

WaterSMART GRANT APPLICATION:

SMALL-SCALE WATER EFFICIENCY GRANT FY2017

FOA: BOR-DO-17-F011

Montrose, COLORADO



APPLICANT: Allen Distel, President
Bostwick Park Water Conservancy District
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Acronyms

Name	Acronym
Acre feet	AF or Ac-Ft
Bostwick Park Water Conservancy District	District
Cimarron Canal & Reservoir Company	Company
Cubic feet per second	CFS or cfs
Colorado Division of Water Resources	CDWR
Funding Opportunity Announcement	FOA
National Environmental Policy Act	NEPA
Operation and Maintenance	O&M
United States Bureau of Reclamation	Reclamation
Supervisory Control and Data Acquisition	SCADA
Western Colorado Area Office	WCAO

1 Technical Proposal and Evaluation Criteria

1.1 Executive Summary

Date:	April 27, 2017
Applicant Name:	Bostwick Park Water Conservancy District
City:	Montrose
County:	Montrose
State:	Colorado
Estimated Project Start:	Fall 2017
Project Length:	7 Months
Estimated Project Completion:	Spring 2018
Federal Facility:	Serves a Reclamation Project
Amount Requested:	\$ 34,543

Project Summary: The Project Sponsors, comprised of the Bostwick Park Water Conservancy District (District) and Cimarron Canal and Reservoir Company (Company) desire to install a new water measurement device at the diversion point of the Cimarron Canal, the main delivery facility for the Bureau of Reclamation's Bostwick Park Project. The project will provide accurate measurement of flow diverted from the Cimarron River into the Cimarron Canal and the Bostwick Park Project. The measuring device is comprised of a 10 ft Ramp Flume, SCADA telemetry, and total cost is estimated at \$70,543. The project will enable the District to better manage the water thru a SCADA system.

Eligibility: This project falls within this FOA's Section C.3.1 – Irrigation Flow Measurement.

1.2 Background

1.2.1 Location Maps

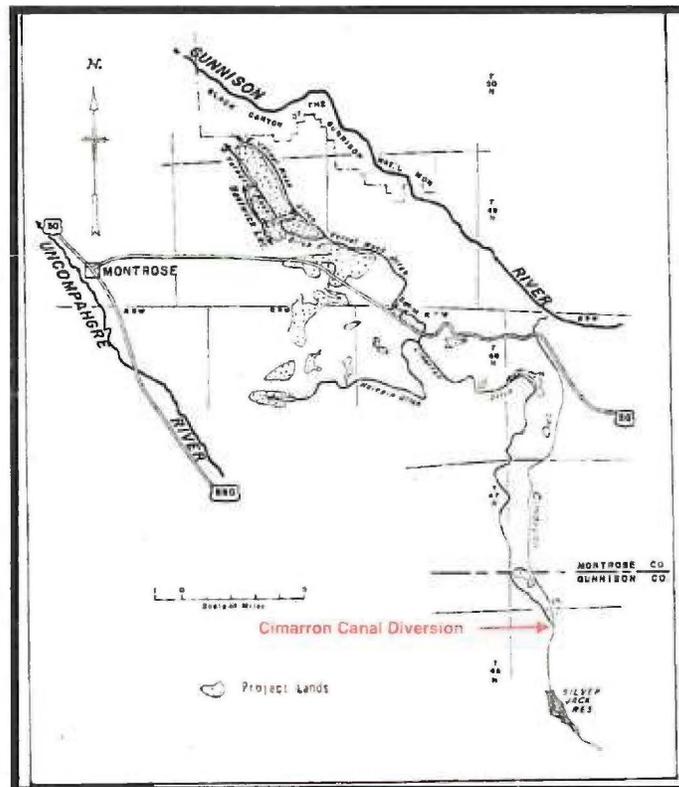


Figure 1 Project Location Maps

1.2.2 Bostwick Park Project

The District contracts with the Bureau of Reclamation for the storage water in Silver Jack Reservoir. The District then contracts with the Company to convey this storage water through the Cimarron Canal. The District and the Company share the cost of maintenance and repair of all District and Company works in the ratio of 65% and 35% respectively.

