Bureau of Reclamation WaterSMART Program:
Water and Energy Efficiency Grants for Fiscal Year 2024 ~ R24AS00052

Bostwick Park Water Conservancy District

Shinn Park and Waterdog Pipelines Measurement Improvement and SCADA Integration Project

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FY 2024

Technical Proposal and Evaluation Criteria

Executive Summary

Applicant Info

Date: February 22, 2024

Applicant Name: Bostwick Park Water Conservancy District (BPWCD)

City, County, State: Montrose, Montrose County, Colorado

Project Manager:

Allen Distel, General Manager
Bostwick Park Conservancy District
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Applicant Category: Category A

Project Funding Request: $1,951,470 *Total Project Cost:* $3,902,941

Funding Group: Group II

Project Summary

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

Bostwick Park Conservancy District (BPWCD) provides water services to agricultural users in the remote and mountainous region outside of Montrose in western Colorado. Over many years, BPWCD has planned and implemented several improvement projects to increase its system efficiency and minimize water losses. The *Shinn Park and Waterdog Pipeline Measurement Improvement and SCADA Integration Project* is the next step. It is expected to result in quantifiable water and energy savings, including

- saving 256.2 acre-feet of water, annually,
- generating 26,995 kWh of renewable energy, annually,
- offsetting 27,359 pounds of Carbon Dioxide (CO2), annually.

These savings are realized through reducing: spills, excess deliveries, and fuel consumption. This project will automate turnouts and intake structures, install measurement equipment and a fiber optic line, and integrate the Shinn Park and Waterdog laterals into the District's communication and SCADA system. These improvements will significantly improve BPWCD's system management and allow for real-time responses as needs change within the system.

Length of Time and Estimated Completion Date

State the length of time and estimated completion date for the proposed project. ***Note: proposed projects should not have an estimated construction start date that is prior to December 31, 2024.***

BPWCD has been proactively planning for the implementation of this project. Assuming a notice of funding award and agreement finalization occurs before February 2025, the Environmental and Cultural compliance process will start in February 2025 and be completed by March 2026. Engineering design will occur concurrently from March 2025 to April 2026. Construction is

anticipated to be underway in April 2026 and completed by October 2026. Final reports and project close-out will start in October 2026 and be completed by December 2026.

Federal Facility

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

The project is not directly located on a Federal facility. However, BPWCD is the managing entity of the "Bostwick Park Project" (Constructed by Reclamation in the 1970s). This project receives water from Silver Jack Reservoir, and BPWCD manages water released from Silver Jack Dam, which is a Reclamation facility. This project will support better water source management by BPWCD, allowing water to stay in the Reservoir for longer during the irrigation season. Habitats and recreational opportunities will directly benefit from the improved system response and flexibility, which supports more efficient water usage and conservation.

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}.

Bostwick Park Water Conservancy District's service area is located in the Big Cimarron Valley, the Bostwick Park area, and Shinn Park area near Montrose, Montrose County, Colorado. The Shinn Park and Waterdog Laterals, where this project is located, are on the south side of U.S. 50, east of Montrose, in the Shinn Park area. The coordinates for the division box where the Shinn Park and Waterdog Laterals start are 38°24'58" N 107°41'04" W. See **Attachment A – Project Overview Map**, **Attachment B – Shinn Park Lateral Detail Map**, **Attachment C – Waterdog Lateral Detail Map**, and **Attachment D – Irrigated Lands Detail Map**.

Project Description

Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work. This description should provide detailed information about the project including materials and equipment and the work to be conducted to complete the project. This section provides an opportunity for the applicant to provide a clear description of the technical nature of the project and to address any aspect of the project that reviewers may need additional information to understand.

The Bostwick Park Water Conservancy District (BPWCD) system consists of 73.1 miles of canals and laterals that transport irrigation water from the Cimarron River to the irrigated fields of Bostwick Park, Vernal Mesa, Shinn Park, Waterdog Mesa, and Kinikin Heights. BPWCD is also the operating entity of the Silver Jack Reservoir in the northern San Juan Mountains, with 12,820 acre-feet of active storage (11,320 acre-feet for irrigation, and 1,500 acre-feet for in-stream uses). In an effort to optimize the use of its water resources and provide water security to its stakeholders while limiting impacts on the environment, BPWCD has been committed to the modernization of its system. Recent improvements include the newly installed (as of Spring 2024) Shinn Park and Waterdog Pipelines and the installation and integration of a broadband/microwave tower network for communication to existing SCADA-enabled sites within district boundaries. This project will further these efforts and allow BPWCD to optimally utilize its infrastructure and implement water management efficiencies not available previously.

The Shinn Park and Waterdog Pipelines Measurement Improvement and SCADA Integration Project aims to increase conveyance efficiency in the Cimarron Canal system by both reducing over-deliveries and reducing spills. **An estimated 256.2 acre-feet per year will be saved.** The project will install measurement, automation, communications, and appurtenant solar power equipment at various locations near and along the Shinn Park and Waterdog Pipeline alignments. Ultrasonic measurement equipment will greatly improve the accuracy of deliveries, thereby reducing over-deliveries to users, and will provide a metric by which automation can occur. Automation will allow gates to be adjusted remotely and automatically, reducing spills when changes to the intake rate occur. The ability for remote management and measurement will reduce the man-hours and fuel consumption needed to operate the system and increase system resilience.

Currently, BPWCD has two ultrasonic flowmeters adjacent to the shared intake structure of the Shinn Park and Waterdog Pipelines. In-line butterfly valves, which control flow into the pipelines, are also adjacent. This project will implement automation of each butterfly valve using the existing flow meters and installing gate actuators, programmable logic controllers (PLCs), and soar panels. Pipeline turnouts, which provide water deliveries to users, contain butterfly valves for control, and discharge to open ditches with Parshall flumes. The project will remove the existing flumes, install "clamp-on" style ultrasonic flowmeters at each site, and provide automation via gate actuators and PLCs; solar power will provide for the electrical needs at each site. Automation at all in-line valves within the pipelines will also be included in this project.

Communication equipment will consist of radio towers at the pipelines' shared intake structure and at every turnout of the pipeline. As redundancy is critical to reliable SCADA systems, fiber optic cables will be installed along both alignments and connected to each turnout. BPWCD has already completed some work, including the installation of a buried HDPE conduit along both pipelines, to facilitate the implementation of the fiberoptic line. The cables will connect to an existing fiber optic network near R71 Road on Waterdog Mesa and tie into the microwave tower network on Waterdog Peak. The installation of additional HDPE conduit outside the pipeline alignment will be required to complete the fiberoptic connection.

