WaterSMART

WATER AND ENERGY EFFICIENCY GRANTS FOR FY 2020 AND 2021

NO. BOR-DO-20-F001
FUNDING GROUP II

STEINAKER SERVICE CANAL ENCLOSURE PROJECT – REACH III
UINTAH WATER CONSERVANCY DISTRICT

VERNAL, UINTAH COUNTY, UTAH

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OCTOBER 3, 2019

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1. TECHNICAL PROPOSAL

1.1. EXECUTIVE SUMMARY

Start Date: January 2021

Applicant: Uintah Water Conservancy District

Partners: Potentially NRCS and Salinity Control

Location: Vernal Area, Uintah County, Utah

Project Title: Steinaker Service Canal Enclosure Project – Reach III

Project Summary:

Uintah Water Conservancy District (UWCD) operates the 11.2 mile Steinaker Service Canal, along with other facilities constructed and owned by the United States Bureau of Reclamation (Reclamation). The UWCD delivers water for irrigation, municipal and industrial use in the Ashley Valley area in Northeastern Utah. The Steinaker Service Canal delivers water to canal companies and users that irrigate approximately 14,781 acres through the heart of Ashley Valley. The Steinaker Service Canal Enclosure Project was initiated by UWCD in 2016 to rehabilitate and enhance the water delivery system. Reach III of the Project consists of the installation of approximately 13,100 feet of 72 inch Fiberglass Pipe along with associated appurtenances, turnouts and measurement devices. Telemetry would be installed to record and transmit real-time flows to UWCD. Efforts would be made to facilitate future automation on the same system. This project would eliminate 13,100 feet of unlined canal seepage losses of approximately 900 ac-ft/yr as well as provide a pressurized system more suited for sprinkle irrigation.

Length of Time: 16 Months

Completion Date: May 1st 2022

Federal Facility Location: Reclamation headed the creation of the Thornburgh Diversion, Steinaker Feeder Canal, Steinaker Dam and Reservoir and Steinaker Service Canal as part of the Vernal Unit in the Central Utah Project. This project forms part of the Steinaker Service Canal and is directly connected and affected by the other facilities mentioned above.

1.2. BACKGROUND DATA

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

The Uintah Water Conservancy District (District) delivers irrigation, municipal, and industrial water to much of the Ashley Valley and Jensen areas in Uintah County. The Vernal Unit Facilities that are operated by the District consist of Fort Thornburgh Diversion on Ashley Creek, Steinaker Feeder Canal, Steinaker Dam and Reservoir, and Steinaker Service Canal. These are all federal facilities constructed as part of the Central Utah Project and owned by Reclamation. The flows in Ashley Creek are typical with that of any high mountain river, where the flows can vary significantly throughout the year but usually see high flows during spring runoff. Ashley Creek typically peaks early in the season with flows dropping as the snowpack melts off. Steinaker Reservoir is filled with these peak flows through the Fort Thornburgh Diversion and Steinaker Feeder Canal. This Reservoir has a total capacity of 40,043 acre-feet with an active capacity of 34,955 acre-feet and entitlement rights of only 19,500 ac-ft/yr. Typically, Steinaker Reservoir is able to supply a full 19,500 acre-feet of water to the Vernal Unit.

The Steinaker Service Canal carries approximately 250 cfs and is used to irrigate roughly 14,781 acres of farmland. This farmland typically grows alfalfa, oats, barley, corn, grass hay, and irrigated pastureland. The water to grow these crops is either delivered directly through the Steinaker Service Canal or by exchange through existing canals above the Steinaker Service Canal. The Steinaker Service Canal delivers the project water stored in Steinaker Reservoir to the Highline Canal, Ashley Upper Canal, Colton Ditch, Ashley Central Canal, Island Ditch, Dodds Ditch, Hardy Ditch, and the Rock Point Canal. Out of these Ditches and Canals are other laterals that deliver the water to individual water users who use the water to irrigate the farmland. In addition to irrigation water, there are rights for Municipal and Industrial water stored in Steinaker Reservoir. The Municipal and Industrial water takes priority over the irrigation water, so on years of short supply they will receive their full allotment while the irrigation water receives a regulated supply. The individual water users order the necessary water to grow their crops which is compiled by the Ashley Valley Water Users Association and then forwarded to the District.

Previously the District initiated rehabilitation of 11.2 miles of the Steinaker Service Canal in 2016. Flow measurements from 2007 to 2011 showed that the canal seepage losses averaged approximately 4,067 ac-ft/yr, or 15 percent of the flow. Seepage loss has been distributed to each reach based on the ratio of its length to the length of the entire canal. Reach I was completed in 2017, which enclosed the first 3.1-mile section. This proposed portion of the project, Reach III, will enclose approximately 13,100 feet upstream of Reach II of the Service Canal by installing a 72-inch fiberglass pipe, together with all necessary appurtenances, structures, and road crossings. Reach III enclosure would save approximately 900 ac-ft/yr of seepage loss in the 13,100 feet of canal.

1.3. 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}

See attached Project Location Map in Appendix C for location of project in relation to watershed boundaries and storage reservoir. Reach III begins in the area of 2000 South and 1000 West in Uintah County, Utah and will end at approximately at Main Street and 1500 West. The project is located in the County surrounding Vernal City. The beginning point has a latitude of 40.4252090° N and longitude of 109.548936° W. The ending points has a latitude of 40.455516° N and longitude of 109.559927° W.

See the Site Map in Appendix C illustrating the pipeline alignment and extents of the Reach and possible sub-reaches. Shapefiles and a Google Earth KMZ file will be available upon request. Coordinate system is in decimal degrees WGS 84.

1.4. 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. Please note, if the work for which you are requesting funding is a phase of a larger project, please only describe the work that is reflected in the budget and exclude description of other activities or components of the overall project.

The proposed Steinaker Service Canal (SSC) Enclosure Project will include the following milestones and activities:

- Topographic survey, preliminary design and hydraulics, and determining existing features and pipeline locations for connections
- Environmental surveys and permitting. SSC features are within described Reclamation-owned land or prescriptive ROW in ditch.

- Design of Pipeline, Connections, Flow Control, Flow Measurement, and Telemetry
- Advertise for bidding, Contractor selection and procurement
- Installation of approximately 13,100 feet of 72-inch fiberglass pipe with flow control valves, flow measurement instruments and meters, telemetry and with solar panels, commissioning of all project elements
- Associated flushing valves, air vents
- Monitoring of improvements and assessment of project goals and water conservation measures

The following list of objectives for the project includes:

- Eliminate water losses in canal along this reach of the project
- Enclose canal to reduce hazard and maintenance
- Improve water management, level control, and measuring capabilities
- Improve the ability for farmers to utilize their full water share
- Increase efficiency of irrigation by use of a pressurized delivery system capable of running pivots and other sprinkle systems.
- Increase accuracy and timeliness of water deliveries through telemetry and meters
- Future automation of critical flow control valves, and
- Utilize renewable energy through solar panels

1.5. EVALUATION CRITERIA

(See Section E.1. Technical Proposal: Evaluation Criteria for additional details, including a detailed description of each criterion and Subcriterion and points associated with each.) The evaluation criteria portion of your application should thoroughly address each criterion and subcriterion in the order presented to assist in the complete and accurate evaluation of your proposal. It is suggested that applicants copy and paste the evaluation criteria and subcriteria in Section E.1. Technical Proposal: Evaluation Criteria into their applications to ensure that all necessary information is adequately addressed

1.5.1. 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.*

1.5.1.1. 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. Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.