The Cimarron Canal begins approximately three miles downstream of Silver Jack Reservoir, storage vessel for Reclamation's Bostwick Park Project, at the diversion structure on the Cimarron River. The canal has a decreed capacity of 185 cubic feet per second (cfs) and traverses approximately 23 miles where it discharges into the private Hairpin and Vernal Mesa ditches. At this point a small flow is also diverted into the Cerro Reservoir on top of Cerro Summit. Only a minor amount of irrigation water is used in this 23-mile reach. The City of Montrose owns and operates Cerro Reservoir for domestic water supply purposes. The Vernal Mesa Ditch, with an initial capacity of at least 80 cfs, and the Hairpin Ditch, with an initial capacity of at least 45 cfs, begin at Cerro Summit. The Vernal Mesa Ditch serves the Bostwick Park Project area to the northwest. The Hairpin Ditch serves the Shinn Park and Kinikin Heights areas to the south. Other laterals and ditches subsequently originate from the Vernal Mesa and Hairpin Ditches to distribute water to the irrigated lands.

1.2.3 Crops Grown

Originally, a fairly wide variety of crops were grown in the project area. They included hay, grain, and truck farm crops. The predominant crops grown at the present are alfalfa and grass hay, grain for livestock feed, and a minor amount of cereal and miscellaneous crops.

1.2.4 Project Facilities

Bostwick Park Project District facilities consist primarily of open earthen ditches/canals. A pipe/siphon is used on the Bostwick Lateral to convey the water across the valley and then goes back to an open ditch. The Table below shows an inventory of facilities.

COMBINED FACILITY INVENTORY		
DESCRIPTION	QUANTITY/LENGTH	NOTES
Storage Dams	3	Fish Creek Numbers 1 & 2 and Silver Jack Reservoir
Diversion Dams	1	Cimarron Canal
Canals	23 Miles	Cimarron Canal
Laterals/Ditches	49 Miles	Hairpin, Vernal Mesa, and Bostwick Lateral
Drains	7.2 Miles	Open drain ditches constructed in 1973.
Siphons	1.1	Feeds Bostwick Lateral from East Vernal Mesa Ditch.
Large Parshall Flumes	2	Located at headgate and mid-point of Cimarron Canal
Turn-out structures with gates and flumes	Uncertain	Numerous water delivery structures to users.
Spill Boxes	15	Used to protect canal banks from overtopping during periods of high runoff.

The Vernal Mesa Ditch splits on the upper (south) end of Bostwick Park into the East and West Vernal Mesa Ditches. However, this arrangement was not sufficient to provide irrigation to arable land on the far west side of Bostwick Park. Because of this the BPWCD Project developed a 24" concrete siphon approximately 1.1 miles long that carries water from the East Vernal Mesa Ditch across Bostwick Park to the Bostwick Lateral.

Ownership of facilities is demonstrated in the following Table. Project water refers to storage water made available by the Bostwick Park Project works. Other water is made available by storage and direct flow water rights held by the CC & RC.

FACILITY OWNERSHIP			
DISTRICT – PROJECT WORKS		COMPANY WORKS	
Silver Jack Reservoir	13,500 acre-feet	Cimarron Canal including headgate and diversion dam.	Approximately 23 miles
Bostwick Lateral	1.771 miles Earthen ditches	Hairpin Ditch	7.468168 Miles
Bostwick Lateral Siphon	1.1 mile 24" concrete pipe	Kinikin Ditch	3.15351 Miles
Land Drains	6.1 miles rehab. 1.1 miles new	Waterdog Ditch	4.298551 Miles
		Shinn Park Ditch	3.346298 Miles
		Vernal Mesa Ditch	11.083 Miles
		East Vernal Mesa Ditch	4.21 Miles
		West Vernal Mesa Ditch	4.484 Miles

1.3 Project Description

1.3.1

The specific work to be undertaken with this proposed grant funding is the installation of a new measuring flume at the beginning of the Cimarron Canal. The flume will be comprised of a 10 ft galvanized steel Ramp Measuring flume and SCADA Telemetry Equipment which will provide real-time information needed for proper water management for the District and Company and provide required data to the Office of the State Engineer.