Evaluation Criteria

Evaluation Criterion A – Quantifiable Water Savings (25 Points)

- *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.*
  Implementation of this project is expected to yield significant water savings, **totaling 256.2 acre-feet per year** in the most conservative estimation.
  This total is derived from the following projected water savings:
  - **215.1 acre-feet per year** due to new and more **accurate measurement equipment**
  - **41.1 acre-free per year** from reduced spills through **automation** of gates

- *Describe current losses: Please explain where the water that will be conserved is currently going and how it is being used. Consider the following:*
  - *Explain where current losses are going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?*
    The Shinn Park and Waterdog laterals were previously open channel canals. BPWCD is finalizing a project to pipe these laterals with funding through BOR's Salinity Reduction Program. Piping is anticipated to be completed in time for the 2024 irrigation season. Water has been lost historically through the earthen canals and spills at the ends of those laterals and turnouts. It is understood that lost water is infiltrating through soils and entering the Uncompahgre and Gunnison Rivers. Both are classified as impaired waters due to high levels of selenium, in part due to irrigation water. While directly reducing/eliminating water loss due to seepage, the pipeline project will still have losses due to over-delivery and operational spills. This water loss will still need to traverse several miles of the dry terrain of the area before returning to the Uncompahgre and Gunnison Rivers.

    This project is the next step in improving water management efficiency. It will reduce lost water and minimize irrigation water's contribution to salinity/selenium levels in the Uncompahgre and Gunnison Rivers.

  - *If known, please explain how current losses are being used. For example, are current losses returning to the system for use by others? Are current losses entering an impaired groundwater table becoming unsuitable for future use?*
    Current losses infiltrate soils and interact with the Mancos Shale formation, which is rich in selenium. This increases the selenium levels of the Uncompahgre and Gunnison Rivers. Elevated selenium levels pose a threat to the health of aquatic life and habitat. There are not any known direct uses of this water.

  - *Are there any known benefits associated with where the current losses are going? For example, is seepage water providing additional habitat for fish or animal species?*
    There are no known benefits associated with the current water losses.

- *Describe the support/documentation of estimated water savings. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.*
  Accurate Measurement Equipment
  Existing measurement equipment along the Shinn Park and Waterdog pipelines includes Parshall Flumes at each turnout (17 in total) and a mainline Badger TFX 5000 Ultrasonic Flowmeter for each pipeline (2 in total). These flumes and flowmeters are manually read by BPWCD employees, and system adjustments are made if necessary.

  The project will install Badger TFX 5000 Ultrasonic Flowmeters at each turnout for more accurate delivery measurements. According to the Bureau of Reclamation Water Measurement Manual (Manual), the free-flow measurement accuracy of a Parshall Flume is +/- 3% to 5%. The Manual further states that imprecision of head measurement due to human error increases the error by 4% to 20%. This implies that the total accuracy of a Parshall Flume could be anywhere from **3.12% to 6%.** By contrast, the measurement accuracy of the

Badger TFX 5000 Ultrasonic Flowmeter is +/- **0.5%** (per the company website) and is not subject to errors from human interpretation.

Water deliveries for the 17 turnouts, per BPWCD records, are approximately **8,212 ac-ft per year** (**1,642 ac-ft** on Waterdog and **6,570 ac-ft** on Shinn Park). If over-deliveries occurred due to flume measurement error, Parshall Flumes could have resulted in, conservatively, **256.2 ac-ft** of excess water delivered. It is historically more likely that over-delivery occurred rather than under-delivery, as frequent under-delivery would have resulted in frequent disputes by water users.

Using Badger TFX 5000 Ultrasonic Flowmeters, over deliveries due to measurement error could be reduced to **41.1 ac-ft** of water. It can be implied, therefore, that BPWCD could realize water savings of at least **215.1 ac-ft per year** by improving measurement. Note that actual water savings could be higher as transit losses associated with the excess water will no longer occur.
(8,212 ac-ft annual delivered water X 3.12% accuracy of Parshall Flume = 256.21 ac-ft of excess water, 8,212 ac-ft annual delivered water X 0.5% accuracy Badger TFX 5000 Ultrasonic Flowmeter = 41.1 ac-ft of excess water, 256.21 ac-ft – 41.1 ac-ft = 215.1 ac-ft saved annually)

Automation
The Shinn Park and Waterdog pipelines both have overflow hydraulic structures at midpoints in their alignments. Most pipeline deliveries take place downstream of the structures on both alignments. Consequently, if there is more water in the pipeline than being taken by turnouts, spills will occur.

The Cimarron Canal headgate (which ultimately supplies the Shinn Park and Waterdog Pipelines) is already automated. Completing this Project will allow for the automation of all gates on the Shinn Park and Waterdog pipelines.

Automation on the Shinn Park and Waterdog pipelines will allow for improved coordination between water brought into the system and the turnout headgates, making mismatches in flow less likely to occur. Conservatively, total spills will likely be reduced by **50 percent.** The inaugural irrigation season for both pipelines has yet to occur, so historic spill volumes are unknown. If spills amount to **1 percent** of total deliveries (likely an underestimation), reducing spills through automation could result in **41.1 ac-ft** of reduced water loss.

(8,212 ac-ft annual delivered water X 1% estimate of spillage = 82.12 ac-ft of spilled water, 82.12 ac-ft estimated annual spillage X 50% reduction from automation = 41.1 ac-ft saved)

Total Water Savings
215.1ac-ft saved through accurate measurement equipment + **41.1 ac-ft** saved through automation = **256.2 ac-ft saved water annually**

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

(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:

- *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*
  Annual water savings from a reduction in over-deliveries have been estimated from conservative measurement inaccuracy estimates. The difference in measurement inaccuracy between the existing Parshall Flumes and the project's proposed flowmeters, the Badger TFX 5000 Ultrasonic Flowmeter, was applied to the annual water deliveries (8,212 ac-ft) of the 17 turnouts to estimate the water savings from over-deliveries.

  Parshall Flume measurement inaccuracy: 3.12% to 6%
  Badger TFX 5000 Ultrasonic Flowmeter inaccuracy: +/- 0.5%
  Shinn Park and Waterdog Laterals annual delivered water: 8,212 ac-ft
  *(3.12% - 0.5%) * 8212 ac-ft = 215.2 ac-ft of water savings)*

- *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.*
  Historic spill volumes have not been recorded by BPWCD. Conservatively, total spills have been estimated at 1 percent of total deliveries. This amount is estimated to be reduced by 50 percent through the benefits of an automated system that can respond in real time.