For the entire 11.2-mile stretch of the Steinaker Service Canal, the canal losses between 2007 and 2011 averaged 4,067 ac-ft/yr. These losses were calculated using measurements from the Ashley Creek River Commissioner. Losses for each individual reach were then calculated using the ratio of reach length to entire canal length. This leads to approximately 900 ac-ft/yr being lost through the 13,100 foot length of Reach III.

1.5.1.2. 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 water that will be conserved in this project is currently seeping into the ground along the length of the canal as well as a small portion to evaporation from the open channel. Seepage follows natural water courses and in most cases infiltrates into the surrounding soils. There is likely some operational losses accounted for in the loss data.

1.5.1.3. 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 when determining the estimated water savings, along with the necessary support needed for a full review of your proposal. In addition, please note that the use of visual observations alone to calculate water savings, without additional documentation/data, are not sufficient to receive credit under this section. Further, the water savings must be the result of reducing or eliminating a current, ongoing loss, not the result of an expected future loss. See FOA Pages 34-37 for project specific questions.

Support documentation of the water losses comes from the Environmental Assessment (EA) that has already been completed for this project. The data that was derived for the EA was provided by the Ashley Creek River Commissioner. Measurements were collected at the inlet to the canal and at the last turnout. The table from the EA is shown in Appendix D. Based on the 2007 through 2011 water years, the average water loss in the SCC was 15% along the entire length of the canal.

1.5.1.4. SAVINGS FOR CANAL LINING/PIPING PROJECTS

Please address the following questions according to the type of project you propose for funding.

(1) ***Canal Lining/Piping:*** *Canal lining/piping projects can provide water savings when irrigation delivery systems experience significant losses due to canal seepage. Applicants proposing lining/piping 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.

The annual average water savings for this application came from taking the value determined by data in the EA of 15% water loss for the entire canal and proportioning it to the proposed length of the Reach III project. For an average of 26,603 ac-ft/yr conveyed through the SSC during water years 2007 through 2011, the average measured losses were 4,067 ac-feet/year. This would be for the entire 11.2 mile stretch of the canal. As Reach III is proposing to install 13,100 feet of piping, it would help save an estimated 900 ac-ft/yr (4,067*13,100/(5280*11.2)%=900).

(b) How have average annual canal seepage losses been determined? Have ponding and/or inflow/outflow tests been conducted to determine seepage rates under varying conditions? If so, please provide detailed descriptions of testing methods and all results. If not, please provide an explanation of the method(s) used to calculate seepage losses. All estimates should be supported with multiple sets of data/measurements from representative sections of canals.

Flow measurement devices were used at the canal intake and at the last turnout near the end of the canal. Water deliveries were subtracted and the difference left over was determined to be losses. These measurements were provided by the Ashley Creek River Commissioner.

(c) What are the expected post-project seepage/leakage losses and how were these estimates determined (e.g., can data specific to the type of material being used in the project be provided)?

Post-project seepage losses will be reduced greatly with virtually no water loss in area where pipe is installed. Pipe material will consist of Fiberglass Reinforced Pipe, with some mechanical fittings for turnouts, meters and valves. This piping material is accepted as a leak proof joint, as well as a 50-year material. Metering and telemetry will track water diversions and deliveries so losses can also be monitored. Little to no seepage losses are anticipated after the completion of the project.

(d) What are the anticipated annual transit loss reductions in terms of acre-feet per mile for the overall project and for each section of canal included in the project?

The anticipated annual transit loss reduction for the entire Steinaker Service Canal is 4,607 ac-ft/yr over 11.2 miles of canal or approximately 363 ac-ft/mile. It is estimated to be the same for Reach III.

(e) How will actual canal loss seepage reductions be verified?

Inflow/Outflow testing of the piped system will be performed after completion to verify overall reduction in seepage and increase in efficiency. (See Subcriterion No. F.3 – Performance Measures.)

(f) Include a detailed description of the materials being used.

Materials to be used include the following list. Other work will include staking, excavation and embankment work.

- 72" Fiberglass Reinforced Pipe
- Combination Air Release/Vacuum Valves
- Pipeline drain lines and boxes
- Concrete thrust blocks and thrust restraints
- Valves at irrigation turnouts
- Flow measurement devices, mainly flow meters on turnouts
- Solar panels for telemetry to provide real-time flows to UWCD
- Traveling screen
- Rip Rap

*(2) **Municipal Metering**:*

Not applicable.

*(3) **Irrigation Flow Measurement**: Irrigation flow measurement improvements can provide water savings when improved measurement accuracy results in reduced spills and over-deliveries to irrigators. Applicants proposing municipal metering projects should address the following:*

> *(a) How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*

As stated above, water saving estimates have been determined using flow measurements provided by the Ashley Creek River Commissioner that were also used in the EA for the SSC. Flow measurements were taken at the intake to the canal and then again at the last turnout near the end of the canal. Any deliveries were accounted for and then the difference between inflow and outflow was taken as seepage losses. UWCD plans to incorporate flow measurement devices at each turnout location on the pipeline. Loss data is found in Appendix D.

> *(b) Have current operational losses been determined? If water savings are based on a reduction of spills, please provide support for the amount of water currently being lost to spills.*

Operational losses are most likely accounted for in the seepage loss measurements collected. The operational losses were not calculated independently. These losses would come from over-delivery of water to users on the canal system. Each ditch currently has a measuring device, while most are old flumes or weir structures with low accuracy.

> *(c) Are flows currently measured at proposed sites and if so, what is the accuracy of existing devices? How has the existing measurement accuracy been established?*

Each turnout along the canal has some sort of measuring device. While some further upstream in the canal have incorporated level sensors and telemetry, most are dilapidated flumes that are manually read and are not as accurate. New flow measurement devices (pipeline meters) will be installed as part of the project with telemetry to send the flow rates to UWCD where it can be monitored.

(d) Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for the accuracy.

Preliminary plans for the project propose Eastech Vantage 4400 unidirectional strap on meters. These ultrasonic meters are externally mounted and provide plus or minus 1% accuracy when acoustic signals are capable of being transmitted through the pipe. The meters have an integrated datalogger to record readings are easily adapted to use with telemetry. They are capable of reading flows where velocities range from 0.1 ft/s to 40 ft/s and have a 0.25% repeatability.

(e) Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?

Under current operating conditions, more water is delivered than necessary due to lack of monitoring abilities and the uncertain amount of water lost due to seepage. It is anticipated that actual delivery volumes will be reduced when monitoring equipment is installed and losses due to both seepage and over-delivery are reduced. Flow meters will also allow UWCD and the canal companies to detect leaks. Delivery volumes will reduce at least 900 acre-feet due to the seepage losses shows in the measurements and calculations.

(f) How will actual water savings be verified upon completion of the project?

Inflow/Outflow testing of the piped system will be performed after completion to verify overall reduction in seepage and increase in efficiency of delivery along this reach of the Steinaker Service Canal.

Monitored flow rates will be compared to records kept by SSC and average savings will be calculated. Dataloggers on the telemetry will also keep a record of hourly averages and daily averages for review by UWCD. Ditches and Canal Companies will also know exactly how much money they are receiving from the canal and will be able to monitor their savings as well.

*(4) **Supervisory Control and Data Acquisition and Automation**: SCADA and automation components can provide water savings when irrigation delivery system operational efficiency is improved to reduce spills, over-deliveries, and seepage. Applicants proposing SCADA and automation projects should address the following:*

(a) How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.

Telemetry systems will be installed at turnouts to go along with the flow meters. The real-time flows will be transmitted to UWCD and available to canal companies. It is intended that the telemetry portion be install as to allow automation of valves in the future. This real-time flow will help ensure proper deliveries as well as provide accurate turnout flows that can be deducted from inlet flows to measure reduction in seepage losses.

