

**Fire Mountain Canal & Reservoir Monitoring
& Reservoir Control**

Paonia Project, Colorado
Hotchkiss, Colorado

A PROJECT GRANT PROPOSAL SUBMITTED TO:

**WaterSMART Grants:
Small-Scale Water Efficiency
Projects For
Fiscal Year 2018**

Funding Opportunity Announcement: BOR-DO-18-F009

On Behalf of:

Fire Mountain Canal & Reservoir Company
P.O. Box 543
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Table of Contents

Executive Summary	3
Background Data	3
Project Location	5
Technical Project Description	6
Performance Measures	7
Evaluation Criteria	7
Evaluation Criterion A—Project Benefits	7
Evaluation Criterion B—Planning Efforts Supporting the Project	9
Evaluation Criterion C—Project Implementation	9
Evaluation Criterion D— Nexus to Reclamation	10
Evaluation Criterion E—Department of the Interior Priorities	10
Project Budget	11
Budget Proposal	11
Budget Narrative	12
Environmental & Cultural Resource Compliance	13
Required Permits or Approvals	14
Letters of Project Support	
Official Resolution	
Letters of Commitment	

Executive Summary

July 28, 2018

Applicant: Fire Mountain Canal & Reservoir Company

Federal Facility: Paonia Project

City: Hotchkiss

County: Delta & Gunnison Counties

State: Colorado

Project Start Date: November/December 2018

Project Completion Date: June 30, 2019

The Fire Mountain Canal & Reservoir Company (FMCRC) wishes to implement Supervisory Control and Data Acquisition (SCADA) Telemetry within the Fire Mountain Canal (FMC) irrigation delivery system for the purposes of improving management of existing water supplies and storage, preserving storage when storm events contribute additional inflow to the North Fork of the Gunnison River (North Fork), and improving agricultural irrigation water delivery and safety. The project includes establishing a master computer and network at the FMCRC Headquarters Office (Hotchkiss, Co) to store data from remote sites and handle logic set-points, controls, and alarms. This includes software to monitor and control remote PLCs at:

- 1) Paonia Reservoir Dam Valve Control (Controls reservoir releases)
- 2) Bear Creek (Primary control site for water entering FMC system)
- 3) Anthracite Creek (Source of storm flows entering the North Fork. Relay data would communicate with the Paonia Dam valve control so that it can close in order to preserve existing storage)
- 4) Muddy Creek (Downstream Reservoir flow release data)
- 5) North Fork of the Gunnison River (Downstream flow maintenance check point)

The system will utilize satellite terminals and/or high speed internet to communicate with the master PLC and the remote PLC's. There will also be a communication link between the Anthracite Creek streamflow gauge and the controls for the valves at the reservoir. This will allow for the releases from the reservoir into Muddy Creek to relate with the flows in Anthracite Creek to maintain a steady flow in the North Fork. Paonia Dam was built on Muddy Creek just upstream of the confluence with Anthracite Creek (the confluence of the two creeks form the North Fork of the Gunnison River). When a storm event in the Anthracite basin increases the flows in Anthracite Creek, releases from the Reservoir into Muddy Creek can be reduced to conserve stored water in the reservoir while maintaining a steady flow in the North Fork of the Gunnison River. This project meets the following goals of the WaterSMART FOA by responding to the need for projects that: 1) Increasing the Reliability of Water Supplies through Infrastructure Improvements (Task A) by installing SCADA and automation components that reduce spills and enable the ability to use storm water and reduce the use of stored water and 2) Projects to Improve Water Management through Decision Support Tools, Modeling, and Measurement (Task B) by implementing and installing and/or modifying equipment associated with stream flow measurement devices, water level sensors, etc.

Background Data

The FMCRC, through an agreement with North Fork Water Conservancy District (NFWCD), operates and maintains the Bureau of Reclamation Paonia Project which includes the FMC and Paonia Reservoir. The FMC is a water-delivery facility which provides approximately 47,565 AF/year of irrigation water to 488 shareholders and 15,300 irrigated acres near Paonia and Hotchkiss, Colorado. The general farming products produced in the area are livestock feed and fruit: apples, peaches, pears, and cherries. In recent years, vineyards and organic farms have surfaced and are a thriving part of the local economy in this environment. The FMC diverts the bulk of its

water supply from the North Fork near the town of Somerset and winds 34.7 miles to its termination point at the northwest end of Rodgers Mesa west of the town of Hotchkiss. Supplemental water from Leroux Creek also enters the system in the last 5.5 miles of the canal. Approximately 59% of FMC shares are allocated to water users downstream of Leroux Creek on Rodgers Mesa, 29 miles from the diversion off the North Fork (see Figure 1 below).

Paonia Dam was constructed between 1959 and 1962 and is located in Gunnison County about twenty miles upstream from the town of Paonia, Colorado. Paonia Dam is a part of the Colorado River Storage Project (CRSP) and was one of the first dams built under that project. The dam captures and regulates water flows from several tributaries, most notably Muddy Creek. The Paonia Reservoir has a surface area of 334 acres, with total capacity of 20,950 acre-feet and an original active storage capacity of 18,150 acre-feet. Due to sedimentation from Muddy Creek over the past 55 years the estimated active storage capacity today is around 15,000 acre-feet.