  *(1%*8212 ac-ft) - (50%*8212 ac-ft) = 41.1 ac-ft water saved*

- *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?*
  Deliveries are measured by Parshall Flumes at each of the 17 turnouts. The free-flow measurement accuracy of a Parshall Flume is +/- 3% to 5%, and imprecision of head measurement due to human error increases the error by 4 percent to 20 percent. This implies that the total accuracy of a Parshall Flume could be 3.12 percent to 6 percent. The accuracy estimates come from the Bureau of Reclamation's "Water Measurement Manual."

- *Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for the accuracy.*
  Badger TFX 5000 Ultrasonic Flowmeters will be installed at each turnout to replace the Parshall Flumes for delivery measurement. The manufacturer's website reports a measurement accuracy of +/- 0.5% for the flowmeters. Dynasonics | TFX-5000 Ultrasonic Clamp-On Meter | Badger Meter

- *Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?*
  Yes, delivery volumes will be reduced by approximately 215.2 ac-ft due to the improved accuracy of the measurement equipment. The headgate automation will provide

significantly increased efficiency and allow users to receive timely deliveries of their allotted water.

Parshall Flume measurement inaccuracy: 3.12% to 6%
Badger TFX 5000 Ultrasonic Flowmeter inaccuracy: +/- 0.5%
Shinn Park and Waterdog Laterals annual delivered water: 8,212 ac-ft
*(3.12% - 0.5%) * 8212 ac-ft = 215.2 ac-ft of water savings*

- *How will actual water savings be verified upon completion of the project?*
  Actual water savings will be verified through a comparison of the total amount of water taken into both pipelines (Shinn Park and Waterdog) before and after project implementation. Mainline flowmeters are currently on both pipelines, and it is expected that these mainline flowmeters can collect two seasons of data prior to the SCADA Project implementation, establish a baseline, and continue to collect data thereafter. Measurements taken by the mainline flowmeters should help quantify total actual water savings, both through reduced spills and over-deliveries.

Evaluation Criterion B – Renewable Energy (20 Points)

Subcriterion No. B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery

Describe the amount of energy capacity. *For projects that implement renewable energy 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.*
This project will utilize solar power at each turnout and the intake structure to provide the necessary power for the automation, measurement, and communication equipment. 315-watt 48-volt solar Panels, with a total of 138 panels (6 per turnout/inline BFV and 24 at the intake structure) will be implemented. These panels will produce **43.47 kW** of power amounting to 26,995 kWh per year. BPWCD will be able to improve the efficiency of its system and minimize environmental impacts.

*0.315 kW/panel * 138 panels = 43.47 kW capacity*

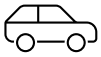
Describe the amount of energy generated*. For projects that implement renewable energy systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate. Please explain how the power generated as a result of this project will be used, including any existing or planned agreements and infrastructure.*
The project will install 138 panels on the Shinn Park and Waterdog Laterals capable of producing 43.47 kW of power. Colorado has peak sun hours between 5 and 7 hours per day, system losses are estimated to be 25 percent, and the irrigation season is 138 days per year. With these assumptions, it is estimated that these panels will generate **26,995 kWh per year**. Generated energy will be used to power measurement, automation, and communication equipment at various locations near and along the Shinn Park and Waterdog alignments. Equipment includes gate actuators, Programmable Logic Controllers (PLSs), ultrasonic flowmeters, and communication radios.

*43.47 kW * 0.75 * 6 hrs/day * 138-day season = 26,995 kWh per year*

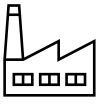
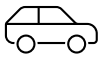
Describe any other benefits of the renewable energy project: *Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including:*

- *How the system will combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*
  The proposed solar project provides significant environmental, economic, and social benefits beyond powering irrigation automation, measurement, and communication. Its ability to generate clean energy is estimated to offset an estimated 25,745 pounds of Carbon Dioxide (CO2) each year, adding up to an impressive 643,625 pounds of CO2 over the panel's useful life of 25 years. The EPA's Greenhouse Gas Equivalencies Calculator indicates that this offset is equivalent to –

  Per year:

   Burning **13,081** pounds of Coal  Driving **29,937** auto miles  Planting **193** trees

  Over the useful life of the solar panels (25 years):

   Burning **327,025** pounds of Coal  Driving **748,425** auto miles  Planting **4,825** trees

- *Expected environmental benefits of the renewable energy system*
  Slowing the pace of climate change, preventing the worst expected impacts, and adapting to changes that cannot be prevented are the most significant environmental management challenges society has faced. Investments in renewable energy will benefit residents, businesses, and the environment. Even small changes can make a big difference when applied year after year. Reducing greenhouse gas emissions is anticipated to benefit the environment by decreasing temperatures. This, on its own, can make a significant impact on the severity of drought conditions, level of snowpack, and agricultural yield.

- *Any expected reduction in the use of energy currently supplied through a Reclamation project*
  Reclamation generates hydropower at Silver Jack Dam through Reservoir releases. While the project is expected to reduce total irrigation demand (through improved system efficiencies), Silver Jack will still likely empty its active storage annually. The project, therefore, should not impact hydropower production at Silver Jack Dam.

- *Anticipated benefits to other sectors/entities*
  Another benefit that will be realized by reducing the number and frequency of trips to manually adjust gates is savings of approximately 220 hours of employee time. These saved hours can be better allocated toward making operational and efficiency improvements along the ditch system.

- *Expected water needs, if any, of the system*
  No additional water will be required to operate the solar panels or implement the SCADA system.

Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

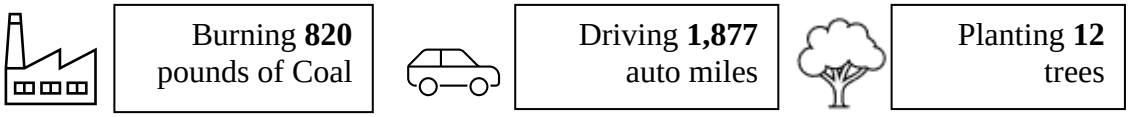
Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

- *If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.*
  This project will reduce the time, energy, and money spent to manually adjust gates and monitor the Shinn Park and Waterdog laterals. BPWCD employees have historically had to make daily trips to make the necessary adjustments to ensure that users receive their water allotment during the irrigation season. This project will automate gates and integrate SCADA systems, allowing for remote and efficient management of these laterals. Savings will be realized in miles traveled, gasoline consumed, decreased CO2 pollutants released, and man-hours saved. Employees drive 23.88 miles per day to make manual adjustments and 3,295.44 miles total over the 138-day irrigation season. Once completed, trips will be reduced by 50 percent, reducing driving by 1,647.72 miles each season and saving 220 hours of employee time. The reduction in total energy through conserved gasoline is expected to save approximately 2765 kWh per year (assuming 33.56 kWh per gallon of gasoline).