See the explanation in 1.5.1.3 for estimation method on the seepage losses.

(b) Have current operational losses been determined? If water savings are based on a reduction of spills, please provide support for the amount of water currently being lost to spills.

Operational losses are believed to be accounted for in the seepage loss calculations. Without accurate measurement devices at the existing turnouts, it is difficult to quantify the operational losses.

(c) Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?

Under current operating conditions, more water is delivered than necessary due to lack of accurate, real-time monitoring abilities and the uncertain amount of water lost due to seepage. It is anticipated that actual delivery volumes will be reduced when the pipeline and SCADA system is installed and losses are reduced.

(d) Will canal seepage be reduced through improved system management? If so, what is the estimated amount and how was it calculated?

The canal upstream of Reach III, to be completed after Reach II, does not have a current timeline for an enclosure project. Due to the reduction of seepage losses in the 13,100 feet of canal that will be piped as part of this project, deliveries into the canal will be able to be reduced. Accurate, real-time flow measurement at each turnout will also decrease over-deliveries, thus reducing the overall inlet flows into the canal from the reservoir. The reduction in flow rate in the canal will reduce seepage losses in the open channel. Although operational losses are not known, the loss measurements would indicate that 15% of flows caused by over-deliveries and seepage would be lost as well.

(e) How will actual water savings be verified upon completion of the project?

Historic flow and loss data collected by the Ashley Creek River Commissioner will be compared with flow and loss data collected using the flow measurement devices installed as part of this project. Users, including canal companies, will receive flows at a much more precise rate as they request than they have been receiving. These accurate readings will be used compared to the manual readings that have been collected prior. These meters and telemetry will also allow the receiving canal companies to monitor losses at a more accurate level on their canals and ditches.

(5) ***Landscape Irrigation Measures****:*

N/A

(6) ***Turf Removal****:*

N/A

(7) ***Smart Irrigation Controllers and High-Efficiency Nozzles****:*

On farm improvements through NRCS EQIP program will enable farmers to install these types of efficient controllers and nozzles. The extents of this projects end at the flow meter and turnout; however, the reliability improvements will encourage more users to convert to sprinklers and provide water users with the ability to install high-efficiency nozzles.

(8) ***High-Efficiency Indoor Appliances and Fixtures****:*

N/A

(9) ***Groundwater Recharge****:*

N/A

(10) ***Small Water Recycling and Water Reuse Improvements****:*

N/A

(11) ***Other Project Types Not Listed Above****:*

N/A

1.5.2. 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:

1.5.2.1. WILL THE PROJECT ADDRESS A SPECIFIC WATER RELIABILITY CONCERN?

(a) 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 Ashley Valley has been in a severe drought for many years. The drought classification was recently lifted for many areas, although drought is common in the area. Steinaker Reservoir is an off-channel reservoir and thus does not get excess flows during large precipitation years. Steinaker reservoir has also been under repair for two years and has missed out on being able to receive the allotted volume. Efficient delivery systems are critical to smart water usage when supply runs low. With Steinaker only allowed to receive 19,500 acre-feet per year, these water savings will help UWCD to be able to store those losses in the reservoir for use during drought years. This stored/saved water also helps ensure adequate delivery to municipal and industrial users and lessens the burden put on irrigators to go without when water isn't available.

(b) Describe how the project will address the water reliability concern: In your response, please 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.

This project will conserve water and increase efficiency in delivery and measurement, which will directly affect all users of the Steinaker Service Canal. Accurately measured deliveries will help users be responsible for the water they receive and will allow UWCD to be a better steward of this natural resource. The conserved water will be stored in Steinaker Reservoir and will address shortages that often happen in drought years.

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

Steinaker Reservoir can retain the water saved by eliminating seepage losses in this project area. This water may then be used to supply adequate demands from all users. This water is already being pulled from Ashley Creek and put into the reservoir. Delivery volumes will be able to be reduced directly related to the reduction in losses.

(d) Indicate the quantity of conserved water that will be used for the intended purpose.

The conserved amount of water being able to be utilized for the intended purpose is the water that is currently being lost through seepage with an annual estimate of 900 acre-feet between the two project areas.

1.5.2.2. WILL PROJECT MAKE WATER AVAILABLE TO ACHIEVE MULTIPLE BENEFITS OR TO BENEFIT MULTIPLE WATER USERS?

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

The project will benefit primarily agriculture, but UWCD does deliver water for both municipal and industrial use in the Ashley Valley. The additional water that UWCD can keep in the reservoir will also benefit recreation. When the reservoir drops to a certain elevation, it is difficult for boaters to access the ramp. With a better maintained water stage, fish habitat and recreation areas will be more accessible and favorable.

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)?

The project would benefit neither a federally listed or candidate species, nor a state listed species; however, Steinaker Reservoir is home to a variety of sport fish including bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), largemouth bass (*Micropterus salmoides*), and rainbow trout (*Oncorhynchus mykiss*). These sport fish are important to the recreational experience at Steinaker Reservoir and these fish species would benefit from the project because of the steadier water levels resulting from reductions in water over-delivery to the canal due to seepage and operational losses.

Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a reclamation project. Will the project benefit a larger initiative to address water reliability?

Sport fish would not be adversely impacted by the project as they are confined to Steinaker Reservoir. Fish do not occur within the Steinaker Service Canal (see environmental assessment). The project would not adversely impact federally listed or candidate species or state listed species.

Will the project benefit Indian Tribes?

This project does not directly benefit Indian Tribes, although those living in the area may choose to recreate on the reservoir and individual property owners that belong to an Indian Tribe may receive water through the facility.

Will the project benefit rural or economically disadvantaged communities?

Rural areas along the canal system will benefit from the project including the high agricultural areas in the Davis and Jensen vicinities where some of the water is delivered.

Describe how the project will help to achieve these multiple benefits. In your response, please address where the conserved 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 utilized to meet irrigation needs that have previously been under-delivered. The conserved water will also remain in the reservoir to serve recreational and habitat purposes.

1.5.2.3. 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?

Reclamation emphasizes smart and efficient use of natural resources, especially water, with growing populations as well as industrial and agricultural needs. Where Reclamation still owns the facilities, they have shown support for previous improvements and planned improvements including enclosing Reach II and III. The canal companies are also very supportive of the project as this system directly serves them and their shareholders. Many other residents in the area are also supportive as the enclosure will eliminate some of the safety concerns of an open canal.

What is the significance of the collaboration/support?

Support from Reclamation and the canal companies is paramount to the success of the project as they form a direct partnership with UWCD in the facility. They support from these and other stakeholders encourages UWCD to pursue projects that help achieve water conservation plans and the purposes set forth by Reclamation.

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

Several users on the service canal will be motivated to implement improvements to their on-farm systems that will increase efficiency and reliability in watering their crops. Affected canal companies will also be served by these improvements and would have a greater ability to tie into the system and benefit from the pressures. As the canal and ditch turnout currently sit, it may be difficult to build intake works for their systems. This project would do away with those difficulties. This project will also aid in those canal companies seeking federal aid with the installation of the flow measurement devices and the ability to accurately report their deliveries and calculate their losses.

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

This project will help prevent possible crisis of flooding due to canal bank rupture or overflow. The Steinaker Service Canal flows through many populated residential areas. Under the right circumstances, major flooding may occur in residential neighborhoods. The ability to accurately record and monitor water deliveries will also help prevent conflict when water supplies may be low.

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

Reclamation is considered a partner as they are the owner of the facility that is being improved as well as the upstream facilities that feed this canal. Reclamation has turned the facility management over to UWCD.