Flood dangers in the North Fork Valley have significantly been reduced with the construction of the Paonia Dam. Snowmelt and flood flows are regulated by controlling storage space in the reservoir.

The operation and maintenance of the Paonia Dam was assumed by the North Fork Water Conservancy District on June 1, 1962. By contract, the district transferred the physical operation and maintenance of the project to the Fire Mountain Canal and Reservoir Company.

Fire Mountain Canal water rights are listed below:

WDID	Structure Name	Water Source	Adjudication Date	Admin No	Priorty No	Flow (cfs)
4001133	FIRE MT CANAL	N. FORK GUNNISON R.	3/20/1954	31924.31197	J207	106
4001133	FIRE MT CANAL	N. FORK GUNNISON R.	3/20/1954	31924.17059	J59	30
4001133	FIRE MT CANAL	N. FORK GUNNISON R.	2/10/1930	25807.2355	G83	7.5
4001133	FIRE MT CANAL	N. FORK GUNNISON R.	6/23/1914	21701	A109	44.5
4001133	FIRE MT CANAL	N. FORK GUNNISON R.	2/20/1904	19415.17059	33B	50

Summary of Paonia Reservoir Water Rights:

Adjudication Date	Appropriation Date	Amount (acre-feet)	Designated Use	Court Case	Water Source	Comments
3/20/1954	6/01/1935	18,000	Irrigation, Domestic, Stock, Industrial	CA4808	Muddy Creek	Made absolute 3/18/1966
1/31/1964	4/05/1949	3,000	Irrigation, Domestic, Stock, Industrial	CA4808	Muddy Creek	Made absolute 3/18/1966
3/23/1971	10/31/1969	7,424	Irrigation, Domestic, Stock, Industrial	W-206	Muddy Creek	"Inferior to all other present priorities..."
3/23/1971	10/31/1969	(2,576)	Irrigation, Domestic, Stock, Industrial	W-206	Muddy Creek	Conditional, "Inferior to all other present priorities..."
12/31/1992	12/31/1963	18,000	All uses	92CW153	Muddy Creek	Refill right
Totals		21,000			Muddy Creek	Storage rights
		28,000			Muddy Creek	Refill rights

The majority of FMC water rights are junior in priority and are annually called upon by senior water right holders. After the call, FMC relies on its stored water in Paonia Reservoir to provide 13,00AF of supplemental irrigation water to FMC shareholders with releases typically starting in July and ending in early to mid-September.

Shortfalls in water supply commonly affect FMC shareholders. They are a result of drought, senior water right holders placing calls on the river, and the current inability to maintain adequate flows at the head gate or in the canal due to fluctuating river levels. When the Reservoir water is used up, typically early to mid-September, the canal is turned off and the FMC shareholders are without water for the remainder of the season.

FMCRC has had many past and a couple present working relationships with Reclamation. Currently FMCRC is working with Reclamation on a Salinity Control project where the lower end of the FMC will be piped across Rodgers Mesa. The other big project that FMCRC & Reclamation are currently working together on is the Sedimentation issues at Paonia Reservoir. CRSP MOA funds are being used for this.

Salinity Control Projects:

Fire Mountain Canal Salinity Reduction Piping Project 2015 FOA Salinity Project Proposal FOA No. R15AS00037

This project will replace approximately 3.9 miles of open canal with PVC and HDPE pipe ranging from 10 to 66 inches in diameter. Project design is currently in progress with construction anticipated in the fall and winter of 2018-19.

The Bureau of Reclamation's Upper Colorado Region's financial assistance program the Water Conservation Field Services Program:

Automated Gate Controls for Paonia Dam Grant Agreement No. RI0AP40017

This project was funded in May of 2010 and supported the automation of the controls at Paonia Dam.