- *How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*
  The existing Shinn Park and Waterdog headgates are remote and require daily adjustments to maintain operational efficiency. Adjustments are made manually by an on-site employee using BPWCD owned pickups. Daily trips to adjust these headgates total 15.34 miles round trip plus 8.54 miles to access the laterals from the Hairpin Canal and Vernal Mesa Canal split. Once the solar power supported SCADA system is enabled, required trips along the alignments will be cut in half (conservatively). Assuming a 20-mile-per-gallon fuel efficiency, fuel consumption will be reduced by approximately 83 gallons over the course of a 138-day irrigation season.

  15.34 + 8.54 miles daily for adjustments = 23.88 miles per day,
  23.88 miles x 138 day irrigation season = 3,295.44 total miles,
  3,295.44 / 20 miles per gallon = 164.77 gallons of fuel per irrigation season,
  164.77 gallons / 50% reduction in required trips = 82.386 gallons saved.

This portion of the project will offset approximately **1,614** pounds of CO2 per year. Western Colorado is directly experiencing the impacts of climate change and has been warming about twice as fast as the global average in recent decades. This warming trend is projected to continue. As temperatures have increased, residual effects have led to decreases in snowpack and river flow, drought conditions, and increased risk of wildfire. Decreasing the amount of greenhouse gasses produced positively contributes to the local and regional efforts to combat climate change. Offsetting **1,614** pounds of CO2 is equivalent to, per year:



- *If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?*
  The Shinn Park and Waterdog alignments are gravity-fed. There will be no changes or impacts related to pumping.

- *Please indicate whether your energy savings estimate originates from the point of diversion or whether the estimate is based upon an alternate site of origin.*
  The estimated 23.88 mile daily round trips, to make adjustments, run along the Shinn Park and Waterdog laterals and begin at the Hairpin Canal and Vernal Mesa Canal split.

- *Does the calculation include any energy required to treat the water, if applicable?*
  No

- *Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.*
  This project will incorporate these laterals into the SCADA system and reduce the need for daily trips to manually adjust gates during the irrigation season. Employees are estimated to drive 23.88 miles per day and 3,295.44 miles per season. Once implemented, it's conservatively estimated that trips will be cut by 50 percent, reducing miles driven by 1,647.72. Assuming a 20-mile-per-gallon fuel efficiency, fuel consumption will be reduced by 83 gallons over the 138-day irrigation season.
  The following are the assumptions made:

  - 20 mile per gallon fuel efficiency for a pickup truck
  - $2.72 per gallon (February 8, 2024, from AAA)

  Gasoline cost savings: $225.76
  1,647.72 miles / 20 mpg = 83 gallons of gas x $2.72 cost per gallon = $225.76 in savings

  Pollution Savings:1,614 pounds of CO2 (based on the EPA's Greenhouse Gas Equivalencies Calculator)

- *Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).*
  No other renewable energy components are planned at this time.

Evaluation Criterion C – Other Project Benefits (15 Points)

Resilience and Sustainability Benefits:

Will the project address a specific water and/or energy sustainability concern? Please address the following:

- *Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:*

  - *Describe recent, existing, or potential drought or water scarcity conditions in the project area.*
    Montrose County, Colorado, has experienced ongoing drought conditions since 2000. Conditions have been particularly severe and persistent within the last six years, including the Governor of Colorado declaring a state of emergency for the County in July of 2021. While 2023 brought much needed snow and moisture to Western Colorado, it did not resolve the long-term ongoing issues related to drought in this region.

  - *Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?*
    Yes, the project area is in an area that has historic and current drought conditions. Information from the US Drought Monitor indicates that Montrose County has almost consistently, year-to-year and month-to-month, documented some level of drought since July 2017 (see *Figure 1: Montrose County Drought Conditions 2017 - 2023* below).

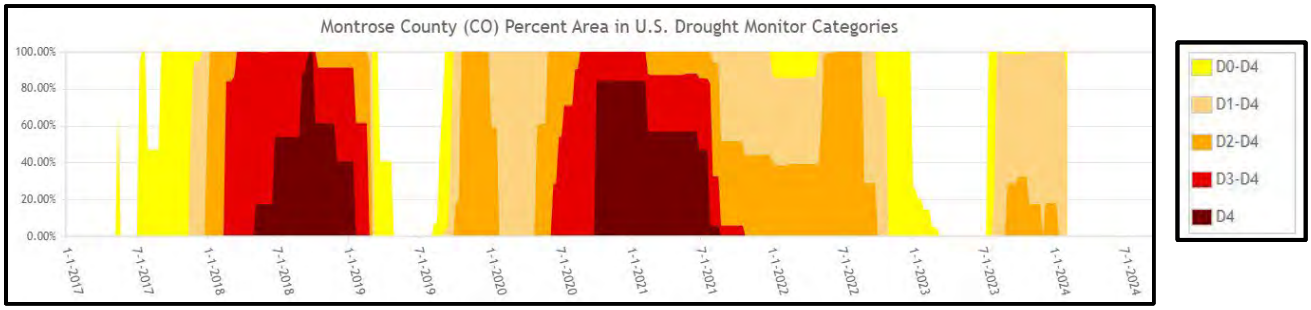


Figure 1: Montrose County Drought Conditions 2017 - 2023

Drought conditions for Montrose County, as documented by Drought.gov, indicate that 84.2 percent of people in the county are affected by drought. It also notes that 25,61 acres of hay are currently impacted by drought.

- *Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate informed analysis, if available).*
  It is difficult to definitively project the perseverance of drought conditions. However, average temperature increases have been documented throughout the United States, and in particular, Western Colorado. Starting in 2000, the Upper Colorado Basin has been two degrees Fahrenheit warmer than the 20th-century average. At this time, it is expected that this warming trend will continue. Warmer temperatures strongly correlate with lower precipitation and, therefore, continue persistent drought.

- *Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.*
  Like in many communities, the biggest impact on energy sustainability in this region is infrastructure based on the use and access to fossil fuels. Gasoline for vehicles and coal for power plants are ingrained in the way of life and business. Reliance on fossil fuels has been the foundation of energy for decades. However, to be more energy efficient and mitigate climate change, many entities have taken it upon themselves to implement sources of renewable energy that can be utilized instead of fossil fuels.