1.5.2.4. WILL THE PROJECT ADDRESS WATER SUPPLY RELIABILITY IN OTHER WAYS NOT DESCRIBED ABOVE?

The main water supply reliability concerns and benefits have been described above.

1.5.3. 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:

1.5.3.1. 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.*

1.5.3.2. 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.

1.5.3.3. 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.

No Hydropower elements are included in this project.

1.5.4. EVALUATION CRITERION D: COMPLEMENTING 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.*

Note: Scoring under this criterion is based on an overall assessment of the extent to which the WaterSMART Grant project will complement ongoing or future on-farm improvements. Applicants should describe any proposal made to NRCS, or any plans to seek assistance from NRCS in the future, and how an NRCS-assisted activity would complement the WaterSMART Grant project. Financial assistance through the Environmental Quality Incentives Program (EQIP) is the most commonly used program by which NRCS helps producers implement improvements to irrigation systems, but NRCS does have additional technical or financial assistance programs that may be available. Applicants may receive maximum points under this criterion by providing the information described in the bullet points below. Applicants are not required to have assurances of NRCS assistance by the application deadline to be awarded the maximum number of points under this sub-criterion. Reclamation may contact applicants during the review process to gather additional information about pending applications for NRCS assistance if necessary.

Please note: on-farm improvements themselves are not eligible activities for funding under this FOA. This criterion is intended to focus on how the WaterSMART Grant project will complement ongoing or future on-farm improvements. NRCS will have a separate application process for the on-farm

components of selected projects that may be undertaken in the future, separate of the WaterSMART Grant project.

If the proposed project 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.*

As previously noted, there are still a handful of irrigators in the system, either directly connected or through an attached canal/ditch, that have not converted over to sprinkler systems and still flood irrigate. At the time of application, there is not a current list available for specific farms that have requested assistance, however more information has been requested of NRCS and the shareholders. Availability of a pressurized system has been one factor holding these individuals back. The project will improve reliability of irrigation flows and stabilized pressures, which are the two main obstacles.

- *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?*

Many of the users adjacent to this canal and others in the valley have difficulty building pressures to run a sprinkler system. Those that have been able to build ponds to supply head have been running pressurized sprinkler systems and others have elected to install pumps. This project would directly affect all users who have previously, are currently, or plan on implementing on-farm improvements by providing a pressurized system with relatively clean water that can be connected to the on-farm systems. This will allow high efficiency nozzles and other advanced systems to be implemented and further reduce wasted water deliveries.

- *Describe the on-farm water conservation or water use efficiency benefits that are expected to result from any on-farm work.*
    - *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.*

On-farm improvements that can potentially be realized are mainly in the form of conversion from flood irrigation to sprinkler systems. Inquiry is in progress for how many acres would potentially be converted in the coming two years and data is not available at this time.

1.5.5. 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 priorities 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;*

Telemetry elements in the proposed project include water level sensors, data loggers, solar panels, SCADA, and setting up the potential to automate gates and valves in the future; these improvements are a perfect example of utilization of modern science for managing our water resources.

    b. *Examine land use planning processes and land use designations that govern public use and access;*

The canal systems in Ashley Valley have been an important element of land planning and land use with regards to a potential trail system once they are enclosed, as well as residential development and growth. There is also a storm drainage element being addressed with many of the canals, including the Steinaker Service Canal.

    c. *Revise and streamline the environmental and regulatory review process while maintaining environmental standards;*

Because the entire Steinaker Service Canal easement was covered under an approved Environmental Assessment (see Section 2.3.8 below), project-related impacts have been addressed. No additional NEPA analysis, environmental surveys, mitigation, or permitting will be required for this project. Only some environmental coordination would be needed to ensure that design and construction is confined to areas addressed in the approved Environmental Assessment.

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

Reclamation owned facilities such as Steinaker Reservoir, Steinaker Service Canal, and other irrigation infrastructure in the Uintah Basin and Ashley Valley specifically contribute to UWCD and UWCD's ability to deliver, store, and manage water. Increasing efficiency helps resolve conflicts as well as expand capacity of the systems being improved.

e. *Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands;*

The project delivers water via Steinaker Reservoir, which has become an important fishery for trout, bass, and bluegill. Recent improvements to the reservoir and Watershed planning has fostered an open dialog between the irrigation companies and the Utah Division of Wildlife Resources.

f. *Identify and implement initiatives to expand access to DOI lands for hunting and fishing;*

Steinaker Reservoir is the main fishing destination for the Vernal, Utah area. Losses conserved from canal will on average increase the available water stored in the reservoir and therefore aquatic habitat.

g. *Shift the balance towards providing greater public access to public lands over restrictions to access.*

There has been planning done to utilize the buried pipeline as a potential trail system for bikers and pedestrians once canal is piped, this would allow greater public access through the heart of Ashley Valley.

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.*

Solar powered telemetry and SCADA is one way that renewable energy is being utilized for this project. The Uintah Basin provides an important economic resource with the oil and gas fields herein. The efficiency of the SSC irrigated lands will allow farmers to put up more hay, establish and maintain quality forage for cattle and other livestock, which in turn reduces competition and shortfalls for grazing in the area.

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.*

Although tribal water does not get delivered through the UWCD and Ashley Creek systems, their tributaries go to jointly utilized waters. The NRCS funding portion of the project is facilitating a Watershed Plan EA that is bringing many of these entities to the table for partnering on projects such as community fishing ponds, Ashley Creek restoration, flood control efforts, and canal enclosure projects with recreational trail systems. This project was an important part of the UWCD RCPP funding package and the public and inter-agency outreach has been and will continue to be important for these projects. Reclamation and UWCD are supportive of the project and it follows their goals for efficiency in irrigation deliveries.

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.*

This project utilized a unique approach for transplanting and attempting to propagate the endangered orchid (ULT). Reclamation and USACE worked together with UWCD to find a balance in the permitting and NEPA requirements.

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:*
        i. *Construction of infrastructure;*
        ii. *Cyclical maintenance;*
        iii. *Deferred maintenance.*

UWCD serves and works alongside private irrigation companies like Ashley Water Users, Ashley Central Canal, and some smaller ditch companies to modernize the UWCD irrigation infrastructure. Maintaining and improving the irrigation systems in the UWCD and Vernal Unit service areas is a priority for both public and private groups in the Uintah Basin.

1.5.6. EVALUATION CRITERION F: IMPLEMENTATION AND RESULTS

*Up to **6 points** may be awarded for these subcriteria.*

1.5.6.1. 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, or other planning efforts done to determine the priority of this project in relation to other potential projects.

The UWCD has a Water Management and Conservation Plan. It was recently updated in March of 2013 and is currently being updated. UWCD has started on a Comprehensive Master Planning process. The Steinaker Service Canal enclosure has been a study and plan for many years, and has now moved to the second Reach for piping. It has been a priority for Reclamation as well. The project is well supported, but needs additional funding to become a reality.

(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 Utah State Water Plan emphasizes water conservation and efficient management of developed water supplies as key strategies in providing for the present and future water needs in the state. This project meets the goals of the UWCD and Reclamation to conserve water within their service areas. One of the major goals of the area is to encourage users to implement pressurized irrigation systems and develop underground delivery systems. This project will contribute to the ability for users to implement reliable pressurized systems and install underground delivery systems within the region.

1.5.6.2. SUBCRITERION NO. F.2: PERFORMANCE MEASURES

Points may be awarded based upon 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). For more information calculating performance measure, see Appendix A: Benefit Quantification and Performance Measure Guidance.