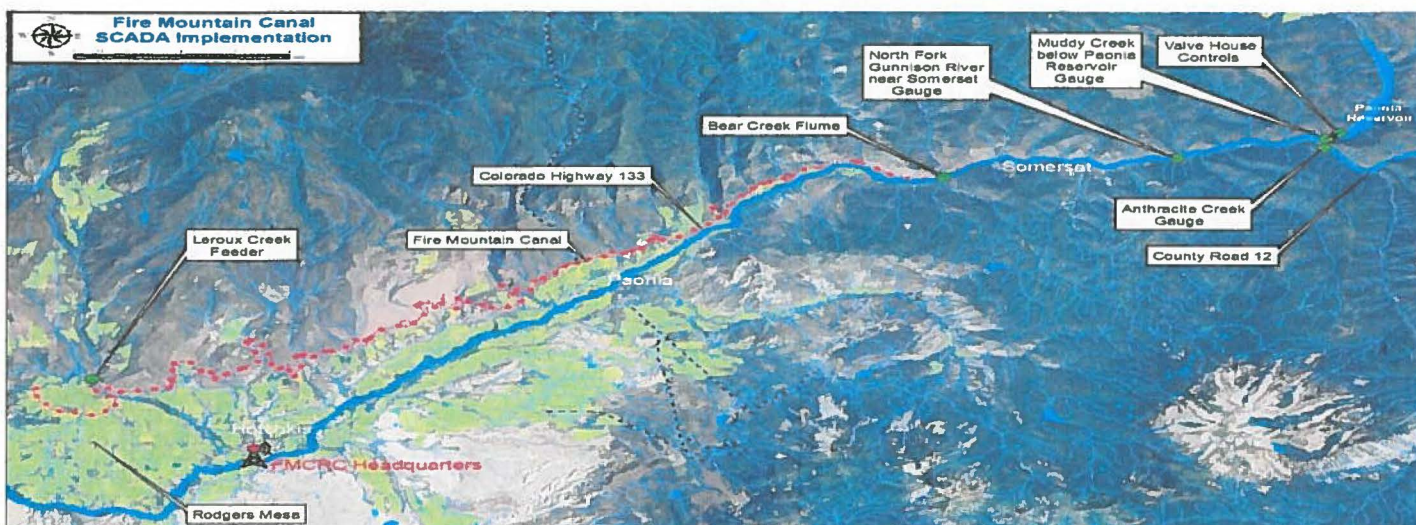
Creek Diversion Management & Efficiency Project Grant Agreement No. R14AP00048

This project was funded in September of 2014 and helped construct the automated flume gate for the Leroux Creek Diversion and flap gates at six emergency spillways along the canal.

This past fall the FMCRC & BOR worked together to remove the damaged bulkhead from the in-take tower to the out-let works to the Paonia Dam. This was funded with CRSP MOA funds.

Project Location

Figure 1. Project Location Map: Fire Mountain Canal & Reservoir Company



The FMCRC/Paonia Project is located in western Colorado in both Delta and Gunnison counties in the North Fork Valley. Paonia Dam and Reservoir are about 20 miles northeast of Paonia Colorado (Latitude: 38° 56'14.81"N and Longitude: 107° 21'44.75"W). The diversion (head-gate) for the FMC is on the North Fork just west of the town of Somerset Colorado on CO Hwy 133 and the canal runs 34.7 miles to the west and ends about 3 miles west of the town of Hotchkiss Colorado.

Technical Project Description

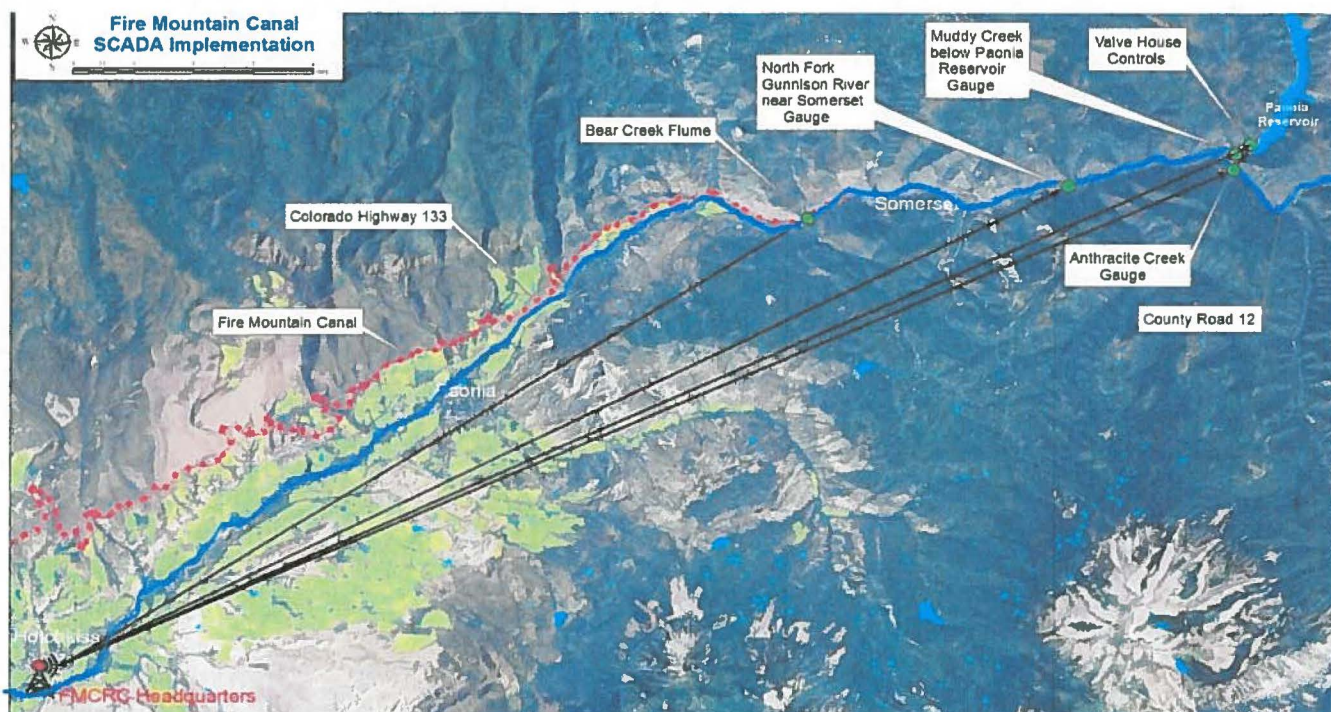
FMCRC proposes to install and implement Supervisory Control and Data Acquisition (SCADA) Telemetry on the upper end of the FMC irrigation delivery system for the purposes of preserving existing water supplies and storage and making use of storm water during storm events to conserve on stored water. This project includes installing and up-grading the remote monitoring site at Paonia Reservoir with up-to-date controls and satellite/high speed internet terminal and communications with stream gauges on Muddy Creek below the reservoir and on Anthracite Creek. The stream gauge on the North Fork of the Gunnison River will also communicate with Headquarters and serve as a flow maintenance check point.

