COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Grand Mesa Water Users Association	
Name of Water Project	Project-01913 Grand Mesa Water Users' Efficiency Project	
Grant Request Amount		**$75,750.00**
Primary Category		$75,750.00
Water Storage & Supply		
Total Applicant Match		**$0.00**
Applicant Cash Match		
Applicant In-Kind Match		$0.00
Total Other Sources of Funding		**$364,250.00**
BOR WaterSMART Grant Applied Science Grant2021		$200,000.00
Colorado River District		$50,000.00
Gunnison Basin Roundtable		$20,000.00
CWCB WSRF Grant		$45,000.00
Private Contributors		$49,250.00
Total Project Cost		**$440,000.00**

Applicant & Grantee Information

Name of Grantee: Grand Mesa Water Users Association
Mailing Address: 980 West Main Street Cedaredge CO 81413
FEIN: 840,458,441

Organization Contact: Denise Jackson
Position/Title:
Email: admin@gmwua.com
Phone: 970-856-3165

Organization Contact - Alternate: Robert Morris
Position/Title: President
Email: admin@gmwua.com
Phone: 970-856-3165

Grant Management Contact: Denise Jackson
Position/Title:
Email: admin@gmwua.com
Phone: 970-856-3165

Grant Management Contact - Alternate: Robert Morris
Position/Title: President
Email: admin@gmwua.com
Phone: 970-856-3165

Description of Grantee/Applicant

GMWUA is a non-profit organization which administers water on the Grand Mesa.

Type of Eligible Entity

- ☐ Public (Government)
- ☐ Public (District)
- ☐ Public (Municipality)
- ☐ Ditch Company
- ☐ Private Incorporated
- ☐ Private Individual, Partnership, or Sole Proprietor
- ■ Non-governmental Organization
- ☐ Covered Entity
- ☐ Other

Category of Water Project

- ☐ Agricultural Projects
  Developing communications materials that specifically work with and educate the agricultural community on headwater restoration, identifying the state of the science of this type of work to assist agricultural users among others.
- ☐ Conservation & Land Use Planning
  Activities and projects that implement long-term strategies for conservation, land use, and drought planning.
- ☐ Engagement & Innovation Activities
  Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website.
- ☐ Watershed Restoration & Recreation
  Projects that promote watershed health, environmental health, and recreation.
- ■ Water Storage & Supply
  Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.

Location of Water Project

Latitude	39.043958
Longitude	-107.941969
Lat Long Flag	
Water Source	Grand Mesa National Forest
Basins	Gunnison
Counties	Delta
Districts	40-North Fork/Tribs.

Water Project Overview

Major Water Use Type	Agricultural
Subcategory	
Scheduled Start Date - Design	
Scheduled Start Date - Construction	6/1/2022

Description

GMWUA administers irrigation and municipal water captured in over 100 reservoirs located within a 35 square mile area on US Forest Service land on the Grand Mesa. These reservoirs have a total capacity of over 28,000 acre feet irrigating 10,000 +/- acres of land and provide water for 4 municipalities. Approximately 2,000 users,

including farmers, ranchers, orchardists, and municipalities benefit from services provided by GMWUA.

GMWUA's Water Efficiency Project is a two phase, multi-year project. Each phase will take two years to complete. Each phase can function without the other, however, implementation of both phases will provide optimal results. This current application is for phase 1.

In phase 1, funding will be used to help install electronic reservoir water measuring sensors and telecommunication systems for 50 reservoirs. GMWUA will produce digitized updated capacity surveys for 50 reservoirs. GMWUA will implement a software program to collect, analyze, and distribute data collected by the electronic sensors.

Measurable Results

28,000	New Storage Created (acre-feet) New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive Existing Storage Preserved or Enhanced (acre-feet) New Storage Created (acre-feet) Length of Stream Restored or Protected (linear feet) Efficiency Savings (dollars/year) Efficiency Savings (acre-feet/year) Area of Restored or Preserved Habitat (acres) Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement (acre-feet) Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning Number of Coloradans Impacted by Engagement Activity

Water Project Justification

1) Colorado Water Plan, Chapter 6, Section 6.5, page 6-127: Use water efficiently to reduce overall future water needs..