All Water and Energy Efficiency Grant applicants are required to propose a "performance measure" (a method of quantifying the actual benefits of their project once it is completed). A provision will be

included in all assistance agreements with Water and Energy Efficiency Grant recipients describing the performance measure and requiring the recipient to quantify the actual project benefits in their final report to Reclamation up completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of Water and Energy efficiency Grants.

Performance measures will be in place for the reduction or non-existence of seepage and spills through the proposed pipeline with metering on both the main line and turnouts. While there will still be an overflow and screen structure until the entire canal is piped, UWCD has operated the canal currently with Reach I with minor spillage and a steady delivery. Reach II and III will be even easier to maintain a steady flow as they are closer to the reservoir, making adjustments appear quicker than Reach I.

The metering and overflow measurement will allow UWCD and Reclamation accountability and the data to show their progress in delivering the water. The final report will document these elements after the first season of use.

1.5.6.3. SUBCRITERION NO. F.3: READINESS TO PROCEED

Points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement.

Applicants that describe a detailed plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.

- *Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

With the NEPA work completed, an established right-of-way and supplemental funding being applied for (NRCS RCPP Supplemental amount and Salinity), and design partially completed, this project would be shovel ready once Reach II is completed, or concurrent with Reach II construction. Note that the UWCD is prioritizing Reaches from downstream moving upstream, which would apply to sub-reaches as well.

The implementation plan for the proposed project is attached in Appendix A.

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

  The environmental surveys for the entire length of the Steinaker Service Canal easement occurred during 2013 and the NEPA analysis was completed and approved during September 2014 (PRP-EA-13-003; https://www.usbr.gov/uc/envdocs/ea/steinaker/ServCanal/finalEA.pdf).
  Since the NEPA for the project is complete, the environmental schedule assumes that no additional environmental surveys or mitigation would be required. Further, no permitting will be required with the U.S. Army Corps of Engineers (USACE; see above-referenced environmental assessment). Some environmental coordination would be required to complete the project.

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

The UWCD and Reclamation have completed design and construction of Reach I of the Steinaker Service Canal Project and have a preliminary design started for Reaches II and III. The entire canal easement has been surveyed. In preparation for vetting and funding the project, the water users and River Commissioner have made efforts to measure seepage and losses to support the project. Additional planning, such as the NRCS Watershed Plan-EA, Canal Safety Plans, and NEPA work have been completed or are being completed to cover a wide variety of planning goals and purposes.

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

The UWCD and Reclamation have put in place a partnership that has worked well in the past. No additional administrative actions are anticipated.

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

The project can begin immediately upon execution of any grant agreement. Engineering design would continue as soon as agreements are in place. Environmental surveys for the entire length of the Steinaker Service Canal easement occurred during 2013 and the NEPA analysis was completed and approved during September 2014 (PRP-EA-13-003; https://www.usbr.gov/uc/envdocs/ea/steinaker/ServCanal/finalEA.pdf). Since the NEPA for the project is complete, the environmental budget assumes that no environmental surveys or mitigation would be required. Further, the environmental budget assumes that no permitting will be required with the U.S. Army Corps of Engineers (USACE; see above-referenced environmental assessment). Some environmental coordination would be required to complete the project, and this cost is reflected in the proposed project budget.

The project would occur within the existing Steinaker Service Canal easement owned by Reclamation, the entirety of which was included in the completed NEPA analysis. After the project is

designed, a contractor would be procured, and construction would likely begin during the Fall of 2021 and be complete by Spring of 2022. The project would be constructed outside of irrigation season when the canal is dewatered. See Appendix A for the proposed schedule with major tasks and dates.

Staff at the local Bureau of Reclamation office were consulted regarding the development of environmental project costs; those general guidelines for developing environmental project costs have been considered in this application's budget. Environmental costs were developed by Jones and DeMille Engineering environmental staff after reviewing the locations and scope of the proposed project. JDE environmental staff have extensive experience in NEPA, ESA, NHPA, CWA, and other environmental regulations.

1.5.7. 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? If so, how? Please consider the following:*
    - *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 Steinaker Service Canal is part of the Vernal Unit of the Central Utah Project, and is owned by Reclamation with the UWCD operating and maintaining the canal. Reclamation owns the water rights being diverted from Ashley Creek, stored in Steinaker Reservoir (also a Reclamation facility), and delivered by the Canal. The proposed projects are contributing to this basin where Reclamation has been actively engaged.

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

The Ute Tribe has some interest and rights in the Green River, of which Ashley Creek is a tributary. Water savings may have an indirect benefit on the amount of water needing to be diverted or left in the river system.

1.5.8. EVALUATION CRITERON 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:*

$$\frac{Non - Federal\ Funding}{Total\ Project\ Cost}$$

The percentage of non-Federal funding in this proposal is currently 87.5% of the project costs.

2. PROJECT BUDGET

2.1. 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. This is a **mandatory requirement.** 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 project 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.

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

- *Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments)*
- *Any costs that will be contributed by the applicant*
- *Any third party in-kind costs (i.e., goods and services provided by a third party)*
- *Any cash requested or received from other non-Federal entities.*
- *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.*

In addition, please 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*
- *The date of cost incurrence*
- *How the expenditure benefits the Project*

The total project cost is $16,000,000 for Reach III. UWCD has applied for additional funding assistance for a portion of Reach III through the NRCS RCPP program, up to $3,200,000 would be allocated to Reach III or possibly $1,000,000 if WaterSMART awarded the Reach II application for $1,500,000. There has also been an application submitted for the Salinity Control program for $500,000 for salt load reduction. Neither of these applications have or will receive news of an award for at least a month or two. **UWCD understands that Federal cost share cannot exceed 50% and will ensure that does not occur.**

Recent work on Steinaker Dam and Reach I of the Steinaker Service Canal have been a large investment for UWCD and Reclamation, therefore additional funding sources are necessary to complete the next priorities for the improvements in the Vernal Unit of the Central Utah Project.

If the $1,500,000 WaterSMART grant requested by this application is not approved, the project will continue to be applied for and additional funding sought. It is assumed that UWCD will fund their portion of the project through a loan, or it may be sought through bonding.

Project efforts prior to the award include surveys and studies to complete the environmental assessment, topographic surveys and engineering design to formulate the concept cost estimates, concept hydraulic design, and Ute Ladies-Tresses surveys and transplanting.

2.2. BUDGET PROPOSAL

The total project cost (Total Project Cost), is the sum of all allowable items of costs, including all required cost sharing and voluntary committed cost sharing, including third-party contributions, that are necessary to complete the project.

Table 1. – Total Project Cost Table

SOURCE	AMOUNT	% of Total
Costs to be reimbursed with the requested Federal Funding	$1,500,000	9.4%
Costs to be paid by the applicant	$14,000,000	87.5%
Other Funding Sources (NRCS, Salinity Program - speculative)	$500,000	3.1%
Total Project Costs	**$16,000,000**	**100%**

*The budget proposal should include detailed information on the categories listed below and must clearly identify **all** items of cost, including those that will be contributed as non-Federal cost share by*

the applicant (required and voluntary), third-party in-kind contributions, and those that will be covered using the funding requested from Reclamation, and any requested pre-award costs. Unit costs must be provided for all budget items including the cost of services or other work to be provided by consultants and contractors. Applicants are strongly encouraged to review the procurement standards for Federal awards found at 2 CFR §200.317 through §200.326 before developing their budget proposal.

It is also strongly advised that applicants use the budget proposal format shown below in Table 2 or a similar format that provides this information. If selected for award, successful applicants must submit detailed supporting documentation for all budgeted costs. Additional information regarding the types of documentation that will be necessary to support budgeted costs can be found in Attachment 1 to this FOA.

