- b. *Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications;*
- c. *Refocus timber programs to embrace the entire 'healthy forests' lifecycle;*
- d. *Manage competition for grazing resources.*

Not applicable.

3. *Restoring trust with local communities*

- a. *Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;*
- b. *Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.*

Salem and its neighbors have had a large amount of exposure to Reclamation projects via the CUP. While the results have been mostly positive to those in the local communities, any improvements to water systems in the area only serves to demonstrate that Reclamation cares about local water resources and expand the lines of communication to Salem City officials and employees while solidifying the existing relationships with CUWCD and SWUA.

4. *Striking a regulatory balance*

- a. *Reduce the administrative and regulatory burden imposed on U.S. industry and the public;*
- b. *Ensure that Endangered Species Act decisions are based on strong science and thorough analysis.*

Not applicable.

5. *Modernizing our infrastructure*

- a. *Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure;*
- b. *Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;*
- c. *Prioritize DOI infrastructure needs to highlight:*
 1. *Construction of infrastructure;*
 2. *Cyclical maintenance;*
 3. *Deferred maintenance.*

The addition of meters to the existing PI system will modernize the system as a whole and utilize the best advances in technology by installing smart meters that will connect to an AMI system. This project aids the DOI in modernizing the infrastructure of the United States by improving this system which will serve as an example to others of how other systems can also improve.

Evaluation Criterion F: Implementation and Results

Up to 6 points may be awarded for these subcriteria.

Subcriterion No. F.1 – Project Planning

Points may be awarded for proposals with planning efforts that provide support for the proposed project.

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.

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, Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.*

Salem City has an approved Water Conservation Plan dated December 2014. In association with this project, one of the goals of the City is to improve irrigation practices and implement water-efficient landscapes that will enhance the beauty of the City. Encouragement and guidance listed in the conservation plan includes the following:

- Water landscape only as much as required by the type of landscape, and the specific weather patterns of your area, including cutting back on watering times in the spring and fall. We encourage our customers to utilize the weekly lawn watering guide located at www.conservewater.utah.gov.
- Group plants in terms of water need, and zone sprinkler systems accordingly.
- Encourage customers to alter parking strips by allowing more water-wise plantings.
- Do not water on hot, sunny, and/or windy days. You may actually end up doing more harm than good to your landscape, as well as wasting a significant amount of water.
- Sweep sidewalks and driveways instead of using the hose to clean them off.
- Wash your car from a bucket of soapy (biodegradable) water and rinse while parked on or near the grass or landscape so that all the water running off goes to beneficial use instead of running down the gutter to waste.
- Check for and repair leaks in all pipes, hoses, faucets, couplings, valves, etc. Verify there are no leaks by turning everything off and checking your water meter to see if it is still running. Some underground leaks may not be visible due to draining off into storm drains, ditches, or traveling outside your property.

- Use mulch around trees and shrubs, as well as in your garden to retain as much moisture as possible. Areas with drip systems will use much less water, particularly during hot, dry and windy conditions.
- Keep your lawn well-trimmed and all other landscaped areas free of weeds to reduce overall water needs of your yard.

In addition to these individual measures that can be taken, the plan also lists metering the PI system as a city-wide measure that, if taken, will greatly add to the conservation efforts of the City as a whole.

(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).

The proposed metering project will provide Salem City the ability to extend its water supply an additional 10 years based on the projected growth of the City. With the limited supply of available water in southern Utah County, this time extension will provide the Mt. Nebo Water Agency and local cities with the time necessary to plan for the additional required infrastructure to meet future demands in the south end of Utah County. In addition, this project is a direct solution to water conservation efforts as listed in the City’s water conservation plan.

Subcriterion No. F.2 – Performance Measures

Points may be awarded based on the description and development of performance measures to quantify actual project benefits upon completion of the project.

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).