- *Please describe how the project will directly address the concern(s) stated above.*
  This project directly addresses issues related to reliance on fossil fuels. BPWCD is implementing solar panels to provide the power needed to run the automation, measurement, and communication equipment being implemented on the Shinn Park and Waterdog Laterals. These changes allow for remote, real-time adjustments to the system, which will result in fewer miles driven to manually make adjustments, therefore reducing reliance on fossil fuels.

- *Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?*
  Yes, this project will have a significant impact on the efficient management of the water supply. Currently, BPWCD must manually adjust all gates within these laterals, leading to delays in response and contributing to spills and over-delivery. Once the gates within the Shinn Park and Waterdog laterals have automation, SCADA, and remote communication capabilities, BPWCD can respond almost instantly to the needs within its system. Water will be measured and delivered more accurately. Changes in the system that could take days to adjust can be made in real time, allowing for needed system flexibility and resiliency.

- *Please address where any conserved water as a result of the project 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.*

    - *Indicate the quantity of conserved water that will be used for the intended purpose(s).* This project is projected to save, conservatively, 256.2 acre-feet from improved water efficiencies through automation and SCADA. BPWCD can make adjustments instantaneously, matching inflow and outflow, and reducing spills. In turn, this allows for better management of releases from Silver Jack Reservoir and will lead to less excess water being released. During the early to mid-irrigation season, more water will stay in the Cimarron River. In the late irrigation season, more water will be kept in Silver Jack Reservoir. Reducing water loss improves late-season water availability for BPWCD. The intended purposes of this water are for agricultural use and maintaining the water sources these supplies are drawn from.

    - *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*
      During the early season, water conserved by project implementation will not be diverted at the Cimarron Canal headgate (operated by BPWCD) allowing it to remain in-stream. Late season water will remain in Silver Jack Reservoir until it is needed for it's intended use. Since there are no diversions between the Cimarron Canal Headgate and Silver Jack Reservoir (and BPWCD control both pieces of infrastructure), no special administrative mechanisms will be needed to "shepherd" the conserved water for its intended use.

- *Will the project assist States and water users in complying with interstate compacts?*
  Yes, by allowing more water to stay in the Cimarron River, more water will be available for other users (including Lower Basin states), reducing the likelihood of a compact call being made on the Colorado River.

- *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*
  Water in the Western United States has a long and contentious history. Ongoing drought conditions contribute to concerns about water availability and increases pressure on water resources. Montrose and the surrounding region have a strong agricultural economy, making it particularly vulnerable to water scarcity issues and potential conflict over water. This project will help prevent water-related crises and conflict as it will use water more efficiently, to the benefit of agricultural users, as well as for ecological and recreational outcomes.

Ecological Benefits:

In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that that result in ecological benefits, through this

section and other sections above, consistent with the SECURE Water Act. Please provide information regarding how the project will provide ecosystem benefits, including the following:

- *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 or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).*

  Several endangered or threatened species exist in the Gunnison River Basin, where the Silver Jack Reservoir is located. These include:

  - *Humpback Chub:* First listed as an endangered species in 1967, it is currently listed as Federally Endangered and State Threatened.
  - *Bonytail:* On both the Federal and state endangered lists in 1980.
  - *Colorado Pikeminnow*: Federally listed as endangered in 1967.
  - *Razorback Sucker:* Listed as Critically Endangered in 1991.

  Each of these species has a recovery plan under the Endangered Species Act (ESA) There are also native fish species in the Cimarron River Basin, designated by Colorado Parks and Wildlife as Aquatic Sportsfish Management Waters. Native fish species include:

  - *Bluehead Sucker*
  - *Colorado River Cutthroat Trout*

  While there are no known occurrences of any federally listed species in the proposed project area, it is anticipated that the benefits resulting from this project, which will leave more water in the Cimarron River and Silver Jack Reservoir, may impact these species. Allowing more water to stay in these water bodies can make a positive impact on watershed health. These potential benefits include:

  - Adequate vegetation and habitat for wildlife and fish
  - Increased likelihood of water temperatures capable of supporting a cold-water fishery
  - A balanced ecosystem that supports fish populations and reduces the risk of algae blooms
  - Improved water distribution

- *Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels, recreational benefits, etc.).*

  Yes, it is anticipated that more water will be able to remain in the Cimarron River and Silver Jack Reservoir after the implementation of this project. Using water resources more efficiently allows for the release of less water into the irrigation system. This water can then stay in Silver Jack Reservoir, which provides additional recreation opportunities for those who fish and recreate on these water bodies. The stored water can be used to supplement late-season irrigation (which amounts to ~80 cubic feet per second (cfs) daily) or can be used to supplement in-stream flow in the Cimarron River. Due to the depth and altitude of Silver Jack Reservoir, water remains cold throughout the summer,

which supports lower water temperatures to the potential benefit of native and endangered species in the Cimarron River and Gunnison Rivers. If used for irrigation, the additional water would allow for an additional 1.6 days of irrigation. If used to supplement flows in the Cimarron (approximately 15 cfs below Bostwick Park's diversion), the additional water could provide over eight additional days of lower water temperatures for the river's cold water fish.

- *Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?*
  There are anticipated benefits to endangered and native species in the watershed. However, it is not clear what specific direct impact will be made and the ability to improve the species' status.

- *Please describe any other ecosystem benefits as a direct result of the project.*
  N/A

Climate Change:

E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.

- *Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?*
  As noted above, Montrose County has been impacted for decades by drought conditions exacerbated by climate change. Improvements in managing agricultural water will provide a more resilient water supply for future years. The planned infrastructure improvements of automation and SCADA will allow BPWCD to more accurately manage and release less water from Silver Jack Reservoir. Additional water left in the Reservoir supports increased resilience as that water becomes available for future use and benefits to recreation and the environment. As more water remains in the Reservoir, water supplies become more stable and reliable. Being able to accurately track water use supports BPWCD to optimize its water management process and reduces demand on water supplies.
  Additionally, as BPWCD implements solar panels to manage the electrical needs for the automated gates and SCADA system, there will be a reduction in greenhouse gas emissions as the need to use vehicles to make manual adjustments will decrease.