1.4 Evaluation Criteria

1.4.1 Criterion A: Planning Efforts Supporting the Project

- **Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?**

According to the District's Water Management Plan, there are three critical water measuring locations for proper operation of the District. They are comprised of the pressure transducer at Silver Jack Dam which measures water elevation/storage in the reservoir; a gaging station on the Cimarron River which measures releases from Silver Jack Reservoir; and the measuring flume identified in this FOA

application at the head of the Cimarron Canal that measures water diverted into the canal.

- **Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.**

Accurate flow measurement at this location is critical to the allocation of water for the project, therefore it has been identified as a high priority to connect the measuring device to the existing SCADA system.

1.4.2 Criterion B: Project Benefits

- **Describe the expected benefits and outcomes of implementing the proposed project. What are the benefits to the applicant's water supply delivery system?**

Implementation of the project will allow the District to collect accurate flow data necessary for proper water management and satisfy reporting requirements of the State Engineer's Office. This information will also be used to accurately allocate water rights and costs of operation between the Company and the District. It will enable the District to better manage the water thru the SCADA system.

- **If other benefits are expected explain those as well in consideration of the following:**
 - **Extent to which the proposed project improves overall water supply reliability.**

Accurate diversion measurement into the Cimarron Canal is necessary to ensure that the District and Company's water rights are being properly utilized. It is also necessary to calculate the water volume mass balance and assist in identifying system losses and deficiencies.

- **The expected scope of positive impact from the proposed project (e.g., local, sub-basin, basin)**

Operation of the gage on the Cimarron Canal impacts the area covered by the District and Company, an area spanning approximately 100 square miles. In addition, operation of the canal provides a portion of the domestic water for the City Montrose, Colorado.

In a larger context, the measurement of the Cimarron Canal can impact the discharge of flows in the Cimarron River, which is a critical tributary and integral component to Reclamation's Aspinall Unit on the Gunnison River, which ultimately impacts operation for the Black Canyon Water Right, benefit of endangered fishes in the Colorado and Gunnison rivers and water levels in Lake Powell.

- **Extent to which the proposed project will increase collaboration and information sharing among water managers in the region.**

The project will provide water flow information to the District, Company, the State Engineer's Office, and Reclamation so that water rights, water allocations, and downstream commitments can be met.

- **Any anticipated positive impacts/benefits to local sectors and economics (e.g., agriculture, environment, recreation, tourism).**

Operation of this gage in coordination with the Silver Jack pressure transducer and Cimarron River gage allow for the proper release of instream flows for the trout fishery in the Cimarron River below the diversion to the Cimarron Canal. Also, as mentioned above, operation of these three gages allow for coordination of releases to supplement the Aspinall Unit's operation for benefit of the Black Canyon Water Right and endangered fishes.

1.4.3 Criterion C: Project Implementation

- **Describe the implementation plan for 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.**

Installation of the measuring device will take place during the 2017-2018 off-season beginning in October of 2017. Any work not completed prior to winter conditions setting in will be completed in the spring of 2018 as conditions allow.

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

No permits should be necessary. Although if a Corp of Engineers permit is required it will be under a Nationwide Permit.

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

JUB Engineers has completed preliminary design work on the proposed project and provided the cost-estimate and budget shown below.

1.4.4 Criterion D – Nexus to Reclamation

- **How is the proposed project connected to a Reclamation project or activity?**

The proposed measuring device is one of the critical points of measurement for Reclamation's Bostwick Park Project.