Efficient use can be achieved by implementation of electronic reservoir water measuring sensors. Accurate capacity surveys result in precise water quantification. Modernized computer software provides accurate water order transcription, reducing diversion errors, and improving delivery time.

2) Colorado Water Plan Chapter 10, Section 10.3, Page 10-10, Item D Critical Ag Action #3: …improve Colorado's aging agricultural infrastructure..

GMWUA's Water Efficiency Project will replace old measuring devices with state-of-the-art measuring and telecommunications technology. Data from the sensors and digitized accurate capacity surveys united with a sophisticated water distribution control software system will allow GMWUA to better serve the agricultural and municipal users.

Related Studies

No Related Studies provided

Taxpayer Bill of Rights

Not Applicable

Budget and Schedule

This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Reporting Requirements

Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that: (1) Summarizes the project and how the project was completed. (2) Describes any obstacles encountered, and how these obstacles were overcome. (3) Confirms that all matching commitments have been fulfilled. (4) Includes photographs, summaries of meetings and engineering reports/designs. The CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions. Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to as part of the project documentation.

Performance Measures

Performance measures for this contract shall include the following: (a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in the Budget & Schedule Exhibit B. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment. (b) Accountability: Per Water Plan Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Water Plan Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment. (c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary. (d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.

TECHNICAL PROJECT DESCRIPTION

a. Project scope

This project services the water administration needs of over 2,000 irrigators and 4 municipalities who provide domestic water to 6,000+ users within the Surface Creek Valley in western Colorado. Snowmelt from the nearby Grand Mesa is stored in over 100 privately owned reservoirs. The reservoirs range in size from less than 100 acre-feet to several thousand acre-feet. The water is delivered down 7 main drainages into several hundred lateral ditches. The accurate and timely administration of this water is a critical function and will be enhanced by the proposed project.

b. Project description

The project is made up of 4 primary components which are divided into 2 phases: 1) digital reservoir capacity surveys, 2) electronic water level recording instrumentation and transmission equipment, 3) a water distribution control software system, 4) a custom, interactive web-based water ordering system. Components 1-3 will be done in phase 1 of the project. This application for funding is for phase 1 only. Component 4 will be done in phase 2 of the project under a separate funding arrangement. If phase 2 is not implemented, the operation of phase 1 will not be negatively impacted.

Drone capacity surveys

Drone technology is a non-invasive method that can be used to acquire data on the water holding capacity of reservoirs. From the reservoir manager's point of view, the only requirement is an empty reservoir. The data produces contours in relationship to the invert of the headgate (bottom of the reservoir, zero elevation). This data is then converted into volume. Reservoir volume is measured in acre-feet of water. Reservoir capacity data for 50 reservoirs will be acquired in phase 1.

Electronic reservoir water level measuring sensors

Electronic sensors will be installed to provide real time data on water level height. A small antenna and solar panel will be installed on the reservoir head block. Data will be communicated to a web-based application for visualization and data archival. Sensors and data transmission equipment will be installed on 50 reservoirs for phase 1.

Water distribution control software system

The water distribution control system will be customized to the Surface Creek Valley drainage. Grand Mesa Water Users' Association (GMWUA) envisions a software system comprised of the following functionality: 1) a reservoir information database cataloging all data pertaining to

each of the 100 reservoirs on the Grand Mesa, 2) an interactive map of the reservoirs and their filling decrees, 3) a tool for analyzing priorities, 4) a dashboard of water administration activity (graphs, plots of water usage), 5) a reservoir seep monitor with alerts and alarms, and 6) a forecasting tool to predict future demand and delivery.

