COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Owl Creek Supply & Irrigation Company	
Name of Water Project	Operational Improvement Project - Owl Creek Lateral	
Grant Request Amount		**$90,960.00**
Primary Category		$90,960.00
Agricultural Projects		
Total Applicant Match		**$30,320.00**
Applicant Cash Match		$30,320.00
Applicant In-Kind Match		$0.00
Total Other Sources of Funding		**$0.00**
Total Project Cost		**$121,280.00**

Applicant & Grantee Information

Name of Grantee: Owl Creek Supply & Irrigation Company
Mailing Address: 106 Elm Ave Eaton CO 80615

Organization Contact: Kim Nelson
Position/Title:
Phone:
Email: knelson@eatonditch.com

Grant Management Contact: Kim Nelson
Position/Title:
Phone:
Email: knelson@eatonditch.com

Description of Grantee/Applicant

No description provided

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

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- [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	40.595127
Longitude	-104.624246
Lat Long Flag	
Water Source	Cache la Poudre River
Basins	South Platte
Counties	Weld; Arapahoe
Districts	

Water Project Overview

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

Description

The Owl Creek Lateral receives irrigation water from the Larimer and Weld Irrigation system and is effectively “at the end” of the system. Later in the irrigation season, water does not run consistently because the ditch is out of priority and water is lost during the weekly start up and shutdown operations. The Lateral received funding from the Colorado Water Conservation Board’s Local Capacity Program to identify conceptual design alternatives to reduce losses. The Board of Directors of the Owl Creek Lateral chose one of the alternatives identified in the previous grant. This proposal involves the final design and construction documents for the alternative chosen. Specifically, this project involves reconstructing a section of the ditch so that it can be used to temporarily retain water and improve efficiency and management throughout the system. The construction includes a new automated check structure, drainage improvements along the east canal bank upstream of the structure, removal of an abandoned bridge /check structure upstream of the proposed structure, removal of another check structure further upstream that is in poor condition and not used any more, and to regrade the bottom of the canal.
After the completion of this design, the Owl Creek Laterals plans to apply for a CWCB Loan to complete the construction of this 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)
1,000	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

Other

No additional measurable results provided

Water Project Justification

The Operational Improvement Project for the Owl Creek Supply and Irrigation Company will not only provide improvements to the Owl Creek Lateral, but it will provide an example of an innovative efficiency project that is relevant to other large irrigation systems throughout the state. The Colorado Ag Water Alliance (CAWA) plans to highlight this and similar projects to show other irrigation districts and ditch companies examples of innovative projects that improve efficiency and water management of irrigation delivery systems.

The needs of water users to irrigate crops are not always in line with the reality of large irrigation systems, irregular water availability, and the logistics of moving water over long distances. Systems are not able to deliver water on-demand and there are inefficiencies. Water managers attempt to address these issues by piping ditches, adding check structures, installing systems like SCADA, and building retiming or regulating reservoirs. In this project, the Owl Creek Supply and Irrigation Company will improve water efficiencies through the construction of check structures and using them to regulate flows throughout the rest of the system.

The Owl Creek Supply & Irrigation Company is a privately owned ditch company that supplies water to privately owned farms and ranches centered around the town of Galeton, Colorado. Per information provided in a study competed by Smith Geotechnical in 1999-2000 titled “Rehabilitation of Owl Creek Ditch Hydraulic Structures” the Owl Creek Lateral conveys irrigation water to approximately 20,000 acres of farmland directly or thru several smaller ditches and laterals that branch off the main ditch.

The Owl Creek Lateral is a carrier ditch and does not own water rights. The 137 shareholders own water in Larimer and Weld Irrigation Company, the Larimer and Weld Reservoir Company, the Windsor Reservoir and Canal Company, and shares in Colorado-Big Thompson water. The farms in this area grow corn (sileage and grain), alfalfa, and operate large livestock and dairy operations.

The canal runs 7 days a week when direct flow river water is in priority. The flows are highest when the direct river flows are in priority, up to a high of 250 cfs. Typically, by mid to late June the direct river flow right is out of priority and the canal flow is primarily made up of stored water, with a flow rate between 60 and 150 CFS. The delivery of reservoir water to the Owl Creek Lateral generally occurs on a 5 day per week operating schedule from mid to late June until the ditch shuts down in early September. Flows throughout the ditch during the season can be inconsistent, as evidenced by Figure 1 (Below) which shows measured flows at the Owl Creek Lateral Flume for the entire 2022 irrigation season.

Owl Creek Laterals is some 40 miles downstream of the start of the Larimer and Weld Irrigation Company Canal. In 2022, the time it took to reach full flows varied from 2 hours and 15 minutes to 8 hours and 45 minutes. Figure 3 shows the time it took to reach full flows on Owl Creek, and the quantity of water that would be required in storage to allow full flow in the canal to be delivered immediately.

This “lag time” in providing full flows to water users on the lateral presents an opportunity where operational efficiency can significantly reduce the amount of time it takes to make deliveries, and achieve water savings through efficiency improvements. In the study “Owl Creek Lateral 2023 Operational Improvement Study” funded by the CWCB, the Board of Directors of the Owl Creek Water and Supply Company were able to see the impact of different alternatives on the efficiency of deliveries (Figure 4). By building check structures and changing operations, different amounts of “storage” can be created in the canal to improve timing of deliveries. This is not considered storage in the traditional sense. The ditch company does not need to apply for a storage right, since all operations will be maintained under the 72-hour rule. In most cases, all of the alternatives would decrease the amount of time it took to deliver water from hours to 30 minutes.

During the weekly start-up of deliveries, water is lost from the system because it can take hours for enough volume develop. Over the course of an entire irrigation season, those losses can amount to 800 to 1,000 AF. Alternative A outlined in the feasibly study will mitigate these losses because the full flow of water would be available earlier than the current operation.

Similar projects have been implemented around the state with the support of the Colorado Water Conservation Board, Colorado River Water Conservation District, and federal agencies like the Bureau of Reclamation:

• Fire Mountain Canal Regulating Reservoir
• Orchard Mesa Irrigation District Regulating Reservoir
• Center Clipper Ditch Regulating Reservoir
• Grand Valley Water Users Association Check Structures

The Colorado Water Plan supports these types of projects, calling for “improvements to agricultural diversion and conveyance infrastructure can increase water delivery to farms and increase predictability of deliveries” (CWP, 1940). The South Platte Basin Implementation Plan also supports “the efficient use of water can help agriculture stretch available supplies and can help delay or prevent the need for cities to purchase senior agricultural water rights. Irrigation efficiency improvements that reduce the nonbeneficial consumption of water can help increase the irrigation supply provided to crops” (South Platte BIP, 69).

Once design for this project is complete, The Owl Creek Water & Irrigation Company plan to apply for a CWCB Loan to finance the construction of the project. The Company has received CWCB Loans in the past and the construction project will not require a 404 Permit from the Army Crops of Engineers because this project falls under a nationwide exemption. Section 404(f) of the Clean Water Act identities “construction and maintenance of irrigation ditches” as exempt as long as the activities do not represent a “new use” of the water or result in a “reduction in reach or impairment of flow or circulation of regulated waters.”

Related Studies

In 2023, The Owl Creek Water and Irrigation Company was awarded a CWCB grant from the Local Capacity Program. In 2024, Wayne E. Eckas, P.E. completed "Owl Creek Lateral 2023 Operational Improvement Study” with funding from the aforementioned grant. That study is included with this application.

Taxpayer Bill of Rights

NA