- *Does the project seek to improve ecological resiliency to climate change?*
  This project primarily aims to improve water management and efficiency in agriculture; however, having secure and stable water supplies is critical when providing water services. By using only the water necessary for agricultural needs and reducing spills and over-allocation, it is anticipated that more water will remain in Silver Jack Reservoir. This will support the ecological resiliency of the Reservoir and the habitats and species that depend on this water source. Additionally, as noted previously, the depth and altitude of the Reservoir allow its waters to stay cold throughout the summer and would be

expected to support the ecological resiliency of the cold-water fisheries in the Cimarron and Gunnison Rivers.

- *Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?*
  As previously noted, the primary goal of the project is to improve system efficiency. In addition, this project will mitigate and improve air pollution as fewer miles will need to be traveled to manually adjust gates on the Shinn Park and Waterdog laterals. Incorporating solar panels also reduces the demand for fossil fuels that would otherwise be required to provide the electrical needs for automation and SCADA.

- *Does the proposed project include green or sustainable infrastructure to improve community climate resilience?*
  Yes, this project will utilize solar panels to provide the power to operate the automation, measurement, and communication along the Shinn Park and Waterdog Laterals. These panels will create 43.47 kW of power and provide 26,995 kWh per year. With the implementation of this renewable power source, BPWCD will be able to reduce environmental impact throughout the irrigation season.

- *Does the proposed project contribute to climate change resiliency in other ways not described above?*
  N/A

Evaluation Criterion D—Disadvantaged Communities, Insular Areas, and Tribal Benefits (15 points)

Disadvantaged Communities

- *If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?*
  BPWCD is based in Montrose, Colorado, where several census tracts are documented as disadvantaged on the Climate & Economic Justice Screening Tool. These include tract numbers 08085966503, 08085966300, and 0808596601 (see *Figure 2: Disadvantaged Census Tracts – Montrose, Colorado* below). The population of Montrose, as of the 2020 census, is 20,291. Some of the challenges for residents in these census tracts include:
  - Low Income, 75th percentile (average)
  - High Housing costs, 57th percentile (average)
  - Less than a High School Education, 15 percent (average)
  - Linguistic Isolation, 80th percentile (average)
  - Unemployment, 61st percentile (average)
  - Diagnoses of Asthma, 66th percentile (average)

Opportunities for local residents often center around agriculture. This sector provides job opportunities and supports other adjacent businesses in the region. In areas with higher rates of linguistic isolation and less than a high school education, there is an increased need and demand for job options often provided in the agricultural industry. The proposed project supports these disadvantaged communities by supporting agriculture to continue operating in this region. When agricultural producers have a reliable and resilient water supply, they can confidently contribute to the local economy through job access and opportunities.

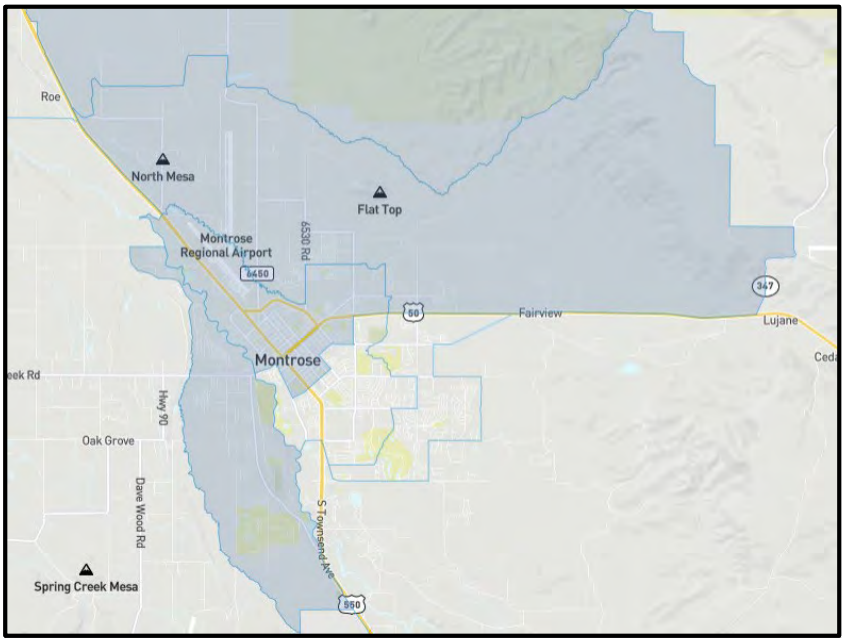


Figure 2: Disadvantaged Census Tracts – Montrose, Colorado

In addition to employment directly in agriculture, this industry supports other businesses. Workers in local restaurants, stores, parks, and other sectors depend on a robust local economy and the tourism that outdoor recreational activities bring in through fishing, hunting, and camping.

Tribal Benefits

The Department is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum, Tribal Consultation and Strengthening Nation-to-Nation Relationships, asserts the importance of honoring the Federal Government's commitments to Tribal nations. Address the following, if applicable:

- *Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?*
  This project does not directly serve or benefit a Tribe.

- *Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?*
  No.

- *Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, increased renewable energy, or economic growth opportunities? Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?*
  No. This project does not directly support tribal resilience to climate change, drought impacts, or other Tribal benefits.

Evaluation Criterion E—Complementing On-Farm Irrigation Improvements (8 points)

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.*
    No on-farm improvement projects are currently planned on the fields supplied by this project. However, numerous landowners have expressed interest in constructing on-farm improvements. A significant amount of acreage in the area is supplied by the Shinn Park and Waterdog laterals are currently using sprinkler irrigation from ongoing 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?*
    Numerous landowners have already had efficient irrigation systems installed using NRCS assistance. Landowners who have not made these changes have expressed interest in receiving assistance.

  - *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.*

Landowner Name	Area
Santa Rosa	330.85
Lazy A Corp	1.93
Kinikin Investments LLC	45.93
Roger Prock	7.62
Amac LLC	27.31
Mike and Kimberly Bolling	138.24
Bull Enterprises Inc	385.0
Bruce and Threasa Leben	28.42
Jerry and Andrea Lowe	23.33
Mike and Carolie Ancel Family Trust	7.26
Zackary and Jennifer Prock	24.75
Freeman Land Trust	25.70
Richard and Cindy Freeman	18.1
Kinikin Partnership LLLP	21.06
Steve and Diane Downs Family Trust	174.36

- *Applicants should provide letters of intent from farmers/ranchers in the affected project areas.*
  See **Attachment E – On-Farm Signature Form**

- *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.*
    This proposed WaterSMART project provides accurate measurement at each point of delivery along the laterals. This is one less expense needed in the installation of an on-farm project. Additionally, the flowmeters are capable of assisting in any on-farm automation that will occur as part of irrigation improvements. The convenience and utility of the proposed flowmeters combined with the recently piped laterals' clean and often pressurized water will make on-farm projects in the area significantly more practical.