Note: The costs of preparing bids, proposals, or applications on potential Federal and non-Federal awards or projects, including the development of data necessary to support the non-Federal entity's application are not eligible project costs and should not be included in the budget proposal (2 CFR §200.460).

2.3. 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. The types of information to describe in the narrative include, but are not limited to, those listed in the following subsection. Costs, including the valuation of third-party in-kind contributions, must comply with all applicable cost principles contained in 2 CFR §200.

2.3.1. SALARIES AND WAGES

Indicate the Project Manager and other key personnel by name and title. The Project Manager must be an employee or board member of the applicant. Other personnel should be indicated by title alone. For all positions, indicate salaries and wages, estimated hours or percent of time, and rate of compensation. The labor rates must identify the direct labor rate separate from the fringe rate or fringe cost for each category. All Labor estimates must be allocated to specific tasks as outlined in the applicant's technical project description. Labor rates and proposed hours shall be displayed for each task.

The budget proposal and narrative should include estimated hours for compliance with reporting requirements, including final project and evaluation. Please see Section F.3. Program Performance

Generally, salaries of administrative and/or clerical personnel will be included as a portion of the stated indirect costs. If these salaries can be adequately documented as direct costs, they should be included in this section; however, a justification should be included in the budget narrative.

See Contractual rates. The salaries and/or reimbursements of UWCD staff are not included in this budget nor are they anticipated to be a part of it.

2.3.2. FRINGE BENEFITS

Indicate rates/amounts, what costs are included in this category, and the basis of the rate computations. Federally approved rate agreements are acceptable for compliance with this item.

All fringe benefits are fixed rates for billing through engineering and construction contracts.

2.3.3. TRAVEL

Include the purpose of each anticipated trip, destination, number of persons traveling, length of stay, and all travel costs including airfare (basis for rate used), per diem, lodging, and miscellaneous travel expenses. For local travel, include mileage and rate of compensation.

Travel costs will be part of the contracted portion of the project. It is likely that the scope of this project will utilize local consultants and contractors so that travel costs are minimal.

2.3.4. EQUIPMENT

If equipment will be purchased, itemize all equipment valued at or greater than $5,000. For each item, identify why it is needed for the completion of the Project and how the equipment was priced. Note: if the value is less than $5,000, the item should be included under materials and supplies. If equipment is being rented, specify the number of hours and the hourly rate. Local rental rates are only accepted for equipment actually being rented or leased. If the applicant intends to use their own equipment for the purposes of the project, the proposed usage rates should fall within the equipment usage rates outlined by the United States Army Corps of Engineers (USACE) within their Construction Equipment Ownership and Operating Expense Schedule (EQ 1110-1-8) at www.publications.usace.army.mil/USACE-Publications/Engineer-Pamphlets/u43545q/313131302D312D38.

Note: If the equipment will be furnished and installed under a construction contract, the equipment should be included in the construction contract cost estimate.

Equipment will be part of the contracted portion of the project.

2.3.5. MATERIAL AND SUPPLIES

Itemize supplies by major category, unit price, quantity, and purpose, such as whether the items are needed for office use, research, or construction. Identify how these costs were estimated (i.e., quotes, engineering estimates, or other methodology). Note: If the materials/supplies will be furnished and installed under a contract, the equipment should be included in the construction contract cost estimate.

Materials and supplies will be part of the contracted portion of project and will be documented as required. Costs were estimated through an engineer's opinion of probable cost.

2.3.6. CONTRACTUAL

Identify all work that will be accomplished by 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. For each proposed contract, identify the procurement method that will be used to select the consultant or contractor and the basis for selection. Please note that all procurements with an anticipated aggregate value that exceeds the Micro-purchase Threshold (currently $10,000) must use a competitive procurement method (see 2CFR §200.320 – Methods of procurement to be followed). Only contracts for architectural/engineering services can be awarded using a qualifications-based procurement method. If a qualifications-based procurement method is used, profit must be negotiated as a separate element of the contract price. See 2 CFR §200.317 through §200.326 for additional information regarding procurements, including required contract content.

An engineering consultant will be contracted, through the UWCD's procurement process using a qualifications based selection to perform the design and construction engineering for this project. UWCD has already worked with Reclamation and a design consultant to perform preliminary design for permitting and further design and construction of Reach I, which was done in 2016. JDE has assisted in the preparation of the application and a budgetary estimate of time and rates. The selected consultant will prepare bid packages for the project. They will monitor progress during construction to provide quality assurance with plans and specifications. The table below includes the design engineering laborer classifications, billing rates and estimated number of hours. See Appendix A for breakdown of construction items and tasks, which will be utilized for bidding purposes for construction contractors, with a price based selection for qualified contractors to perform the work.

Table 1. Design Engineering Hours & Rates for SSC Project

Role/Position	Rate	Hours	Total
Principal	$160.00	550	$88,000
Senior Project Manager	$150.00	620	$93,000
Project Engineer	$115.00	1100	$126,500
Graduate Engineer	$100.00	1300	$130,000
CAD Technician	$75.00	1300	$97,500
Professional Land Surveyor	$150.00	200	$30,000
Survey Technician	$130.00	780	$101,400
Administrative Assistant	$65.00	450	$29,250
Total		**6300**	**$696,000**

A contractor will be procured to perform the construction tasks on the project.

2.3.7. THIRD-PARTY IN-KIND CONTRIBUTIONS

Identify all work that will be accomplished by third-party contributors, 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. Third-party in-kind contributions, including contracts, must comply with all applicable administrative and cost principles criteria, established in 2 CFR Part 200, available at www.ecfr.gov, and all other requirements of this FOA.

At this time, no third-party in-kind contributions are expected, solely monetary contributions by UWCD. UWCD staff will assume the project upon completion and be instrumental in tracking the performance measures with existing and proposed telemetry and flow measurement devices.

2.3.8. ENVIRONMENTAL AND REGULATORY COMPLIANCE COSTS

Prior to awarding financial assistance, Reclamation must first ensure compliance with Federal environmental and cultural resources laws and other regulations ("environmental compliance"). Every project funded under this program will have environmental compliance costs associated with activities undertaken by Reclamation and the recipient.

To Estimate environmental compliance costs, please contact compliance staff at your local Reclamation Office for additional details regarding type and costs of compliance that may be required for your project. Note, support for your compliance costs estimate will be considered during review of your application. Contact the Program Coordinator (see Section G. Agency Contacts) for Reclamation contact information regarding compliance costs and requirements.

Environmental compliance costs are considered project costs and must be included as a line item in the project budget and will be cost shared accordingly.

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. Environmental compliance costs will vary based on project type, location, and potential impacts to the environment and cultural resources.

How environmental compliance activities will be performed (e.g., by Reclamation, the applicant, or a consultant) and how the environmental compliance funds will be spend, 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.

Costs associated with environmental and regulatory compliance must be included in the budget. Compliance costs include costs associated with any required documentation of environmental compliance, analyses, permits, or approvals. Applicable Federal environmental laws could include

NEPA, ESA, NHPA, 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*

Staff at the local Bureau of Reclamation office were consulted regarding the development of environmental project costs; those general guidelines for developing environmental project costs have been considered in this application's budget (see project budget in Appendix A). Environmental costs were developed by Jones and DeMille Engineering environmental staff after reviewing the locations and scope of the proposed project. JDE environmental staff have extensive experience in NEPA, ESA, NHPA, CWA, and other environmental regulations. This specific project has a very limited environmental component as the NEPA analysis for the entire length of the Steinaker Service Canal easement has been completed and approved, and no permitting with USACE would be needed for the project (see project environmental assessment). The total budget allocated to environmental costs includes $3,000, which only includes environmental coordination for JDE and Reclamation to ensure that the project design and construction are limited to areas analyzed in the environmental assessment.