- **Will the project help Reclamation meet trust responsibilities to any tribe(s)?**

None of Reclamation's tribe trust responsibilities will be helped with implementation of this project.

- **Does the applicant receive Reclamation project water?**

Yes. The District is the contracting entity for operation and maintenance of Silver Jack Dam and Reservoir and the Bostwick Park Project. 11,320 Ac-Ft of storage water is allocated to the District for irrigation.

- **Is the project on Reclamation project lands or involving Reclamation facilities?**

The project is not located on Reclamation project lands but does measure water delivered to Reclamation facilities.

- **Is the project in the same basin as a Reclamation project or activity?**

Yes. The project is located approximately 3 miles below Silver Jack Dam and will measure water diverted from the Cimarron River to project lands.

- **Will the proposed work contribute water to a basin where a Reclamation project is located?**

Waste-water from the Bostwick Park Project flows into Reclamation's Uncompahgre Project and is reused for irrigation purposes.

2 Environmental and Cultural Resources Compliance

- **Will the proposed project impact the surrounding environment?**

The project will involve typical accepted construction practices involving excavation, fabrication, installation, and backfill in the area in and around the Cimarron Canal. Best management practices will be utilized for dust and noise abatement and runoff control.

- **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?**

The District is not aware of any threatened or endangered species, proposed or listed in the project area.

- **Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as "Waters of the United States?"**

The only wetland or surface water impacted by the project will be located within the Cimarron Canal and right-of-way prism. Some liberal interpretation of "Waters of the United States" may include this area, but this will be addressed in any Corp of Engineers permitting.

- **When was the water delivery system constructed?**

Construction of the Cimarron Canal began in the early 1900's

- **Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.**

The measuring flume will be installed in the Cimarron Canal which was originally constructed in the early 1900's. The Cimarron Canal was modified in the 1970's as part of the Bostwick Park Project and a measuring flume was installed at that time. The project proposed under this FOA will serve the same purpose as the measuring flume installed as part of the Bostwick Park Project.

- **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.**

A Class III cultural resource inventory will likely be done on the project area, any staging/borrow areas, and any new access routes. The canal is likely eligible for the NRHP, so there may be a MOA and some mitigation that will need to be done, such as Level I Documentation.

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

None known at this time.

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

The total project cost is about \$70,543 and should not affect low income or minority populations.

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

No. The project is not situated near any tribal lands.

- **Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?**

During the construction process, Best Management Practices will be utilized to minimize the spread of weeds from the project area.

3 Required Permits and Approvals

The project will likely qualify for the USACE's irrigation exemption or be covered under Nationwide Permit No. 5 - Scientific Measurement Devices. This permit doesn't require a Pre-Construction Notification to the USACE, and there are no Regional Conditions for Colorado

associated with that permit. Any other required state or local permitting will be acquired as necessary.

4 Official Resolution

- The District Board will submit a Board Resolution committing District resources to the project within 30 days after the application deadline.

5 Budget

5.1 Funding Plan and Letters of Commitment

- The Cimarron Canal Company and the Bostwick Park Water Conservancy District through a combination of cash and in-kind service will cover the non-federal costs for the project. They have sufficient funds in reserve accounts available to cover the non-federal cash needs of the project. Annual audit and financial reports are available if required.

Non-Federal Costs: \$23,400 to be provided through cash and in-kind contributions from Bostwick Park Water Conservancy District and \$12,600 from the Cimarron Canal and Reservoir Company for a total of \$36,000 in non-federal contributions.