The City will compare post-project measurements with historic records of water deliveries and power usage associated with the supplemental pumping. The historic records include mainline meter readings at the head of the PI system as well as flow meter readings and electric power usage at the culinary wells used to supplement the PI system. The same meters will be used to record post-project usage for comparison to historic records.

Evaluation Criterion G: Nexus to Reclamation Project Activities

Up to 4 points may be awarded if the proposed project is in a basin with connections to Reclamation project activities. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.

- *Is the proposed project connected to Reclamation project activities?*
 - *Does the applicant receive Reclamation project water?*
 - *Is the project on Reclamation project lands or involving Reclamation facilities?*
 - *Is the project in the same basin as a Reclamation project or activity?*
 - *Will the proposed work contribute water to a basin where a Reclamation project is located?*

The City receives Reclamation project water from the Strawberry High Line Canal, part of the SVP. The water to be metered by the implementation of this project is Reclamation water. In addition, the project is located in the same basin as a portion of the CUP, a large project sponsored by Reclamation. Conserved water will remain as instream flows within the same basin as the Reclamation CUP.

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

Not applicable.

Evaluation Criterion H: Additional Non-Federal Funding

Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided using the following calculation:

$$\frac{\text{Non-Federal Funding}}{\text{Total Project Cost}} = \frac{\$ 2,132,600}{\$ 2,432,600} = 87.7\%$$

Project Budget

Funding Plan and Letters of Commitment

Describe how the non-Federal share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability.

Project funding provided by a source other than the applicant shall be supported with letters of commitment from these additional sources. Letters of commitment shall identify the following elements:

- *The amount of funding commitment*
- *The date the funds will be available to the applicant*
- *Any time constraints on the availability of funds*
- *Any other contingencies associated with the funding commitment*

Commitment letters from third party funding sources should be submitted with your application. If commitment letters are not available at the time of the application submission, please provide a timeline for submission of all commitment letters. Cost-share funding from sources outside the applicant's organization (e.g., loans or State grants), should be secured and available to the applicant prior to award.

Reclamation will not make funds available for an award under this FOA until the recipient has secured non-Federal cost-share. Reclamation will execute a financial assistance agreement once non-Federal funding has been secured or Reclamation determines that there is sufficient evidence

and likelihood that non-Federal funds will be available to the applicant subsequent to executing the agreement.

The funding plan must include all Project costs, as follows:

- 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 City will provide monetary funding from existing City revenues and reserve funds for the construction portion of the project.

- Describe any costs incurred before the anticipated Project start date that you seek to include as project costs. For each cost, identify:
 - The project expenditure and amount
 - The date of cost incurrence
 - How the expenditure benefits the Project
 - Provide the identity and amount of funding to be provided by funding partners

The City will not have any project expenses prior to the project start date.

- Describe any funding requested or received from other Federal partners.

No funding has been requested from other Federal agencies.

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

If Reclamation funding is not approved, the project will need to be re-evaluated based on existing budget constraints and may not be implemented for several years until adequate funds are available.

Please include the following chart to summarize all funding sources. Denote in-kind contributions with an asterisk (*).

Table 3: Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. Salem City	\$2,132,600
Non-Federal Subtotal	\$2,132,600
Other Federal Entities	
1. N/A	\$0
Other Federal Subtotal	\$0
REQUESTED RECLAMATION FUNDING	\$300,000

Budget Proposal

The budget proposal shall include detailed information on the categories listed below and must clearly identify **all** Project costs, including those that will be contributed as non-Federal cost share. Unit costs must be provided for all budget items including the cost of work to be provided by contractors. The budget proposal should also include any in-kind contributions or donations of goods and services that will be provided to complete the project. It is strongly advised that applicants use the budget proposal format shown below or a similar format that provides this information. If selected for award, successful applicants must submit detailed supporting documentation for all budgeted costs.