There currently are stream gauges on Anthracite Creek, Muddy Creek below the Reservoir and on the North Fork of the Gunnison River near Somerset. The gauge on the Anthracite Creek is a U.S. Geological Survey (USGS) Gauge (USGS [09132095](#) ANTHRACITE CREEK ABOVE MOUTH NEAR SOMERSET). The gauge below the reservoir on Muddy Creek is a State Division of Water Resources (DWR) Gauge (MUDDY CREEK BELOW PAONIA RESERVOIR (MUDBPRCO)). The gauge on the North Fork near Somerset is also a USGS Gauge (USGS [09132500](#) NORTH FORK GUNNISON RIVER NEAR SOMERSET, CO.).

Both the DWR and the USGS are working collaboratively with FMCRC to add satellite terminals and solar panels at these existing sites so that data can be relayed to the reservoir and/or to the FMCRC headquarters.

A satellite terminal is also proposed at Bear Creek which is the primary control site for water entering FMC system. Bear Creek is located just downstream from the FMC diversion off the North Fork. This installation will give FMCRC better control on the flows in the Canal thus saving water wasted down the canal. Figure 2 shows the site locations and the link between each.

Figure 2: Installation Sites and Link Between Each



FMCRC is proposing to contract with Mountain Peak Controls (MPC) headquartered in Golden, CO to purchase and install the equipment for this project. A Technician/Salesman for this company lives in the nearby community of Paonia and is available upon short notice.

MPC will install a Master PLC computer at the FMCRC headquarters office with software to monitor and control remote PLCs at the Reservoir and Bear Creek sites, as well as, monitoring stations and communications on Anthracite Creek, Muddy Creek, and on the North Fork. A Master PLC will be installed alongside the SCADA computer to store data from the remote sites and handle logic for set points, controls, and alarms. Additionally, a Tosibox VPN router and encrypted keys will be provided for secure remote access via the internet.

Tasks & Timeline

Task Description	Timeline
Purchase equipment	November/December 2018
Install master PLC	December/January 2018-19
Install telemetry at gauge sites	January/February 2019
Establish communication link Anthracite - Paonia Reservoir	February/March 2019
Training	March/April 2019
Start-up & Testing	April/June 2019
Final Reporting	June/July 2019

Performance Measures

1) Preservation of agricultural water supply storage in Paonia Reservoir (estimated at 1,900 to 2,800 AF/year) via installation of real-time telemetry data between the Anthracite Creek Gauge and the Paonia Dam Valve Control, such that reservoir releases can be automated and reduced when storm events in the Anthracite basin are providing supplemental flows to the North Fork. These estimates were figured by looking at the stream gauge flow history and calculating the additional flow during storm events. The Anthracite Basin is a large basin with a lot of canyons and rock so there’s not a lot of rain penetration and much run-off; and

2) SCADA telemetry at the FMC headquarters, Bear Creek Gauge (primary control point for canal), Muddy Creek and North Fork at Somerset will improve the management of irrigation water supplies (47,565 AF/year) by an estimated 5% (2,378 AF/year).

There will be benefits to both FMC shareholders, as well as water users off the North Fork of the Gunnison River. Shareholders would have the benefit of extending stored water from the reservoir longer into the summer/fall and the water users off the North Fork would benefit from a more steady flow in the river. With the backbone of the SCADA system in place, the FMC will have the opportunity/ability to incorporate additional key sites within the system in the future.

Evaluation Criteria

Evaluation Criterion A—Project Benefits (35 points)

Up to **35 points** may be awarded based upon evaluation of the benefits that are expected to result from implementing the proposed project. This criterion considers a variety of project benefits, including the significance of the anticipated water management benefits and the public benefits of the project. This criterion prioritizes projects that modernize existing infrastructure in order to address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflict in the region.

- Describe the expected benefits and outcomes of implementing the proposed project.