Amount Requested from Reclamation: \$34,543

Total Project Costs: \$70,543

5.3 Budget Narrative

- The following is an explanation of proposed costs for the project:
 - Salary and Wages – Costs associated with District staff performing the majority of the excavation, construction and installation. Trey Denison is the District Manager and will serve as the project program manager. Tyler Denison, laborer and equipment operator, will provide labor and equipment operation.
 - Equipment Usage – This is the cost of equipment needed to perform the work which will include but not be limited to:
 - Foundation Excavation – Excavation of the area needed to place the flume.
 - Import Material – Soil, gravel, and rock needed to bring the site to proper elevation for installation of the new flume.
 - Regrade inlet and outlet for new flume – Canal elevations may need to be adjusted to match the new flume.
 - 10” Concrete foundation – This is comprised of a 10” concrete base for the new flume to sit on in order to remain in a permanent fixed position.
 - Concrete Labor – Labor to accomplish above tasks associated with concrete placement.
 - Supplies and Materials
 - Concrete for foundation
 - 10 ft. galvanized Steel Ramp Measuring Flume – This flume will be permanently installed as part of the project.
 - Flume Shipping Charge – Charge for shipping.
 - Contractual Construction
 - Ag Fab LLC and Bar Rafter N Enterprises LLC - Crane Rental and installation specialists for placement of the flume.
 - Cultural Evaluation/Mitigation – Costs for Class III inventory and MOA.
 - JUB Engineers
 - Design – Design will be performed by private engineering firm.
 - Construction Management and Testing – This task will be contracted to a private engineering firm.
 - NEPA – NEPA is expected to be comprised of a Categorical Exclusion conducted by the Western Colorado Area Office at no charge, but some costs have been designated to cover unexpected issues that may arise.

6 APPENDIX - Attachments

6.1 Letters of Support

6.2 Board Resolution

APPENDIX – Attachments

Letters of Support

Cimarron Canal & Reservoir Company

400 South 3rd Street, Montrose, CO 81401

Phone: (970) 249-8707 Fax: (970) 252-7168

cimarroncanal@gmail.com www.bostwickcimarronwater.com



April 20, 2017

U.S. Bureau of Reclamation
Attn: Mr. Darren Olson
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Dear Mr. Olson:

Cimarron Canal & Reservoir Company is pleased to support the Bostwick Park Water Conservancy District's efforts in water management through their application to Reclamation for a Small Scale Water Efficiency Grant. Successful acquisition of this grant will allow the District to install a much needed water measurement structure at the beginning of the Cimarron Canal. Installation of a new measuring device will provide the District the information needed to properly manage diversions from Silver Jack Reservoir and Cimarron River.

We support this project and appreciate your consideration of this request.

Sincerely,

Allen Distel
President





Colorado River District

Protecting Western Colorado Water Since 1937

U.S. Bureau of Reclamation
Attn: Mr. Darren Olson
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Dear Mr. Olson:

I am writing to you to express the support of the Colorado River District for the Bostwick Park Water Conservancy District's (BPWCD) application to Reclamation for a Small Scale Water Efficiency Grant. The River District has been working directly with BPWCD on water efficiency projects throughout their system and wholeheartedly endorses this project to install a much-needed water measurement structure at the beginning of the Cimarron Canal, their main water supply delivery 'lifeline'.

The installation of a new measuring device will provide the District the information needed to better manage stored water deliveries from Silver Jack Reservoir and diversions from the Cimarron River. This device is a key piece of their recently completed Master Plan.

In summary, the River District urges you to fund this project to help support important water resource management objectives.

Sincerely,

**David
Kanzer**

Digitally signed by David Kanzer
DN: cn=David Kanzer, o=CRWCD,
ou, email=dkanzer@crwcd.org,
c=US
Date: 2017.04.20 11:35:40 -06'00'

Dave "DK" Kanzer, P.E.
Deputy Chief Engineer

April 20, 2017

Mr. Darren Olson
U.S. Bureau of Reclamation
Mail Code 84-027852
PO Box 25007
Denver, CO 80225



Dear Mr. Olson:

Tri-County Water Conservancy District is pleased to support the Bostwick Park Water Conservancy District's (District) efforts in water management through their application to Reclamation for a Small Scale Water Efficiency Grant.

Successful acquisition of this grant will allow the District to install a much needed water measurement structure at the beginning of the Cimarron Canal which will provide the District information needed to properly manage the water and its diversions from Silver Jack Reservoir and Cimarron River.