Table 4: Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/Unit	Quantity		
Legal Services	\$200/hr	120	Hours	\$24,000
Environmental Services	See Appendix C			\$40,000
Engineering Services	See Appendix D			\$63,500
Construction Management	See Appendix D			\$245,600
Construction Contract	See Appendix E			\$2,039,500
Reclamation Reporting	\$100/hr	200	Hours	\$20,000
TOTAL ESTIMATED PROJECT COSTS				\$2,432,600

Budget Narrative

Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. If in-kind contributions or donations of goods and services are included in the budget proposal, the narrative should identify the source(s) and describe how the value of the goods and services was determined. The types of information to describe in the narrative include, but are not limited to, those listed in the following subsections. Costs, including the valuation of in-kind contributions and donations, must comply with the applicable cost principles contained in 2 CFR Part §200, available at the Electronic Code of Federal Regulations (www.ecfr.gov).

Salem City employees will not earn salary, wages, fringe benefits, or reimbursements from the Federal funding obtained to implement this project. All funding secured from Reclamation will be used to pay contractual agreements to implement the project including the construction contract and fees for engineering services, environmental services, and cultural compliance.

Contractual

Identify all work that will be accomplished by subrecipients, consultants, or contractors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. Identify how the budgeted costs for sub-recipients, consultants, or contractors were determined to be fair and reasonable.

All funding for the project will be used to pay consultants, construction contractors, and subcontractors. These include all fees associated with engineering, environmental, and construction management services. Detailed tasks to be completed, labor hours, rates, supplies, and materials for each contractual task are outlined in the appendices as follows:

- Appendix C – Probable Cost for Environmental Services
- Appendix D – Probable Cost for Engineering Services
- Appendix E – Probable Cost for Construction Services

Environmental and Regulatory Compliance Costs

Applicants must include a line item in their budget to cover environmental compliance costs. "Environmental compliance costs" refer to costs incurred by Reclamation and the recipient in complying with environmental regulations applicable to an award under this FOA, including costs associated with any required documentation of environmental compliance, analyses, permits, or approvals. Applicable Federal environmental laws could include National Environmental Policy Act (NEPA), Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Clean Water Act (CWA), and other regulations depending on the project. Such costs may include, but are not limited to:

- *The cost incurred by Reclamation to determine the level of environmental compliance required for the project*
- *The cost incurred by Reclamation, the recipient, or a consultant to prepare any necessary environmental compliance documents or reports*
- *The cost incurred by Reclamation to review any environmental compliance documents prepared by a consultant*
- *The cost incurred by the recipient in acquiring any required approvals or permits, or in implementing any required mitigation measures*

The amount of the line item should be based on the actual expected environmental compliance costs for the project, including Reclamation's cost to review environmental compliance documentation. How environmental compliance activities will be performed (e.g., by Reclamation, the applicant, or a consultant) and how the environmental compliance funds will be spent, will be determined pursuant to subsequent agreement between Reclamation and the applicant. The amount of funding required for Reclamation to conduct any environmental compliance activities, including Reclamation's cost to review environmental compliance documentation, will be withheld from the Federal award amount and placed in an environmental compliance account to cover such costs. If

any portion of the funds budgeted for environmental compliance is not required for compliance activities, such funds may be reallocated to the project, if appropriate.

As indicated above, the cost budgeted for environmental compliance is \$40,000 as shown in Appendix C. This budget includes Reclamation costs associated with ensuring environmental compliance. It is anticipated that the NEPA compliance will include a simple environmental assessment. The budgeted amount is approximately 1.6 percent of total project costs.

A total of \$20,000 is budgeted for all coordination with Reclamation throughout the duration of the project. This cost includes preparing progress reports, submitting reimbursement requests, and all other coordination required to meet Reclamation guidelines.

Total Costs

Indicate total amount of project costs, including the Federal and non-Federal cost-share amounts.

The total project cost is \$2,432,600. It is anticipated that Reclamation will provide \$300,000 and Salem City will provide the remaining \$2,132,600 through monetary contributions.