- What are the benefits to the applicant’s water supply delivery system?
- If other benefits are expected explain those as well. Consider the following:
 - Extent to which the proposed project improves overall water supply reliability
 - The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)
 - Extent to which the proposed project will increase collaboration and information sharing among water managers in the region
 - Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)
 - Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the districts water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.

Response:

By having better control (SCADA) of the water entering the system & faster changes to canal flows when needed, it is figured we could have up to a 5% savings in water used annually. FMCRC’s average annual delivery is about 47,565AF, 5% of this is about a 2,350AF savings. Also being able to have the flows from the Reservoir controlled with SCADA & linked with the Anthracite Creek stream gauge to change releases from the reservoir during storm events has the potential of conserving between 1,900 to 2,800AF/year of water in the reservoir. These estimates were figured by looking at the stream gauge history on the Anthracite Creek and calculating excess flow during storm events. This gives FMCRC the ability to extend irrigation water to its Share Holders later into the season. This project will also maintain steadier flows in the North Fork during the irrigation season which will benefit other water users on the River as well as give other water managers along the river more flexibility over their diversions. This project will also have positive impacts to the environment of the river as well as positive impacts to recreation and tourism (fishing, paddle boarding, etc.) Once this project is installed it will be in place on-going with FMCRC doing the O&M and upgrades as necessary.

Evaluation Criterion B—Planning Efforts Supporting the Project (35 points)

Up to **35 points** may be awarded based on the extent to which the proposed on-the-ground project is supported by an applicant’s existing water management plan, water conservation plan, System Optimization Review (SOR), or identified as part of another planning effort led by the applicant. This criterion prioritizes projects that are identified through local planning efforts and meet local needs.

Describe how your project is supported by an existing planning effort.

- Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?
- Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.

Response:

Fire Mountain Canal Water Management Plan (2001): This project complies with the FMC:

- 1) Water Management Objective: Examine the potential to increase water storage and delivery efficiencies.
- 2) Water Management Goal #2: Increase the availability of drought season water.
- 3) Water Management Goal #3: Improve the accuracy of water measurement devices and continue annual infrastructure improvement program.

Fire Mountain Canal Reconfiguration Project: Integrated Assessment, Comprehensive Implementation Planning and Engineering Review (ITRC 2017): One of the several key modernization and safety recommendations coming out of this report was implementation of SCADA in that a *SCADA system can provide early warning problems, improve accuracy and efficiency of water control and reduce labor/travel.*

Gunnison Basin Implementation Plan: This project is a **Tier 1** Gunnison Basin Implementation Plan proposed project “... restore, maintain or modernize significant agricultural water supply infrastructure...to maximize impact on meeting agricultural water shortages...”

This project is also consistent with the following Gunnison Basin Goals including:

- **Goal No. 1**—Protecting Existing Water Uses which provides substantial economic productivity via processes including “...measures taken to use existing supplies more efficiently or effectively”.
- **Goal No. 3**—“Improve agricultural water supplies to reduce shortages via Site specific solutions with local water users...which could include infrastructure to improve system efficiency”

This project automates the dam valve controls such that releases can be adjusted when storm events provide supplemental flows to the North Fork which will extend the irrigation season and reduce shortages.

In addition, this project is a first step at establishing automation, remote monitoring, alarming and SCADA within the FMC system which allows the FMCRC to better manage their existing irrigation supplies.

- **Goal No. 7**—“Encourage cooperative projects which sustain agriculture and provide benefit to in stream flows... which provide late season water for environmental/recreational and agricultural uses.

This project extends late season flows and stabilizes river flows for the benefit of recreationists, environment and the agricultural community.

- **Goal No. 8**—“Restore, maintain, and modernize critical water infrastructure”.

This project is the first step in modernizing water management communication infrastructure and automation for the FMCRC.

Evaluation Criterion C—Project Implementation (10 points)

Up to **10 points** may be awarded based upon the extent to which the applicant is capable of proceeding with the proposed project upon entering into a financial assistance agreement. Applicants that describe a detailed plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.

- Describe the implementation plan 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.

SCADA equipment for this project will be purchased as soon as funding is awarded—November/December 2018; install master PCL at Headquarters—December/January 2018-19; install remote telemetry at Bear Creek Flume, Anthracite Creek, Muddy Creek and North Fork gauges—January/February 2019; establish communication links between Anthracite Creek stream gauge and controls at Paonia Reservoir—February/March 2019; conduct staff training—March/April 2019; perform start-up activities (e.g. testing, calibration, verification) at all sites—April/June 2019; and final reporting—June/July 2019.

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

No permits will be required as there is no ground disturbing activities to be done. The work being done will be adding electronic controls, PCL's or other SCADA equipment at the FMCRC Headquarters, control house at the dam and existing measuring sites/structures.

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

None

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

None

- Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?

Environmental compliance does not apply to this project as there are no ground disturbing activities associated with or wetlands impacted by this project.