2.3.9. OTHER EXPENSES

Any other expenses not included in the above categories shall be listed in this category, along with a description of the item and why it is necessary. No profit or fee will be allowed.

Not Included.

2.3.10. INDIRECT COSTS

Indirect costs are costs incurred by the applicant for a common or joint purpose that benefit more than one activity of the organization and are not readily assignable to the activities specifically benefitted without undue effort. Costs that are normally treated as indirect costs include, but are not limited to, administrative salaries and fringe benefits associated with overall financial and organizational administration; operation and maintenance costs for facilities and equipment; and, payroll and procurement services. If indirect costs will be incurred, identify the proposed rate, cost base, and proposed amount for allowable indirect costs based on the applicable cost principles for the applicant's organization. It is not acceptable to simply incorporate indirect rates within other direct cost line items.

If the applicant has never received a Federal negotiated indirect cost rate, the budget may include a de minimis rate of up to 10 percent of modified total direct costs. For further information on modified total direct costs, refer to 2 CFR §200.68 available at www.ecfr.gov.

If the applicant does not have a federally approved indirect cost rate agreement and is proposing a rate greater than the de minimis 10 percent rate, include the computational basis for the indirect expense pool and corresponding allocation base for each rate. Information on "Preparing and Submitting Indirect Cost Proposals" is available from Interior, the National Business Center, and Indirect Cost Services at www.doi.gov/ibc/services/finance/indirect-cost-services. If the proposed project is selected for award, the recipient will be required to submit an indirect cost rate proposal with their cognizant agency within 3 months of award.

Not Included.

3. 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.

Note that the improvements to Federal facilities that implemented through any project awarded funding through this FOA must comply with additional requirements. The Federal government will continue to hold title to the federal facility and any improvement that is integral to the existing operations of that facility. Please see P.L. 111-11, Section 9504(a)(3)(B). Reclamation may also require additional reviews and approvals prior to award to ensure that any necessary easements, land use authorizations, or special permits can be approved consistent with the requirements of 43 CFR Section 429, and that the development will not impact or impair project operations or efficiency.

Because the entire Steinaker Service Canal easement was previously covered under the aforementioned NEPA analysis, it is assumed that the project would not require any NEPA analysis, environmental surveys, mitigation, or permitting. There would be some environmental coordination during the design and construction process to ensure that the project would not impact outside of areas analyzed in the environmental assessment. The construction contractor would be required to prepare and implement a stormwater pollution prevention plan as well as file a Notice of Intent with the Utah Division of Water Quality to gain coverage under the Utah general stormwater permit for construction activities.

4. 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 considered in the evaluation of the proposed project.

Letters of support, if obtained in time for submission, are included in Appendix B.

5. OFFICIAL RESOLUTIONS

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.*

See attached Resolution signed by Todd Thacker, Chairman of UWCD.

RESOLUTION

Resolution No. 20190910B

THE APPLICATION FOR BUREAU OF RECLAMATION
WATERSMART GRANTS: WATER AND ENERGY EFFICIENCY GRANTS
FOA No. BOR-DO-20-F001

FOR

STEINAKER SERVICE CANAL ENCLOSURE PROJECT – REACH III

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;

WHEREAS, the Uintah Water Conservancy District (District) is an Eligible Applicant by virtue of being the sponsoring entity for the Vernal and Jensen Units of the Central Utah Project constructed by the Bureau of Reclamation; and

WHEREAS, the District desires to submit a proposal for funding assistance;

NOW, THEREFORE, BE IT RESOLVED that the District Board of Trustees agrees and verifies that:

1. The District Board of Trustees has reviewed and supports the application submitted;

2. The District is capable of providing the amount of funding and/or in- kind contributions specified in the funding plan;

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; and

4. The District Official signing this document has the legal authority to enter into this agreement.

DATED: 09/10/2019

SIGNED: _____

NAME: R. Todd Thacker TITLE: Chairman, UWCD

ATTEST: _____

NAME: William Merkley TITLE: Secretary/Treasurer

APPENDIX A. PROJECT BUDGET AND SCHEDULE

Uintah Water Conservancy District
Steinaker Service Canal Reach III
October 3, 2019

Jones & DeMille Engineering
Roosevelt: 435.722.8267
www.jonesanddemille.com

Concept Opinion of Probable Cost					
	Item Description	**Quantity**	**Unit**	**Unit Price**	**Total Cost**
Materials + Installation					
	Steinaker Service Canal Reach III				
	72" Diameter Fiberglass Pipe	13,100	FT	$ 690	$ 9,030,000
	Road Crossings	6	EA	$ 100,000	$ 600,000
	Turnouts	8	EA	$ 90,000	$ 720,000
	Loop Undershots	6	EA	$ 16,000	$ 96,000
	Extend/Loop Drainage Inlets	12	EA	$ 6,000	$ 72,000
	Loop Water Main	6	EA	$ 18,000	$ 108,000
	Air Vent/Manway Access	4	EA	$ 35,000	$ 140,000
	Remove and Replace Screening Structure	1	Lump	$ 200,000	$ 200,000
	Drain Structure	4	EA	$ 20,000	$ 80,000
	Install Fiber Optic Conduit	13,100	FT	$ 4	$ 46,000
	Maintenance Road	13,100	FT	$ 15	$ 197,000
	Remaining Appurtenances, Mobilization, and Items not Estimated	10%	Lump	$ 1,129,000	$ 1,129,000
				Material + Installation Subtotal	**$ 12,418,000**
	Contingency (higher contingency to account for construction cost escalation)	12%			$ 1,491,000
				Total Construction	**$ 13,909,000**
Indirect Costs					
	Design: Preconstruction Engineering, Contractor Procurement	5%	Lump	$ 696,000	$ 696,000
	NEPA Compliance	1	Lump	$ 3,000	$ 3,000
	Habitat Replacement (as agreed upon in Salinity application)	5%	Lump	$ 696,000	$ 696,000
	Construction Administration (Construction Management & Observation)	5%	Lump	$ 696,000	$ 696,000
				Subtotal	**$ 2,091,000**
				Total Probable Construction Cost (Materials + Installation + Design)	**$ 16,000,000**
				***Total Project Cost (Steinaker Service Canal Reach III)**	**$ 16,000,000**

* This cost estimate is for the entire Reach III Project. UWCD is exploring the option of breaking Reach III into three separate projects (a,b,& c) depending on available funding. The lengths of these three separate projects are described below.

Reach III Sub-project	Length (ft)	% of total Reach	Estimated Total Project Cost
(a)	4990	38%	**$6,095,000**
(b)	4150	32%	**$5,069,000**
(c)	3960	30%	**$4,837,000**

Uintah Water Conservancy District
Steinaker Service Canal Reach III
October 3, 2019

Jones & DeMille Engineering
Roosevelt: 435.722.8267
www.jonesanddemille.com

Steinaker Service Canal - Reach III

Project Schedule

	FY-2020												FY-2021												FY-2022						
Task	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
Contract Award																															
NEPA Compliance																															
Project Design																															
Award and Mobilization																															
Cultural Resources																															
Project Construction																															
Habitat Mitigation																															
WaterSMART Funding													$66,000												$1,434,000						

Milestone Dates:

February 28, 2021 - **Complete NEPA Compliance**
June 30, 2021 - **Complete design and bidding process**
July 31, 2021 - **Award construction contract**
October 31, 2021 - **Complete cultural resource compliance work**
April 30, 2022 - **Complete Construction**
April 30, 2022 - **Complete habitat mitigation work**

APPENDIX B. LETTERS OF SUPPORT

Utah Department of Agriculture and Food
CONSERVATION & RESOURCE MANAGEMENT

Utah Department of Agriculture and Food
Salinity Control Program Concurrence Letter
For Bureau of Reclamation
2019-2020 Funding Opportunity Announcement
BOR-UC-20-F001

Project Name: **STEINAKER SERVICE CANAL ENCLOSURE PROJECT – REACH III**

Sponsor Submitting Proposal: **Uintah Water Conservancy District**

The Utah Department of Agriculture and Food has reviewed the proposed salinity project and finds that it concurs with the conservation objectives of the State of Utah and its local governmental entities.