Environmental and Cultural Resources Compliance

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants must respond to the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include answers to:

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

The proposed project consists of removing previously-installed plastic irrigation boxes located near the edge of each resident's private property, installing the smart meter in line with the irrigation connection downstream from the City-owned shutoff valve, then re-installing the plastic irrigation box. All City-installed boxes are located within the private landscaping of residents and businesses. Any PI connections constructed after 2015 but prior to meter installation will include the installation of a smart meter as the builder or developer connects to the PI system.

- *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?*

According to IPaC, there are six species listed as threatened or endangered in the project area: the Canada Lynx, Yellow-Billed Cuckoo, June Sucker, Deseret Milkvetch, Jones Cycladenia, and Ute Ladies'-Tresses. However, there are no critical habitats in the project area. There are no anticipated impacts to these species.

- *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.*

According to the National Wetlands Inventory, there are wetlands within City boundaries which the City is aware of. All work will be contained within City boundaries and will not impact surface waters or wetlands. All construction activities will occur within the confines of the existing City-owned irrigation shutoff box on each privately-owned lot.

- *When was the water delivery system constructed?*

The City constructed the existing PI system in 2009.

- *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 proposed project will not modify the existing distribution system but will involve meter installations on the property-owner side of the City-owned shutoff valve.

- *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.*

According to the National Register of Historic Places, there is one listed feature within City boundaries located at 10 North Main Street. This property will not be disturbed outside of the existing irrigation box. The structure itself will not be impacted. If any other historic features are located in the project area, they will be identified as part of the cultural resources survey and all impacts will be avoided.

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

There are no known archeological sites in the project area. If any are identified during the cultural resources survey, they will be avoided.

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

No, the proposed project will not negatively impact low income or minority populations.

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

The project will not affect tribal lands.

- *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?*

The project will not contribute to the spread of noxious weeds or non-native species.

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.

Environmental clearance will be required before construction can begin. This process will include the preparation of an EA to ensure NEPA compliance. A preliminary check of the National Register of Historic Places, the National Wetlands Inventory, and IPaC show no apparent issues. The environmental process should be straightforward and relatively simple to obtain.

Letters of Support

Please include letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support/partnership letters as an appendix. Letters of support received after the application deadline for this FOA will not be included with your application.

Letters of Support are included in Appendix A.

Official Resolution

Include an official resolution adopted by the applicant's board of directors or governing body, or for State government entities, an official authorized to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award under this FOA, verifying:

- *The identity of the official with legal authority to enter into an agreement*
- *The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted*
- *The capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan*
- *That the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement*

An official resolution meeting the requirements set forth above is mandatory. If the applicant is unable to submit the official resolution by the application deadline because of the timing of board meetings or other justifiable reasons, the official resolution may be submitted up to 30 days after the application deadline.

The signed Official Resolution is shown in Appendix B.

Unique Entity Identifier and System for Award Management

All applicants (unless the applicant has an exception approved by Reclamation under 2 CFR §25.110[d]) are required to:

- (i) Be registered in the System for Award Management (SAM) before submitting its application;*
- (ii) Provide a valid unique entity identifier in its application; and*
- (iii) Continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency.*

Salem City holds an active SAM registration with CAGE code 5EMB0 and DUNS number 053955175. The City will maintain an active registration throughout the duration of the project.