Evaluation Criterion D— Nexus to Reclamation (10 points)

Up to **10 points** may be awarded based on the extent that the proposal demonstrates a nexus between the proposed project and a Reclamation project or activity. Describe the nexus between the proposed project and a Reclamation project or activity, including:

- Is the proposed project connected to a Reclamation project or activity? If so, how? Please consider the following:
 - Does the applicant receive Reclamation project water?
 - Is the project on Reclamation project lands or involving Reclamation facilities?
 - Is the project in the same basin as a Reclamation project or activity?
 - Will the proposed work contribute water to a basin where a Reclamation project is located?

This project is all on the Paonia Project, which is a Reclamation project and uses Project water. Reclamation owns the land around Paonia Reservoir and a lot of the FMC is Right of Way instead of easement owned by Reclamation.

- Will the project benefit any tribe(s)?

No

Evaluation Criterion E— Department of the Interior Priorities (10 points)

Up to **10 points** may be awarded based on the extent that the proposal demonstrates that the project supports the Department of the Interior priorities.

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

Modernizing our infrastructure

Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure;
Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;

Prioritize DOI infrastructure needs to highlight:

- Construction of infrastructure;
- Cyclical maintenance;
- Deferred maintenance.

This project is a definite modernization to the FMCRC/Paonia Project infrastructure. The implementation of this project to the system not only provides remote control at the reservoir and communication with the downstream real-time flow gauges, it also provides the backbone for SCADA to the system. This gives FMCRC the opportunity to connect other key sites within the system to be connected to the SCADA system in the future as these sites are also modernized.

Project Budget

Funding Plan and Letters of Commitment

Should this WaterSMART grant be awarded funding, the FMCRC is committed to providing the cost-share portion via cash and/or in-kind services. The source of funds include FMC shareholder assessments and a Colorado Water Plan Grant recently approved by the Colorado Water Conservation Board (CWCB) in the amount of \$26,055 (see Letter of Commitment Exhibit B in the Appendices).

FMCRC does not intend to seek any in-kind costs prior to the start-up date of this project.

There will be no other Federal funding sources for this project.

Table 1.—Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non Federal Entities	
1. FMCRC	\$4,652.40
2. Colo. Water Plan Grant (CWCB)	\$26,055.00
3. DWR*	\$1,580.00
Non-Federal Subtotal	\$32,287.40
Other Federal Entities	
1. None	\$0.00
Other Federal Subtotal	\$0.00
REQUESTED RECLAMATION FUNDING	\$31,055.00

Budget Proposal

Table 2.—Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/Unit	Quantity		
Salaries and Wages				
Manager/Dam Tender	\$35.67/hr.	60	Hour	\$2,140.20
Ditchrider/Operator	\$24.38/hr.	60	Hour	\$1,462.80
Ditchrider	\$19.08/hr.	55	Hour	\$1,049.40
Equipment				
N/A				\$0.00

Supplies and Materials				
Below				\$0.00
Contractual/Construction				
Mountain Peaks Controls (Includes Supplies & Materials)	\$52,110.00	1	Lump Sum	\$52,110.00
Elevate (Internet Install at Dam)				\$5,000.00
Other				
DWR (Stream Flow Measurements)	\$395/ea.	4	Ea.	\$1,580.00
TOTAL DIRECT COSTS				\$63,342.40
Indirect Costs				
				\$0.00
TOTAL ESTIMATED PROJECT COSTS				\$63,342.40

Budget Narrative

FMC&R is committed modernizing its infrastructure to improve the efficiency and reliability of its water resources. This automation, remote monitoring and SCADA project represents the first phase of a significant modernization effort that will improve water efficiency for its Shareholders and the entire North Fork Valley.

FMCRC has 3 full-time employees: Steve Fletcher—Manager/Dam Tender @ \$35.67/Hour
Ditch Rider/Operator @ \$24.38/ Hour
Ditch Rider @ \$19.08/Hour

The above rates are base rates that FMCRC pays these employees and therefore does not include any fringe benefits. The FMCRC is not seeking reimbursement for fringe benefits. It is estimated that Mr. Fletcher and Ditch Rider/Operator will each spend 60 hours on this project, while Ditch Rider will spend 55 hours assisting with installation, start-up and testing, and participating in training and reporting. Following is a chart showing the breakdown of the hours for each:

Employee	Installation Labor Hours	Start & Testing Labor Hours	Training Labor Hours	Reporting Labor Hours	Total Labor Hours
Steve Fletcher	35	8	12	5	60
Ditchrider/Operator	40	8	12		60
Ditchrider	35	8	12		55

Steve with a total of 60 hours @ \$35.67/hour = \$2,140.20
Ditch Rider #1 a total of 60 hours @ \$24.38/hour = \$1,462.80
Ditch Rider #2 a total 55 hours @ \$19.08/hour = \$1,049.40
Total Labor Costs (FMCRC) = \$4,652.40

There will be no heavy equipment, etc., rented, leased, or purchased with this proposed project. All components and supplies will be installed by hand.

Supplies and materials (SCADA telemetry) will be furnished and installed under a contractual agreement with Mountain Peak Controls. Elevate’s (only Fiber Internet provider in the area) charge for construction at the dam for internet service is \$5,000.00. There will be no other material costs incurred by FMCRC.