OR

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

- *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.*
    Estimates are not currently available.

- *Please provide a map of your water service area boundaries. If your project is selected for funding under this NOFO, this information will help NRCS identify the irrigated lands that may be approved for NRCS funding and technical assistance to complement funded WaterSMART projects.*
  See **Attachment D – Irrigated Lands Detail Map** and **Attachment A – Project Overview Map**

Evaluation Criterion F—Readiness to Proceed (8 points)

Applications that include a detailed project implementation 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.

- *Identify and provide a summary description of the major tasks necessary to complete the project. Note: Do not repeat the more detailed technical project description provided in Section D.2.2.2 Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.*
  The project start date of February 2025 is based on an award notice of December 2024 and agreement finalization in February 2025. Work related to environmental and cultural compliance will begin in Spring 2025 and is expected to be completed in March 2026. Engineering design will kick off in March 2025, running concurrently with the environmental and cultural compliance, and be completed by April 2026. Construction of the project will begin in April 2026, including major milestones such as mobilization, equipment installation, fiber optic installation, and SCADA integration occurring in May 2026, July 2026, August 2026, and October 2026, respectively. Construction completion and project closeout is expected in October 2026

- *Describe any permits that will be required, along with the process for obtaining such permits.*
  No permits are anticipated.

- *Identify and describe any engineering or design work performed specifically in support of the proposed project.*
  All turnouts on the new pipelines have been designed to accommodate the flowmeters, including valve and air vent placement, and configurations that result in full pipe flow for measurement.

- *Describe any new policies or administrative actions required to implement the project.*
  No new policies or administrative actions will be required. Operational procedures will likely change upon project implementation.

- *Describe the current design status of the project. If additional design work is required prior to construction, describe the planned process and timeline for completing the design work.*
  SCADA design and site Civil work have not yet begun on the project. The duration of this work, however, is not anticipated to be longer than that required for the Environmental Assessment. As such, design will occur concurrent with required NEPA work and will not impact the implementation of the project.

- *Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete). Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation regional or area office?*

Tasks	Milestones	Estimated Start Dates	Estimated Completion Dates
Funding	Notice of funding award Contract finalized	October 2024 November 2024	October 2024 February 2025
NEPA/Cultural Compliance	NEPA kick-off Complete environmental fieldwork Environmental Assessment and FONSI issued	February 2025 February 2025 July 2025	February 2025 July 2025 March 2026
Engineering Design	Design kick-off Final design complete	March 2025 April 2025	March 2025 April 2026
Construction*	Project bidding Mobilization Site Preparation and Equipment Installation Fiber optic installation and connection SCADA Integration Construction closeout	April 2026 April 2026 May 2026 July 2026 August 2026 October 2026	April 2026 May 2026 July 2026 August 2026 October 2026 October 2026
Final Reports and Project Close-out		October 2026	December 2026

*Construction to occur outside of the Gunnison Sage-grouse lekking season

Discussions about the level of NEPA compliance required (i.e., an Environmental Assessment) were had with the area office. The timeline is based on recommendations from environmental consultants who have executed EAs in the area and are familiar with the required process and consultations.

Evaluation Criterion G—Collaboration (5 points)

*Up to **5 points** may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.*

Please describe how the project promotes and encourages collaboration. Consider the following:

- *Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?*

  BPWCD previously developed a SCADA Master Plan and Feasibility Study (October 2018), which included aspects of this project. Additionally, this area was included in a Watershed Plan associated with the Lower Gunnison Regional Conservation Partnership Program (NRCS-RCPP), which also addressed environmental issues.

  The district has worked with various stakeholders for various projects over many years. Some of these include watershed groups, canal companies, and water users. BPWCD collaborates with a variety of stakeholders to support the efficient and sustainable use of water sources in the region. The district has worked with Trout Unlimited on

improvements to fish habitats. Three groups in particular have expressed support for this project. These include:

- Cimarron Canal & Reservoir Company
- Cimarron Valley & River Watershed Coalition
- Colorado River District

See **Attachment F – Letters of Support**

- *What is the significance of the collaboration/support?*
  BPWCD's Board is comprised of many shareholders and other water entities that participate in developing and updating their plans.

- *Will this project increase the possibility/likelihood of future water conservation improvements by other water users?*
  The implementation of this project will directly support any water users along these alignments who are interested in improving their water efficiency. As BPWCD works with other water providers and stakeholders in the region, they can provide information and support for others interested in improving water use practices and conservation efforts.

- *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*
  This project primarily benefits agricultural users. However, there are also benefits to those who recreate at Silver Jack Reservoir or on the Cimarron River.

- *Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).*
  See **Attachment F – Letters of Support**

Evaluation Criterion H – Nexus to Reclamation (4 Points)

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider the following:

- *Does the applicant have a water service, repayment, or O&M contract with Reclamation?*
  Yes, BPWCD is the contracting entity for operation and maintenance of Silver Jack Dam and Reservoir and the Bostwick Park Project. 11,320 acre-feet is allocated to BPWCD for irrigation.

- *If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?*
  N/A

- *Will the proposed work benefit a Reclamation project area or activity?*
  The project is not directly located on a Federal facility. However, this project will support better water source management by BPWCD allowing for water to stay in the Reservoir for longer periods during the irrigation season. Habitats and recreational opportunities will directly benefit from the improved system response and flexibility, which supports more efficient water usage and conservation.

- *Is the applicant a Tribe?*
  No, BPWCD is not connected to and does not represent a Tribe.

Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure, see Appendix A: Benefit Quantification and Performance Measure Guidance.

Performance will be measured by comparing the amount of water delivered to the start of each pipeline before and after project implementation. The current piping project will result in the installation of flowmeters (with totalizers) on each pipeline. It is likely that approximately 2-3 seasons of delivery will occur after pipeline construction is completed but before SCADA is implemented. It is assumed that crop demands will remain relatively constant (as crop type and acreage are not expected to change), so the total flows measured after project implementation should reflect water savings that are the result of reduced over-delivery and spills.

Budget Narrative

See **Attachment G – Budget Detail and Narrative**

Environmental and Cultural Resources Compliance

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

Impacts will be those associated with placing automated gates, measurement equipment, communications lines (fiber optic), and solar power equipment in an existing pre-disturbed right-of-way. The proposed project improvements will occur within the existing easements, beneath County roads, along the Shinn Park and Waterdog alignments. Minimal impacts are anticipated.

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?

