COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Colorado State University
Name of Water Project	Advancing sustainable water management in Colorado's mountain agriculture with an innovative, community-driven approach
Grant Request Amount	**$879,047.47**
Primary Category	$879,047.47
Agricultural Projects	
Total Applicant Match	**$298,827.00**
Applicant Cash Match	$298,827.00
Applicant In-Kind Match	$0.00
Total Other Sources of Funding	**$0.00**
Total Project Cost	**$1,177,874.47**

Applicant & Grantee Information

Name of Grantee: Colorado State University
Mailing Address: 2002 Campus Delivery Fort Collins CO 80523

Organization Contact: Erik Wardle
Position/Title: Agricultural Water Quality Program Director
Phone: 970-215-6828
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Grant Management Contact: Erik Wardle
Position/Title: Agricultural Water Quality Program Director
Phone: 970-215-6828
Email: erik.wardle@colostate.edu

Description of Grantee/Applicant

No description provided

Type of Eligible Entity

- [x] 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

- [x] 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	40.220644
Longitude	-106.908056
Lat Long Flag	Stream location: Coordinates based on general location on stream
Water Source	The Upper Yampa Watershed Project location is an approximate point in the Upper Yampa Watershed. Please see attached maps in uploaded documents. Exact ranch research sites will be determined in consultation with the advisory group and local partners.
Basins	Yampa/White/Green
Counties	Routt; Rio Blanco; Garfield
Districts	58-Upper Yampa River; 57-Middle Yampa River

Water Project Overview

Major Water Use Type	Agricultural
Type of Water Project	Study
Scheduled Start Date - Design	11/1/2025
Scheduled Start Date - Construction	

Description

As more water quality challenges face Colorado’s mountain rivers, streams, lakes and reservoirs attention is increasing on agricultural activities in these areas. In the Yampa River basin these water quality concerns are being met by a very active local community seeking collaborative solutions to these issues. Producers in the area have been actively involved and would like to see more work done to accurately represent their role. This project will work closely with local stakeholders to demonstrate and evaluate locally defined Best Management Practices (BMPs) for sustainable water management. This will include on-farm edge-of-field water quality monitoring, stream and reservoir sampling, and collection of other critical data such as soil fertility sampling. This sampling will evaluate the impact of these operations on water quality and quantity. On-farm data will be used as a tool for producers to make the best decisions for their operations and the environment. This data collection will be used

to enhance work being done by other entities evaluating water quality in the area. All activities will be done under the guidance of a project specific advisory committee to ensure local goals are being met throughout the life of the project.

Measurable Results

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)
Length of Pipe, Canal Built or Improved (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
95,000 Number of Coloradans Impacted by Engagement Activity
Other

While this project primarily takes place in Routt, and parts of Rio Blanco and Garfield Counties (population ~95,000), this work has the potential to impact watersheds with this type of production throughout the state.

Water Project Justification

This project will support several key goals of the Partner Actions that were laid out in the Colorado Water Plan, Robust Agriculture focus Area. The vision for this project includes addressing the Meeting Future Water Need, Engaged Partners, and Wise Water Use action areas. These connections are noted below.

Section 2.1 - Expand agricultural water conservation, education, and peer-to-peer programs that enhance innovation - fits the locally based approach of this project. The work will focus on how mountain meadow hay and ranching/grazing systems can aid in the conservation of water quality and quantity. This project seeks to support the vibrant community by supporting peer-to-peer conversations and activities related to project goals.

Section 2.2 - Integrate capacity building efforts to support agriculture - aligns with one of the primary objectives of the project to create a robust data set and associated recommendations and documents to provide producers with actionable information. Producers are the best individuals to decide the ideal Best Management Practices for their operations and this project will increase capacity for those decisions.

Section 2.9 - Assess agricultural impacts and best practices for water quality protection and Section 2.10 - Integrate soil health, water conservation, and adaptive practices that increase economic outputs with less water use are at the root of this project’s focus area. Water quality issues are well documented in Stagecoach Reservoir and downstream on the Yampa River. This project is focused on looking directly at water quality impacts of new and existing Best Management Practices (BMPs) that can be implemented on-farm. This project builds upon a recently completed and highly successful statewide project looking at water quality in these mountain systems (a collaboration between CDPHE, Colorado Ag Water Alliance and the AWQP). This project will allow for more intensive focus on BMPs in an area of the state with critical recreational, agricultural and urban water needs.

Additionally, this project addresses the new objectives described in the Yampa-White-Green (YWG) Basin

Improvement Plan, Volume 2, Goal 3 (page 24).
1. Support local conservancy and conservation districts with efforts to bolster agricultural water use and seek partnerships with municipal, industrial, environmental, and recreational groups.
2. Engage agricultural users in water policy and management discussions by using proven and effective communication tools that reach agricultural producers.
3. Invest in education and outreach efforts that inform a broader audience (both in-basin and statewide) about agricultural water management and need how they can be met in the YWG Basin
The Agricultural Water Quality Program (AWQP) has standing relationships with local conservancy, conservation districts and agricultural producers in the Upper Yampa Basin. As outlined in Task 1 of the project, these producers will be intimately involved in the project, advising the AWQP on the best management practices (BMPs) to help implement and monitor and provide valuable input on the recommendations for sampling locations as well. The partnership with the advisory committee will continue throughout the entirety of the project.

This project also addresses the new objectives described in the Yampa-White-Green Basin Improvement Plan, Volume 2, Goal 4 (page 26).
3. Support research and education on alternative irrigation regimes, impacts of invasive species and noxious weeds, improved hydrological forecast modeling, cloudseeding, and climate change adaptation.
4. Support education and programs that improve soil and range health
5. Support education and programs that improve forest/watershed health.
To address Objective 3 of Goal 3, this project will conduct research to determine and possibly update the irrigation best management practices for the region. By collecting data specifically from the Upper Yampa watershed in Tasks 2 and 3, the project will directly inform agricultural producers in the area of the impact of different irrigation regimes. Task 4 of this project will turn the findings from previous tasks into education and outreach materials as well as provide for educational programs (field days, workshops, etc.) that will directly meet objectives 4 and 5 of Goal 4.

Related Studies

There are numerous studies in the area and some important examples are below. This key localized work will help inform this project, and this work will add significant on-farm/ranch collaboration and robust data.

Viriddy – a company of researchers focus on water quality monitoring and carbon related issues in the basin. They have shared their data sets with the AWQP and they are complimentary to this project's goals.

UYWCD water quality projects – The Upper Yampa Water Conservancy District has invested significant resources in studies on water quality, quantity, snowpack predictions and other critical water issues. As partners on this project, they will use this project to supplement their detailed understanding of issues in the basin.

Upper Yampa Watershed Group – this entity has conducted a variety of studies in the area including a recent project utilizing isotopic analisyis to evaluate sources of nitrogen and phosphorus in the basin.

The AWQP has a history of coordination and collaboration including data sharing and consulting with the entities listed above.

Taxpayer Bill of Rights

The AWQP is not aware of any potential TABOR limitations