



**COLORADO**

Colorado Water Conservation Board

Department of Natural Resources

**Colorado Water Conservation Board**

**Water Plan**

**Water Project Summary**

Name of Applicant	Shavano Conservation District	
Name of Water Project	Demonstrating Gravity-Powered Micro-Irrigation in Gunnison Basin Agriculture	
Grant Request Amount		<b>\$1,896,000.00</b>
Primary Category		\$1,896,000.00
	<i>Agricultural Projects</i>	
Total Applicant Match		<b>\$849,400.00</b>
	<i>Applicant Cash Match</i>	\$800,000.00
	<i>Applicant In-Kind Match</i>	\$49,400.00
Total Other Sources of Funding		<b>\$849,400.00</b>
	<i>Upper Colorado River Commission</i>	\$800,000.00
	<i>Shavano Conservation District</i>	\$45,400.00
	<i>The Freshwater Trust</i>	\$4,000.00
Total Project Cost		<b>\$3,594,800.00</b>

**Applicant & Grantee Information**

Name of Grantee: Shavano Conservation District  
Mailing Address: 102 Par Place, Suite 4 Montrose CO 81401

Organization Contact: Penny Bishop  
Position/Title: District Manager Email: shavanocd@gmail.com  
Phone: 970-964-3584

Organization Contact - Alternate: Penny Bishop  
Position/Title: District Manager Email: shavanocd@gmail.com  
Phone: 970-964-3584

Grant Management Contact: Penny Bishop  
Position/Title: District Manager Email: shavanocd@gmail.com  
Phone: 970-964-3584

**Description of Grantee/Applicant**

No description provided

**Type of Eligible Entity**

- Public (Government)
- Public (District)
- Public (Municipality)
- Ditch Company
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- 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	38.478750
Longitude	-107.877731
Lat Long Flag	County centroid: Coordinates based on centroid of county boundary
Water Source	Colorado River surface water
Basins	Gunnison
Counties	Montrose; Delta; Gunnison; Ouray
Districts	41-Lower Uncompahgre River; 68-Upper Uncompahgre River; 62-Upper Gunnison 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

Demonstrating Gravity Powered Micro-Irrigation in Gunnison Basin Agriculture is a project focused on demonstrating gravity-powered micro-irrigation systems and decision support tools on approximately 600 acres of flood irrigated farmland. Agricultural producers in the Shavano Conservation District (District) continue to experience extreme drought conditions and urgently need new methods of irrigating with less water. While micro-irrigation and other water-efficient technologies, such as sprinklers, have been tried in the area, challenges with water quality and high costs have prevented them from being widely adopted. Gravity-powered micro-irrigation technology requires no expensive filtration systems or external energy sources, and allows producers to precisely irrigate and fertigate directly through the irrigation system – reducing water demand and nutrient runoff. This project will evaluate gravity-powered micro-irrigation on multiple crop types to demonstrate it,

at a larger scale, as an effective irrigation method in the Gunnison basin – increasing knowledge of and access to efficient irrigation methods that will allow producers to continue to grow despite growing water scarcity.

### 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)
1,020	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)
4,000,000	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
56,500	Number of Coloradans Impacted by Engagement Activity
Other	
	No additional measurable results provided

### Water Project Justification

Colorado’s water supply is increasingly threatened by aridification, prolonged drought, and population growth. Under the most severe conditions, communities across the state could face additional water demands of up to 740,000 acre-feet per year (Colorado Water Plan, 2023, p. 2). Statewide, agriculture accounts for approximately 90% of total water use, while in the Gunnison Basin, an even higher 97% of water diversions serve agricultural purposes (Gunnison Basin Implementation Plan, 2022, p. 3). All growth scenarios for the Gunnison Basin predict an agricultural water supply shortfall (Gunnison Basin Implementation Plan, 2022, p. 26).

Investing in technologies that increase on-farm water use efficiency — while remaining economically feasible for producers — is critical to addressing these challenges. Beyond its water demands, agriculture contributes \$47 billion annually to Colorado’s economy (Colorado Water Plan, 2023, p. 5).

The Demonstrating Gravity-Powered Micro-Irrigation in Gunnison Basin Agriculture project directly supports the Colorado Water Conservation Board’s (CWCB) mission to conserve, develop, protect, and manage Colorado’s water for current and future generations through local community action (Colorado Water Plan, 2023, p.11). The project also focuses on sustaining productive, profitable agriculture by addressing irrigation supply limitations and increasing agricultural efficiency (Gunnison Basin Implementation Plan, 2022, p. 14).

The Shavano Conservation District (District) will demonstrate the economic and environmental viability of gravity-powered micro-irrigation, providing a proven pathway for adoption across the basin and the broader Western Slope. By improving on-farm water efficiency, maintaining or enhancing yields, and supporting improved nutrient management, this project advances local agricultural resilience while conserving water resources. Additionally, in partnership with The Freshwater Trust, the District will utilize the BasinScout® tool to identify fields with the greatest potential water benefits, helping the Shavano Conservation District strategically prioritize sites for implementation.

By improving water use efficiency and supporting sustainable agriculture, this project directly advances the goals outlined in the Colorado Water Plan (2023) and the Gunnison Basin Implementation Plan (2022), helping ensure that Colorado’s water resources remain secure for generations to come. The District envisions this project as a foundation for bringing together producers, government agencies, non-profits, and other sustainability-focused partners to develop economically viable solutions that can transform agriculture, conserve vital water resources, and preserve the culture and identity of these rural communities.

## Related Studies

Gravity-powered micro-irrigation has been tested and supported by a range of public and private funding sources across the United States. This technology has been piloted in Arizona, New Mexico, California, Texas, Nebraska, Florida, and, most recently, on a small scale in western Colorado. In Arizona alone, multiple grants through the United States Department of Agriculture (USDA), the Water Infrastructure Finance Authority of Arizona (WIFA), and state-appropriated programs have validated the technology's field effectiveness. USDA support has come through programs such as Conservation Innovation Grants (CIG), the Rural Energy for America Program (REAP), and the Environmental Quality Incentives Program (EQIP). These projects have delivered measurable results – illustrating how the technology allows producers to continue to cultivate fields and withdrawing 30-60% less water (compared to flood irrigation).

Beyond public funding, major corporations, both consumer package goods (CPG) and technology companies, have supported the usage of gravity-powered micro-irrigation to advance their sustainability goals. Companies such as PepsiCo, Google, Meta, and Microsoft have funded deployments in Texas, Arizona, Nebraska and Florida to help offset water use from data centers or supply chains.

In 2024, the Upper Colorado River Commission granted funds to support a two-step demonstration project. The first part of the producer outreach and initial early-stage demonstration began in Colorado. The second grant of \$800,000, which is the match funding for this proposal, is focused on demonstrating a scaled demonstration on multiple crop and soil types, which will show widespread economic viability and encourage adoption by more producers.

Although the Colorado Water Conservation Board (CWCB) has not yet directly funded on-farm micro-irrigation technology of this kind, this project presents an opportunity for the CWCB to lead the way in advancing on-farm efficiency. CWCB has funded projects focused on developing water-efficient agriculture practices (either by adapting current irrigation methods, like gated pipe, or demonstrating more water-efficient crop types). By investing in innovative solutions like gravity-powered micro-irrigation, the CWCB can broaden the scope of on-farm water conservation, complementing its long-standing support for agricultural water delivery system improvements.

## Taxpayer Bill of Rights

We do not have any Tabor issues that would affect this application.