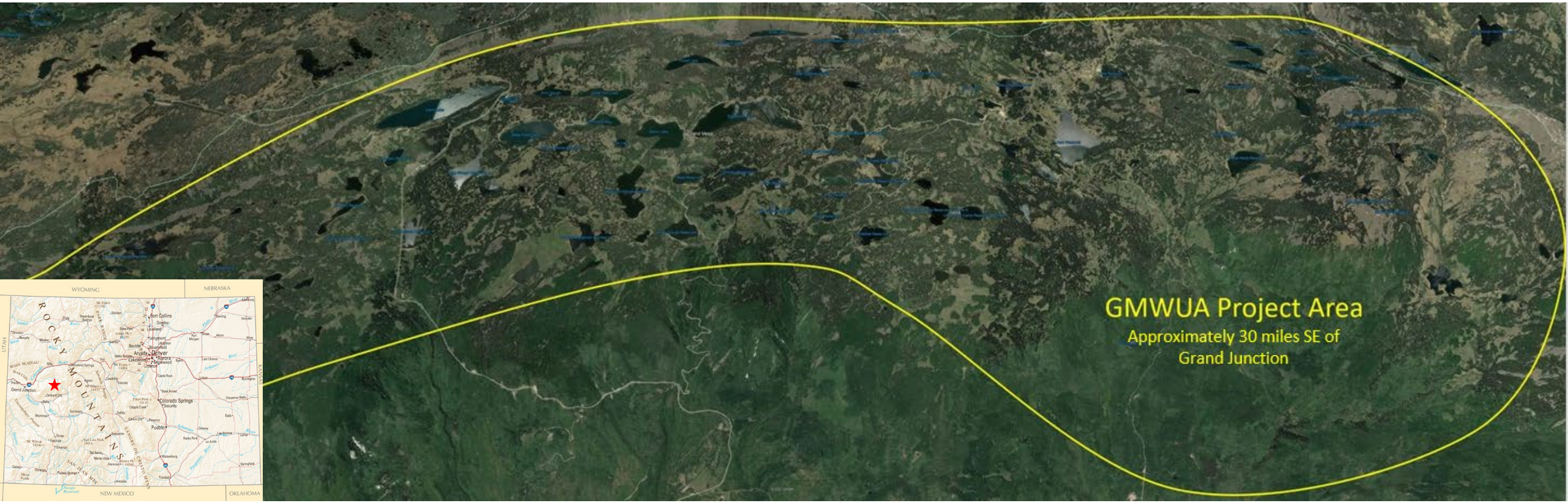
GMWUA Water Efficiency Project Phase 1 Work Plan

Grand Mesa Water Users' Association

Project Start Date Q4 2021

TASK	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023
Reservoir Capacity Surveys X 50 Reservoirs		Access is Weather Dependent				Access is Weather Dependent			
Prepare Site									
Fly Site									
Load, edit and calibrate data									
Compute capacity from elevations									
Electronic Sensor Installation X 50 Reservoirs		Access is Weather Dependent				Access is Weather Dependent			
Install sensor receiver unit									
Install transmission electronics									
Test installation									
Software Control System									
Installation and customization									
Integration of sensor data									
Development of AI forecasting									

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Salaries and Wages				
Progect Manager	$25.00	1200	per hour	$30,000.00
Fringe Benfits				
Equipment				
Supplies and Materials				
Contractual/Construction				
Digital Capacity Surveys	$1,100.00	50	reservoirs	$55,000.00
Electronic Sensors	$3,600.00	50	reservoirs	$180,000.00
Computer Software	$120,000.00	1	system	$120,000.00
Third-Party-In-Kind Contributions				
Other				
Environmental Permitting	$55,000.00	1	contract	$55,000.00
TOTAL DIRECT COSTS				**$440,000.00**
Indirect Costs				
TOTAL ESTIMATED PROJECT COSTS				**$440,000.00**


GMWUA Project Area
Approximately 30 miles SE of
Grand Junction
WYOMING
NEBRASKA
UTAH
COLORADO
NEW MEXICO
OKLAHOMA
ROCKY MOUNTAINS
Grand Junction
Denver
Colorado Springs
Pueblo
Fort Collins