Appendix A

Letters of Support

(not counted in page limitations)



CENTRAL UTAH WATER
CONSERVANCY DISTRICT

355 W. University Parkway
Orem, UT 84058-7303
801.226.7100
www.cuwcd.com

OFFICERS

N. Gawain Snow, President
Tom Dolan, Vice President
Gene Shawcroft, General Manager/CEO

TRUSTEES

G. Wayne Andersen
Roddie L. Bird
E. James Bradley
Randy A. Brailsford
Shelley Brennan
Kirk L. Christensen
Michael K. Davis
Tom Dolan
Larry A. Ellertson
Steve Frischknecht
Al Mansell
Michael J. McKee
Greg McPhie
Aimee Winder Newton
Gawain Snow
Byron Woodland
Boyd Workman

January 9, 2017

Mayor Brailsford,

The Central Utah Water Conservancy District is providing this letter of support to Salem City in their application for a WaterSMART grant to assist Salem City with the installation of smart meters, including an Automated Meter Reading (AMR) system, for their pressurized irrigation system.

Metering of water usage is a positive step forward in the conservation of our precious water resources. CUWCD fully supports metering in promotion of conservation efforts.

We are encouraged with Salem's efforts to be good stewards of their secondary irrigation water supply, encouraging conservation efforts on the part of the residents and businesses of Salem City.

Sincerely,

Chris Hansen, P.E.
CUPCA Program Manager



Strawberry High Line Canal Company

54 West 100 North

Payson, UT 84651

(801) 465-4824

highlinecanalco@qwestoffice.net

Salem City
30 West 100 South
Salem, Utah 84653

RE: WaterSMART Grant

Mayor Brailsford,

The Strawberry High Line Canal Company is providing this letter of support to Salem City in their application for a WaterSMART grant to assist Salem City with the installation of smart meters, including an Automated Meter Reading (AMR) system, for their pressurized irrigation system.

We are grateful that Salem City is taking a proactive approach to promote water conservation. We fully support Salem in this effort.

Sincerely,

A handwritten signature in black ink, appearing to read 'Darrick J. Whipple', is written over a horizontal line.

Darrick J. Whipple

General Manager

Strawberry High Line Canal Company



December 29, 2016

Salem City
Mayor Brailsford
30 West 100 South
Salem, Utah 84653

Mayor Brailsford,

Spanish Fork City is providing this letter of support to Salem City in their application for a WaterSMART grant. This grant will assist Salem City with the installation of smart meters, including an Automated Meter Reading (AMR) system, for their pressurized irrigation system.

We are encouraged with Salem's efforts to be good stewards of their secondary irrigation water supply, encouraging conservation efforts on the part of the residents and businesses of Salem City.

Sincerely,

A handwritten signature in blue ink, appearing to read "Chris Thompson", is written over the word "Sincerely,".

Chris Thompson, P.E.
Public Works Director/City Engineer



PO Box 70 745 North 500 East Payson, UT 84651
(801) 465-9273 Fax (801) 465-4580
Email: mail@strawberrywater.com

Calvin V. Crandall
President
Kevin Anderson
Vice President

Jeremy Sorensen
General Manager
Secretary/Treasurer

January 4, 2017

RE: WaterSMART Grant

To Whom It May Concern:

Salem City (City) is applying for a WaterSMART grant to assist the city with installation of smart meters on their pressurized irrigation system. As a shareholder of Strawberry Water Users Association (SWUA) and sub-delivery agent of Strawberry Valley Project water SWUA supports the Cities efforts to more accurately deliver water to SWUA's shareholders.

As Utah has been in a drought for the last few years we can see the need to be more efficient in our delivery systems. The city has been making great strides in updating their secondary irrigation system. A few years ago they installed new irrigation ponds that will help pressurize their system. The city has proven their intent to move forward with the next phase in the project which will be to install the smart meters. This will help them be more efficient and accurate in their delivery.

When awarded this grant the City will move forward quickly and efficiently to utilize the grants funds for the benefit of not only the citizens in their city, but also the SWUA shareholders.