BPWCD is not aware of any impacts.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.

The district is not aware of any impacts.

When was the water delivery system constructed?

The system was originally constructed from 1966 to 1971. Many improvements have been made over the years, including the ongoing piping project.

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.
This project will install fiber optic lines, SCADA equipment, radio equipment, and solar panels and will result in minimal modifications to the newly installed (Spring 2024) pipeline.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.
N/A

Are there any known archeological sites in the proposed project area?
BPWCD is not aware of any archeological sites in the project area.

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. This project does not require the relocation of any residences or businesses and is not anticipated to put a strain on the local workforce, businesses, or other resources.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?
No.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?
No

Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.
This project will not require any additional permitting.

Overlap or Duplication of Effort Statement

No other applications have been submitted or will be submitted for this project to request federal funding.

Conflict of Interest Disclosure Statement

There is no actual or potential conflict of interest at the time of submission.

Uniform Audit Reporting Statement

BPWCD will be submitting a Single Audit report for 2023, it is not yet available in the Federal Audit Clearinghouse.

Certification Regarding Lobbying

Please see the GG Lobbying Form V1.1 Certification Regarding Lobbying.

Letters of Project Support and Letters of Partnership

See **Attachment F – Letters of Support**

CIMARRON CANAL & RESERVOIR COMPANY

400 South 3rd Street, Montrose, CO 81401

Phone (970) 249-8707

February 07. 2024

Mr. Allen Distel, President
Bostwick Park Water Conservancy District
400 South 3rd Street
Montrose, Colorado 81401

Dear Allen,

Cimarron Canal and Reservoir Company is pleased to write in support of Bostwick Park Water Conservancy District's (BPWCD) application being submitted to the Bureau of Reclamation's WaterSMART: Water and Energy Efficiency Grant program. We appreciate BPWCD's efforts to install automated gate stations and SCADA within its system to improve efficiency and decrease water loss.

Cimarron Canal and Reservoir Company recognizes the importance of water conservation and its critical role in responding to and preparing for drought. Improving the efficiency of BPWCD's system will benefit regional water users, reduce greenhouse gas emissions, and improve water management.

The Canal company co-owns the canal easements.

The SCADA System and Automation will reduce the operating costs for the canal system and greatly improve the control of the deliveries as the canal changes flow rates.

This addition to the already in place network will add redundancy to our system to ensure that the system will always be able to operate in any weather condition.

We support this grant application and appreciate the advancements it will make in managing valuable water resources.

Sincerely,

Allen Distel

Allen Distel
President
Cimarron Canal and Reservoir Company

Cimarron Valley
& River Watershed Coalition

CVRWC.ORG

February 07. 2024

Mr. Allen Distel, President
Bostwick Park Water Conservancy District
400 South 3rd Street
Montrose, Colorado 81401

Dear Allen,
Cimarron Valley and River Watershed Coalition is pleased to write in support of Bostwick Park Water Conservancy District's (BPWCD) application being submitted to the Bureau of Reclamation's WaterSMART: Water and Energy Efficiency Grant program. We appreciate BPWCD's efforts to install automated gate stations and SCADA within its system to improve efficiency and decrease water loss.

Cimarron Valley and River Watershed Coalition recognizes the importance of water conservation and its critical role in responding to and preparing for drought. Improving the efficiency of BPWCD's system will benefit regional water users, reduce greenhouse gas emissions, and improve water management.

Even though the project area is out of the prescribed area for the Cimarron Valley and River Watershed Coalition we feel that it is important to support efforts to conserve as much water as possible by the Bostwick Park Water Conservancy District and the Cimarron Canal and Reservoir Company. The water they deliver is imported from the Cimarron Watershed therefore we support these efforts to leave as much water as possible in the watershed.

We support this grant application and appreciate the advancements it will make in managing valuable water resources.
Sincerely,

Allen Distel

Allen Distel
President
Cimarron Valley and River Watershed Coalition

COLORADO RIVER DISTRICT

PROTECTING WESTERN COLORADO WATER SINCE 1937

February 14, 2024

Via electronic mail
Bureau of Reclamation
ATTN: Mr. Josh German
PO Box 25007
Denver Federal Center
Denver, CO 80225-0007

RE: Support Letter: Bostwick Park Water Conservancy District's Shinn Park and Waterdog Pipelines Measurement Improvement and SCADA Integration Project

Dear Mr. German:

The Colorado River Water Conservation District ("River District") is pleased to support Bostwick Park Water Conservancy District's ("BPWCD") 2024 WaterSMART Water Energy and Efficiency application for the Shinn Park and Waterdog Pipelines Measurement Improvement and SCADA Integration Project ("Project"). The River District is a local government established in 1937 to serve as a leader in the protection, conservation, use, and development of water resources of the Colorado water basin for the welfare of the District. In this effort, the River District is dedicated to ensuring local water providers have reliable and resilient water infrastructure to adapt to a hotter and drier climate.

Located in Montrose, Colorado, The Bostwick Park Water Conservancy District (BPWCD) system consists of canals and laterals that transport irrigation water from the Cimarron River to the irrigated fields of Bostwick Park, Vernal Mesa, Shinn Park, Waterdog Mesa, and Kinikin Heights. To optimize use of their water resources and provide water security to their shareholders while limiting impacts to the environment, BPWCD has been committed to the modernization of their system. Over the past few years, BPWCD has installed pipelines and communication infrastructure to improve their system's efficiency. Currently the BPWCD is working to increase their conveyance efficiency on the Cimarron Canal by reducing deliveries and spills.

The Project will install measurement, automation, communications, and appurtenant solar power equipment at various locations near and along the Shinn Park and Waterdog Pipeline alignments. The proposed ultrasonic measurement equipment will greatly improve the accuracy of deliveries, thereby reducing over-deliveries to users, and will provide a metric by which automation can occur. Automation will allow for gates to be adjusted remotely (and automatically), thereby reducing spills when changes to intake rate occur. The ability for remote management and measurement will reduce man-hours and fuel consumption needed for the operation of the system and will result in an increase system resilience.

The River District promotes, encourages, and supports the wise and efficient use of all of Colorado's water resources. Additionally, the River District supports modernizing aging water delivery infrastructure for water users, while sustaining the natural environment. We strongly support the BPWCD's Shinn Park and Waterdog Pipelines Measurement Improvement and SCADA Integration Project and their application for the WaterSMART Water Energy and Efficiency funding and ask that you look favorably upon their WaterSmart application.

Thank you for your consideration.

Sincerely,

Andrew A. Mueller
General Manager