We support this project and appreciate your consideration of the District's request.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Berry".

Mike Berry
General Manager



4/13/2017

U.S. Bureau of Reclamation
Attention: Mr. Darren Olson
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

RE: WaterSMART Small-Scale Water Efficiency Grant – Bostwick Park Water Conservancy District

Dear Mr. Olson:

Please accept our enthusiastic letter of support for Bostwick Park Conservancy District's WaterSMART 2017 Grant Application. Trout Unlimited (TU) is pleased to support the District in their efforts to improve and modernize irrigation infrastructure through this and other efforts.

TU, alongside the 10,000 supporting members in Colorado and over 150,000 members nationwide, strive to protect, reconnect, restore and sustain coldwater fisheries like those found in the Cimarron River.

TU promotes irrigation water infrastructure improvements like remote water measurement, as explained in their grant application, which can be an important tool for conserving water. We are currently working with the Bostwick Park Conservancy District to improve water management throughout their district. The proposed new measurement flume will compliment other system improvements like piping and improved controls and will serve as a key component of accurate water management. Improving water management and measurement will assist the district in reducing the impact of irrigation diversions on the local fishery and other water users throughout the watershed.

In closing, we express our full support of this project and hope that the District's application receives thoughtful consideration.

Sincerely,

Cary Denison, Trout Unlimited
Gunnison Basin Project Manager

Trout Unlimited: America's Leading Coldwater Fisheries Conservation Organization
Cary Denison, Gunnison Basin Project Manager
264 County Road 4, Montrose, CO 81403
(970) 596-3291 • www.tu.org

Uncompahgre Valley Water Users Association
601 North Park Avenue
Montrose, CO 81401

April 20, 2017

U.S. Bureau of Reclamation
Attn: Mr. Darren Olson
Mail Code: 84-27852
P.O. Box 25007
Denver, CO 80225

Dear Mr. Olson:

Uncompahgre Valley Water Users Association is pleased to support the Bostwick Park Water Conservancy District's efforts in water management through their application to Reclamation for a Small Scale Water Efficiency Grant. Successful acquisition of this grant will allow the District to install a much needed water measurement structure at the beginning of the Cimarron Canal. Installation of a new measuring device will provide the District the information needed to properly manage diversions from Silver Jack Reservoir and Cimarron River.

We support this project and appreciate your consideration of this request.

Sincerely,

A handwritten signature in blue ink that reads "Steve Anderson". The signature is written in a cursive style with a horizontal line underneath.

Steve Anderson

**Resolution
Board of Directors
Bostwick Park Water Conservancy District**

Whereas, the Bostwick Park Water Conservancy District ("District") is a water conservancy district organized pursuant to C.R.S. 37-45-101 *et seq.*

Whereas, project was authorized as a participating project to the Colorado River Storage Project Act (70 Stat. 105) on September 2, 1964 by Public law 88-568 (78 Stat. 852).

Whereas, the U.S. Bureau of Reclamation constructed Bostwick Park Project, which was completed in 1972.

Whereas, the District desires to install a new measuring device on the Cimarron Canal, which delivers water to the Bostwick Park Project, and are seeking grant funding to do so;

NOW THEREFORE BE IT RESOLVED that the Bostwick Park Water Conservancy District Board of Directors hereby:

- Designates the President of the District, Allen Distel, as the legal authority/representative to enter into agreements related to the acquisition of grant funding for the above stated purposes
- Verifies the application for grant funding has been reviewed to the Board's satisfaction and supports the application submitted
- Commits the necessary in-kind and cash contributions necessary to complete the proposed project as outlined in the project funding plan
- Pledges to work with Reclamation as necessary to meet established deadlines for entering into necessary funding agreements

ADOPTED this 17 day of April, 2017 by unanimous vote:

BOSTWICK PARK WATER CONSERVANCY DISTRICT

BY: Allen Distel
Allen Distel, President