The contractual cost in the budget proposal is provided by MPC and includes all the electronic components, labor, installation, start-up and training for the project.

Total Contractual Cost—\$52,110

Upon initial consultation with Reclamation, FMC&RC does not anticipate any environmental or regulatory compliance costs associated with this project. There will be no earth disturbing activities or habitat impacts involved with this proposal. All activities with this proposal will be at either FMC&RC Headquarters, the valve control house at the dam or at existing flumes or gauging sites. The project entails only adding electronic equipment at existing structures. Past experience on projects similar to this one have not required any environmental or regulatory compliance.

The Colorado Division of Water Resources (DWR) is providing in-kind services to this project. DWR will conduct four additional stream flow measurements to help with the start-up and testing at the stream flow gauges. Standard cost for a stream measurement is \$395/each, this includes labor and mileage.

DWR Stream Flow Measurements—4 @ \$395.00 ea. Total \$1,580.00*

FMCRC is not seeking any indirect costs associated with project.

Total Costs:

Budget Item	Recipient Share Non-Federal	Reclamation Share Federal	Total Cost
Salaries & Wages	\$4,652.40	\$0.00	\$4,652.40
Contractual (MPC)	\$26,055.00	\$26,055.00	\$52,110.00
DWR* In-Kind	\$1,580.00	\$0.00	\$1,580.00
Fiber Internet Install	\$0.00	\$5000.00	\$5,000.00
Totals	\$32,287.40	\$31,055.00	\$63,342.40
Cost Share Percentage	51%	49%	100%

Environmental and Cultural Resources Compliance

- Will the proposed project impact the surrounding environment?
No. There will be no earth-disturbing work or work that would affect any air, water, or animal habitat.
- Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species?
No.
- Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States?”
No.

- When was the water delivery system constructed?
1958—1962 The Paonia Dam was constructed and the FMC enlarged and up-graded during that period.
- Will the proposed project result in any modification of or effects to, individual features of an irrigation system?
No.
- Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?
No.
- Are there any known archeological sites in the proposed project area?
No.
- Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?
No.
- 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

There are no permits required or approvals needed.



COLORADO
Division of Water Resources
Department of Natural Resources

Water Division 4 - Main Office

Matthew Reichert
Financial Assistance Support Section
Bureau of Reclamation, 84-27814
PO Box 25007
Denver, CO 80225-0007

RE: WaterSMART Small-Scale Water Efficiency FY 2018 FOA No. BOR-DO-18-F009

Dear Mr. Reichert,

The Division 4 Office of the Colorado Division of Water Resources is pleased to provide a letter of support for the North Fork Water Conservancy District (NFWCD) and the Fire Mountain Canal Company in seeking financial assistance for their project through your program. As the administrative agent overseeing the diversion of water in the Gunnison River, our support is based on our understanding that the project meets the criteria of the program because it is an on-the-ground project supported by the NFWCD water management plan (updated 2012). In addition, the Gunnison Basin Roundtable Implementation Plan has identified projects to improve water supply reliability as well as meet water supply shortfalls. This project has been identified as one such project for many years now.

The project consists of the installation and implementation of SCADA automation to the headgate structure of Paonia Reservoir to reduce spilling and capturing otherwise lost storage during rainfall events, thus increasing and extending water storage to the maximum extent practical.

Our support is further bolstered by our understanding that the project is consistent with Section 37-75-102, Colorado Revised Statutes (CRS) and will not attempt to repeal or, in any manner, amend the existing water rights adjudication system. Nor will the project conflict with the operation of, or cause injury to, any decreed water right or permitted well. Additionally, it is our understanding that this project would not impair our ability to comply with the Colorado River Compact, the Upper Colorado River Basin Compact, or Section 37-80-104, CRS regarding my duties to ensure compliance with interstate compacts. Please contact me if you have any questions.

Sincerely,

Bob Hurford, P.E.
Division Engineer



July 27, 2018

Matthew Reichert
Financial Assistance Support Section
Bureau of Reclamation, 84-27814
PO Box 25007
Denver, CO 80225-0007

RE: WaterSMART Small-Scale Water Efficiency FY 2018 FOA No. BOR-DO-18-F009

Dear Mr. Reichert,

The Gunnison Basin Roundtable would like to provide a letter of support for the Fire Mountain Canal and Reservoir Company in seeking a WaterSMART Grant for the implementation of Supervisory Control and Data Acquisition (SCADA) Telemetry, Remote Control at the Paonia Reservoir and communication with the stream gages down-stream of the reservoir.

We feel that this endeavor will not only benefit the Fire Mountain Canal and Reservoir Company, but also the other stakeholders on the North Fork of the Gunnison River in the following ways:

- Maintaining a steady flow in the river during irrigation season.
- Conserving Reservoir storage during storm events.
- Being able to provide agriculture water for late season needs.
- Giving water managers more flexibility over diversions.

This project is also one of the projects listed in the Gunnison Basin's Implementation Plan to improve water supply reliability as well as meet water supply shortfalls.