Sincerely,

Jeremy Sorensen, General Manager
Strawberry Water Users Association

BOARD OF DIRECTORS

Scott Phillips J. Merrill Hallam Dr. Curtis G. Thomas Reid Stubbs Lynn Swenson Kevin Anderson Calvin V. Crandall
T. Guy Larson Kelly B. Lewis Robert W. McMullin Robert Riding Dale T. Rowley C. Neil Sorensen Jesse W. Warren Dan R. Williams

Appendix B
Signed Official Resolution

(not counted in page limitations)

**OFFICIAL RESOLUTION
OF THE
City of Salem**

RESOLUTION NO. 2018 - 1

WHEREAS, the United States Department of the Interior, Bureau of Reclamation has announced the *WaterSMART Water and Energy Efficiency Grants* in order to prevent water supply crises and ease conflict in the western United States, and has requested proposals from eligible entities to be included in the WaterSMART Program, and

WHEREAS, the City of Salem has need for funding to complete the Salem City PI Metering Project.

NOW, THEREFORE, BE IT RESOLVED that the City Staff agrees and authorizes that

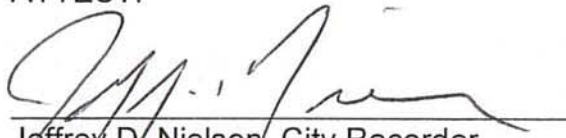
1. The City Staff has reviewed and supports the application submitted;
2. The applicant is capable of providing the amount of funding and/or in-kind contributions, specified in the funding plan; and
3. If selected for a WaterSMART Grant, the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

DATED: 5-2-18



Mayor Kurt L. Christensen
City of Salem






ATTEST:




Jeffrey D. Nielson, City Recorder

RESOLUTION No. 50218

ROLL CALL

VOTING	YES	NO
KURT L. CHRISTENSEN <i>Mayor (votes only in case of tie)</i>		
HOWARD CHUNTZ <i>Council member</i>		
STERLING REES <i>Council member</i>		
CRISTY SIMONS <i>Council member</i>		
SETH SORENSEN <i>Council member</i>		
CRAIG B. WARREN <i>Council member</i>		

I MOVE this resolution be adopted: Council member 

I SECOND the foregoing motion: Council member C. Simons

RESOLUTION No. 50218

RESOLUTION AUTHORIZING CITY STAFF TO APPLY FOR A BUREAU OF RECLAMATION WATERSMART GRANT TO ASSIST WITH PRESSURE IRRIGATION METERING

WHEREAS, the United States Department of the Interior, Bureau of Reclamation has announced that *WaterSMART Water and Energy Efficiency Grants* are available in order to prevent water supply crises and ease conflict in the western United States; and

WHEREAS, the United States Department of the Interior, Bureau of Reclamation has requested proposals from eligible entities to be included in the WaterSMART Program, and

WHEREAS, the grants require a 50% matching grant, either in cash or in-kind; and

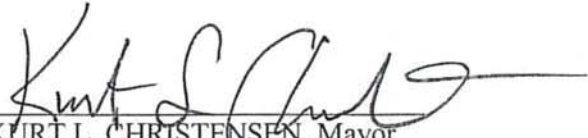
WHEREAS, Salem City has need for funding to complete the Salem City PI Metering Project;

WHEREAS, Salem City is capable of meeting the matching fund requirement;

NOW, THEREFORE, BE IT RESOLVED by the Salem City Council as follows:

1. City staff is hereby authorized to apply for a *WaterSMART Water and Energy Efficiency Grant* from the United States Department of the Interior, Bureau of Reclamation in the approximate amount of \$300,000.00 to partially meter the City's pressure irrigation system.
2. Salem City is capable of providing the amount of funding and/or in-kind contributions, specified in the application and funding plan.
3. If selected for a WaterSMART Grant, the applicant will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.