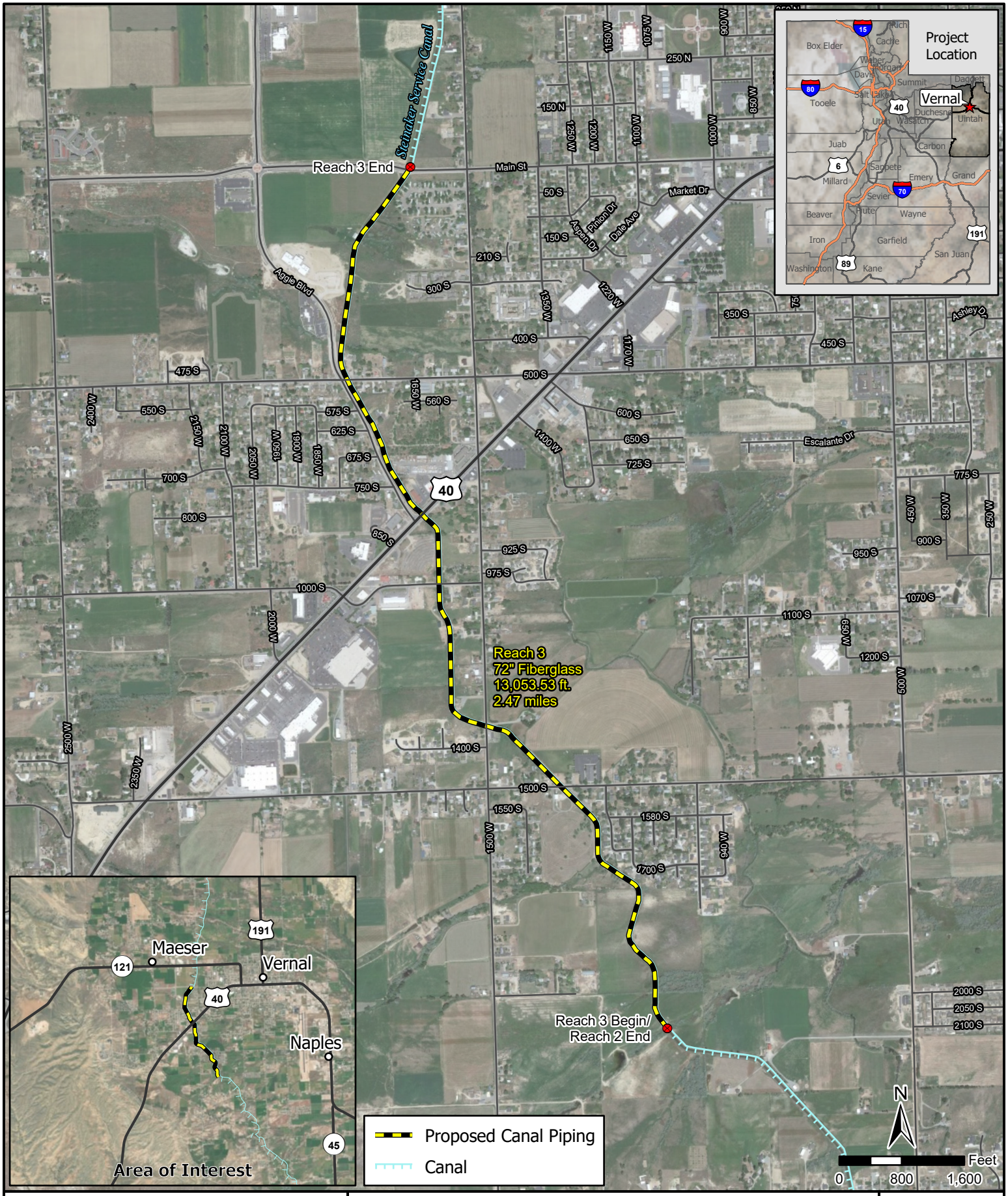
Signature State of Utah Salinity Coordinator

9/5/2019
Date

Comments from Utah Department of Agriculture and Food:

This project is the 3rd phase of a much larger project to pipe the "Service Canal". The project not only provides salinity control but will provide safety to the community from flooding and drowning. With the piping of the this canal almost all of Ashley Valley will have pressurized water delivery to agricultural producers. Irrigators will still need to supplement pressure but will no longer need regulating ponds and other devices to get water from the open canal. Because of the long range planning of this project, funding from various sources has obtained reducing the cost of salinity control for this area. I believe that this is a good project and request that the ARC provide the requested funds for this project.

APPENDIX C. PROJECT MAPS



Jones & DeMille Engineering

- Shaping the Quality of Life -

800.748.5275 www.jonesanddemille.com

Uintah Water Conservancy District		**Uintah County**
Steinaker Service Canal Reach 3 - WaterSMART ***Proposed Canal Piping Project Location Overview***		Scale: 1" = 1,600'
Map Name: C:\Users\User\ShareFile\Shared With Me\2019\UWCD\Steinaker Canal WaterSMART Grants\GIS\Projects\Applications\DEV19_UWCD_Application.aprx - Exh Reach 3 Overview 8.5x11		**1**
Project Number: DEV-19	Drawn by: JEM 09-19	Last Edit: 09/27/2019

APPENDIX D. WATER SAVINGS DATA

Flows and Seepage Loss

Historic Flow and Measured Losses

(From Ashley Creek River Commissioner)

Units: Acre-feet

Year	April	May	June	July	August	September	October	Total	Measured Losses	% Loss
2007	-	3,593	6,668	6,233	6,194	3,028	494	26,210	4,092	15.6%
2008	-	4,272	4,201	6,905	7,018	3,705	856	26,957	3,539	13.1%
2009	-	4,240	3,812	6,782	7,221	3,465	926	26,446	4,600	17.4%
2010	-	4,463	5,437	6,993	6,175	4,160	648	27,876	4,101	14.7%
2011	-	2,940	6,005	5,450	5,702	4,153	1,278	25,528	4,002	15.7%
Total		**26,503**	**32,679**	**45,310**	**45,307**	**24,968**	**4,505**	**179,272**	**26,869**	
Average		3,902	5,225	6,473	6,462	3,702	840	26,603	4,067	15.3%

Note: The historic flows have been calculated in acre-feet. These losses also take into account water allocated through turnouts and other water delivery. The measurments are taken at the intake of the canal and again at the last turnout near the end of the canal.

	2007-11
Total Length of Canal (miles)	**11.2**
Total Length of Canal (ft)	**59136**
Total est. canal loss annually (ac-ft)	**4,067**
Canal loss per mile of canal (ac-ft/mile/year)	**363.1**
Canal loss per lineal ft of canal (ac-ft/ft/year)	**0.0688**

Representative Canal Photos – Steinaker Service Canal Reaches II & III