Sincerely,

Kathleen Curry

Kathleen Curry, Chair
Gunnison Basin Roundtable

OFFICIAL RESOLUTION
RESOLUTION NO. 2018 - 03

FIRE MOUNTAIN CANAL AND RESERVOIR COMPANY

WHEREAS, The Fire Mountain Canal and Reservoir Company (FMC) must maintain, provide for, and service the Water System; desires continued implementation of conservation and best water use practices; and to use technologies to enhance water use efficiency as well as safe operation of the canal.

WHEREAS, The Company sees the need to implement SCADA Telemetry within the FMC water delivery system for the purposes of preserving existing water supply and storage and improving agricultural irrigation water delivery and safety.

WHEREAS, The Company desires to obtain grant funding from the Bureau of Reclamation **WaterSMART Grant Application: Small-Scale Water Efficiency Projects for FY 2018.**

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

1. The WaterSMART Grant Application has been reviewed by the Board of Directors and supports the contents therein;
2. The Company is capable of providing the amount of funding specified in the funding plan; and
3. The Company will work with the Division of Water Resources (DWR), the USGS, and the North Fork Water Conservancy District to implement the water project.

Dated: 7/12/2018

 SEC/TREAS

Authorized Signature

RANDALL W FISHER SEC/TREAS

Printed Name and Title

FIRE MOUNTAIN CANAL & RESERVOIR CO.
P.O. BOX 543
HOTCHKISS, CO 81419
PHONE (970) 872-3664
FAX (970) 872-3667
firemountaincanal.com

July 27, 2018

Mr. Matthew Reichert
Financial Assistance Support Section
Bureau of Reclamation, 84-27814
PO Box 25007
Denver, CO 80225-0007

Re: WaterSMART Small-Scale Water Efficiency Projects for FY 2018 FOA BOR-DO-18-F009

The Fire Mountain Canal has obtained a Colorado Water Plan Grant for the Automation, Remote Monitoring, and SCADA to improve System Efficiency project in the amount of \$26,055. The FMC Board continues to be proactive in procuring funds and providing matching funds to improve the efficiency of irrigation water delivery to our shareholders.

Please accept this letter as our commitment to provide necessary matching funds for FOA BOR-DO-18-F009.

Sincerely,



Amanda Sullivan
Secretary Treasurer

From: Funk - DNR, Alexander

Sent: Wednesday, May 30, 2018 2:43 PM

To: steve fletcher

Cc: Elgin Turner - DNR

Subject: CWCB Water Plan Grant - Fire Mountain Canal and Reservoir Co - Automation Project

Dear Mr. Fletcher,

I am pleased to inform you that on May 24th, 2018 the Colorado Water Conservation Board approved a Colorado Water Plan Grant for the Automation, Remote Monitoring, and SCADA to Improve System Efficiency project in the amount of \$26,055.

Please be aware, a grant contract or purchase order must be in place before work can begin and corresponding grant funds can be disbursed.

Next Steps: I will need the following information in order to begin the PO/contracting process for your project:

- **A current/signed W-9 Form** - (Request for Tax Payer Identification Number and Certification). This form must be received for contracting purposes by you at your earliest. This information must match what the Internal Revenue Service (IRS) has on record for your company and must be signed. (See attached).
- **Current proof of adequate insurance if you are not a governmental entity.** This information must include general liability listing the State of Colorado as "additional insured", auto and workers compensation coverage's. The attachment to this email below details the required limits for grant contracts. See the attached example certificate - Accord 25 Form.
 - **IMPORTANT** - In the event you or your company does not own autos or have employees, provided a letter on company letterhead stating this fact for these liabilities.
- **Certificate of Good Standing for non-governmental entities** - Current status for non-governmental entities is required. This information must be documented with the Secretary of State (www.sos.state.co.us).
- **EFT - Direct Deposit** (form attached)

The following CWCB web link will direct you to the Colorado Water Plan Grants page for information on contracting and reporting requirement guidelines:

<http://cwcb.state.co.us/LoansGrants/Colorados-Water-Plan-Grants/Pages/main.aspx>

On behalf of the Board, I would like to thank you for your interest in a CWCB Colorado Water Plan Grant for this valuable project. You can contact me/Alexander Funk for contracting and accounting inquiries.

Best,

Alex

--

Alexander Funk
Agricultural Water Resources Specialist
Interstate, Federal, and Water Information Section



[P 303-866-3441](tel:303-866-3441) x 3201 | [C 540-335-3729](tel:540-335-3729)
1313 Sherman St., Room 718, Denver, CO 80203
alexander.funk@state.co.us | cwcb.state.co.us



JUL 30 '18 AM 10:00

July 26, 2018

Matthew Reichert
Financial Assistance Support Section
Bureau of Reclamation, 84-27814
PO Box 25007
Denver, CO 80225-0007

RE: WaterSMART Small-Scale Water Efficiency FY 2018 FOA No. BOR-DO-18-F009

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Sincerely,

Bob Hurford, P.E.
Division Engineer



JUL 31 '18 AM 10:37