DATED this 2th day of May, 2018


KURT L. CHRISTENSEN, Mayor

ATTEST:


Jeffrey D. Nielson, City Recorder

Appendix C

Probable Cost for Environmental Services (Environmental and Cultural Resources Compliance)

Salem City Pressurized Irrigation Metering Project
 Probable Cost Opinion for Environmental and Cultural Resources Services

Task Description	Hours By Personnel Category						Total Hours	Total Labor Charges	Other Direct Costs	Total Fee
	1 Principal	2 Project Manager	3 Senior Engineer	4 Staff Engineer	7 Designer	14 Office Assistant				
NEPA Compliance										
Task 1. Cultural Resources Survey/Report		4					4	\$484	\$10,000	\$10,484
Task 2. Preparation of Environmental Assessment Draft			120			4	124	\$12,816		\$12,816
Task 3. Coordination with Reclamation ¹			8				8	\$840	\$12,000	\$12,840
Task 4. Coordination with Other Agencies		4	8				12	\$1,324		\$1,324
Task 5. Preparation of Environmental Assessment Final			16			6	22	\$2,004		\$2,004
Task 6. FONSI	1		4				5	\$561		\$561
SUBTOTAL	1	8	156	0	0	10	175	\$18,029	\$22,000	\$40,000
Project Totals	1	8	156	0	0	10	175	\$18,029	\$22,000	\$40,000

¹ Includes Reclamation Charges for Review

Appendix D

Probable Cost for Engineering Services (Engineering Design and Construction Management)

Salem City Pressurized Irrigation Metering Project
 Probable Cost Opinion for Engineering Services

Task Description	Hours By Personnel Category															Total Hours	Total Labor Charges	Other Direct Costs	Total Fee
	1 Principal	2 Project Manager	3 Senior Engineer	4 Staff Engineer	7 Designer	14 Office Assistant	15 Clerk												
Phase 1 - Project Management & Coordination																			
Task 1. General Project Management Tasks																			
Task 2. Coordination with Reclamation	6	40																	
SUBTOTAL	6	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$6,790	
Phase 2 - Engineering Design																			
Task 1. Design Team Management	8																		
Task 2. Coordination with Residents		40	120																
Task 3. Construction Drawings Draft		8	38		40														
Task 4. Construction Drawings Final	1	4			25														
Task 5. Construction Specifications	2	12	36	40		8													
Task 6. Bid & Award Coordination	4	30	24			30													
SUBTOTAL	15	94	218	40	65	38	0	0	0	0	0	0	0	0	0	0	0	\$56,390	
Phase 3 - Construction Management																			
Task 1. Construction Team Management	16	40																	
Task 2. On-Site Observation and Documentation		140		1600															
Task 3. Submittal Reviews		40																	
Task 4. Contractor Coordination		140																	
Task 5. Record Drawings Preparation		24			24														
Task 6. Project Closeout	2	40	26																
SUBTOTAL	18	424	26	1600	24	0	0	0	0	0	0	0	0	0	0	0	0	\$242,876	
Project Totals	39	553	244	1640	89	38	0	0	0	0	0	0	0	0	0	0	0	\$509,056	
																			\$2,710
																			\$245,600
																			\$309,100

Appendix E

Probable Cost for Construction Services

Construction Cost Estimate

ITEM	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization (10%)	1	EA	\$186,000	\$186,000
2	Furnish and Install 1" PI meter	1,821	EA	\$935	\$1,702,600
3	Furnish and Install 1-1/2" PI meter	72	EA	\$1,320	\$95,000
4	Furnish and Install 2" PI meter	22	EA	\$1,540	\$33,900
5	AMI Software and Installation	1	LS	\$22,000	\$22,000
CONSTRUCTION TOTAL					\$2,039,500

Note: Costs shown above include materials and labor.

Budget Narrative

All unit costs were estimated based on actual construction bids as reported by WBWCD. Engineering judgment was used when comparable items were not available or costs needed to be adjusted to fit conditions specific to the proposed project. All associated construction materials for this project have been included in the installation of the associated meters. It is anticipated that all other incidental construction materials and costs associated with the installation of the meters are included. Inflation is also accounted for in the unit costs as WBWCD installed meters several years prior to the proposed project. In addition to WBWCD bids, the bid abstract for the Welby Jacob Water Efficiency Project (December 2015) was referenced as it was a SCADA project with similar bid items to the proposed project. This bid abstract is available for review upon request.