Town of Cedaredge Colorado

235 W Main Street | PO Box 398
Cedaredge, Co 81413
970-856-3123
wwwCedaredgeColorado.com

April 15, 2021

WaterSMART – Applied Science Grant for FY21
Department of the Interior
Bureau of Reclamation
Policy of Administration
Ms. Avra Morgan, Program Analyst
aomorgan@usbr.gov | SHA-DRO-FAFOA@usbr.gov

Dear Ms. Morgan and Members of the WaterSMART – Applied Science Grant Committee,

The Town of Cedaredge writes to lend support to the successful grant application of the Grand Mesa Water Users Association's Efficiency Project, Phase 1. The Town is a shareholder in several reservoirs that GMWUA manages, and we have a deeply vested interest in supporting the continued work of GMWUA to manage the ever-increasingly sparse water resources in our state.

Phase 1 of the entity's Efficiency Project aims to produce digitized capacity charts for 50 reservoirs; installs water level sensors at those 50 reservoirs; and will also transmit the data to a computer program in the office. These steps will allow the staff of the Water Users to more accurately monitor and manage water supplies, a vital step to protect the Surface Creek Valley's water interests for our municipal customers and our agricultural businesses, an important piece of the economic pictured in our area.

Water is life, especially in an agricultural valley like ours. The work that Grand Mesa Water Users Association is doing to support, maintain, monitor and manage water for the life and livelihood of the residents of the Surface Creek Valley is monumentally important. Furthermore, Delta County is an economically disadvantaged community with few financial resources. Healthy, smart and forward-thinking water conservation projects take time, effort and considerable financial resources. The staff and board members of the Grand Mesa Water Users Association have the knowhow, the time and the desire to work to preserve and protect Western Colorado water. What they lack, and how you can help, is with your financial support to this project. This grant will not only give vital support to the Grand Mesa Water Users Association and this project, but will support the many families, businesses, schools, churches, civic groups and nonprofits that depend daily on the water that GMWUA manages for us.

We thank you in advance for your support of the Grand Mesa Water Users Association grant application.

Raymond F. Hanson, Mayor

GRAND MESA WATER CONSERVANCY DISTRICT
P.O. Box 129
Cedaredge, CO 81413

LETTER OF SUPPORT

April 16, 2021

Grand Mesa Water Users Assn.
P.O. Box 399
Cedaredge, CO 81413

To Whom It May Concern,

The Grand Mesa Water Conservancy District Board of Directors have voted to Support the Grand Mesa Water Users Assn. application for a Bureau of Reclamation Grant. The Conservancy District Board represents constituents in an area from the Mesa County line south and east to the Gunnison River and the Current Creek (Dry Creek) drainage of Delta County.

The Conservancy District understands the project and strongly supports this effort to measure the capacity of 50 reservoirs in Phase 1, install gage rods that will include sensors which will measure water depth in the reservoirs along with the transmitter capability to transmit data to a satellite and ultimately to the main office of the Water Users. The Water Users have all ready invested in a custom built water management program that will process the data received and keep a real time record of the water inventory as well as track the delivery of water by decree or water ordered from the inventory.

The Conservancy District recognizes that with the management tools that this project is creating, it will materially affect the management of the Surface Creek Valley overall water system reducing waste, reducing man hours collecting data and tracking problems and provide a check on the accuracy of the human element of the water management system.

Respectfully Submitted,

Austin M. Keiser, Pres.
Grand Mesa Water Conservancy District.

Upper Surface Creek Domestic Water Users Association

April 15, 2021

WaterSMART Applied Science Grant

RE: GMUA's Efficiency Project

As a municipal shareholder of Grand Mesa Water User Association, we are in total support of GMUA's Efficiency Project. As a private domestic water company, it is imperative that we have **accurate** information of water that is available for the members of the water company. This information helps the BOD determine if water restrictions will need to be placed on the members during the summer months, if USCDWUA needs to rent additional water to supply current taps, and if we can supply new taps on our system.

Sincerely,

Amber McPherson

Amber McPherson
Secretary/Treasurer

USCDWUA P.O. Box 70 Cedaredge, CO 81413
(970) 856-7199 www.uscdwua.com