A detailed narrative of the bid item cost estimates is provided below:

Bid Item 1

The mobilization cost is approximately 10 percent of the total project costs. This is based on the average mobilization cost for each bid on the Welby Jacob Water Efficiency Project which is similar in size to this project.

Bid Items 2, 3, and 4

Costs were based on information provided by WBWCD for their contracted meter installation costs.

Bid Item 5

Cost was estimated based on engineering judgment of a computer programmer installing the AMI software and connecting the AMI system database to the Salem City GIS and Financial Systems.

Appendix F

WBWCD Usage Report Example



WEBER BASIN WATER CONSERVANCY DISTRICT

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

Report Date: 10/06/2015

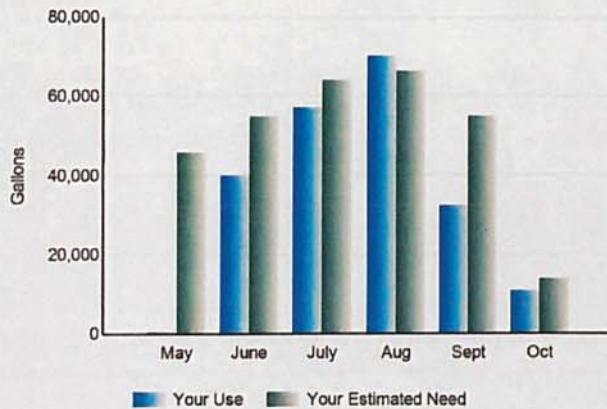
Account Number: 07-342-0007W



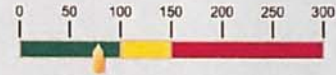
Joe Smith
123 Main St.
Layton, UT 84040

SECONDARY WATER USE REPORT

Meter Number: 2010307942				Usage period: 9/14/2015 through 9/30/2015			
Previous Meter Read		Current Meter Read		Water Used This Month	Elapsed Days	Average Daily Use This Month	Year to Date Use
Date	Reading	Date	Reading				
09/14/15	1,228,721	09/30/15	1,239,406	10,685 gal.	16	668 gal.	210,209 gal.



Your Landscape Area (sq ft)	Your Water Need Based on Your Landscape Area This Month	This Months % of Use to Est. Need
14,745	13,713 gal.	77



Your landscape area is derived from aerial imagery and encompasses your entire lot according to county records, excluding your home and driveway footprint. Estimated need is calculated from 30yr average evapotranspiration values for each month.

If you would like to receive this report by email, contact us at conservation@weberbasin.com with your name and account number, or call us at 801-771-1677.

Thank you for your efforts in helping to conserve water this year. As one of our planet's most precious natural resources, we need all the help we can get!

Weber Basin advises opening your main irrigation valve to allow your system to drain properly now that our system has been shut down. It should be closed again by April 1st, 2016 to prevent water from entering your system without your knowledge prior to next years irrigation startup.

If you have questions or comments on this report, please contact us @ 801-771-1677.

Weber Basin's
Water Conservation Learning Garden
2837 E. Hwy 193, Layton Utah

Appendix G

Proposed PI Rate Structure

Proposed Salem City PI Rate Structure

MONTHLY BASE RATE		\$25.00
TIERED RATE STRUCTURE		
From (gal)	To (gal)	Price (per 1,000 gal)
-	25,000	\$0.35
25,001	35,000	\$0.45
35,001	45,000	\$0.75
45,001	55,000	\$0.99
55,001	65,000	\$1.32
65,001	75,000	\$2.00
75,001	85,000	\$2.50
85,001	95,000	\$3.00
95,001	105,000	\$3.50
105,000	more	\$4.00