Middle Colorado Agricultural Collaborative Phase 2

Final Report

Prepared for: Colorado Water Plan-Watershed Health and Recreation
Attn. Chris Sturm

June 19, 2024

Trout Unlimited

CMS Number: 186621 (PDAA 2024*2472)

Grant Amount: $373,830.00

Prepared by: Richard Van Gytenbeek

TROUT UNLIMITED

Introduction

The goal of the Middle Colorado Agricultural Collaborative (MCAC) is to continue opening Elk and Canyon Creeks to spawning/migrating fish from the Colorado River main stem by working with agricultural water diverters to make their diversion structures fish friendly. Diversion structures can be modified to accommodate fish passage through a wide range of possible upgrades from simple raised downstream riffles (rock ramps) to completely new structures. In addition to the focus on fish passage Trout Unlimited strives to accommodate the needs of irrigators by incorporating infrastructure upgrades that improve agricultural efficiency and operation and maintenance of the structure and may help to improve environmental flow conditions.

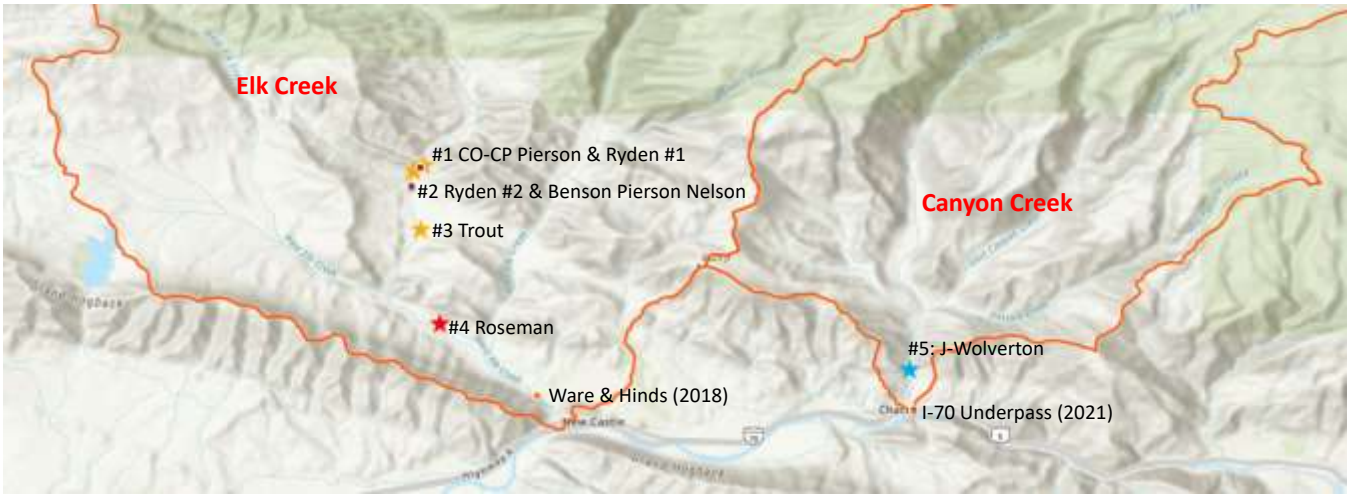
To attain this goal Trout Unlimited initiated a three-phase project to ultimately upgrade five identified irrigation diversions to improve diversion efficiency and enable fish passage. This final report closes Phase 2, the construction drawing phase.

Background

Historical Background

TU has completed two successful projects on Elk Creek (Ware and Hinds Fish Passage-2018) and Canyon Creek (Fish Passage-2021) respectively. These projects have been successful both in the eyes of the agricultural community and environmental community. Our partner Middle Colorado Watershed Council (MCWC) has completed an Integrated Water Management Plan (IWMP) for the Middle Colorado River which identified 25 different irrigation diversions that were fish barriers in the basin. Some of these diversions are in the subject project basins. Many have been vetted by the agricultural community, agency biologists and the environmental community as prospective projects. The MCAC project has furthered this effort by initiating a three-phase process designed to continue working with agricultural partners to mitigate fish passage issues and improve irrigation infrastructure.

Phase 1 (Partnership building and Conceptual Planning) was completed prior to Phase 2. Phase 1 identified 4 irrigation diversion upgrades in Elk Creek and one in Canyon Creek. TU worked with the owners to finalize concept plans and continue to develop those plans. Phase 2 transitioned the Concept Plans to full Construction Drawings. Construction Drawings have been completed, sent to bid and qualified contractors have been selected to complete construction is scheduled for Fall 2024.



Project Goals.

The goal of the MCAC project is to continue to upgrade irrigation diversion structures in the Elk and Canyon Creek basins to increase diversion efficiency and ensure fish passage at all flow levels. The Ware and Hinds Fish Passage Channel and the Canyon Creek Fish Passage Channel projects initiated the five MCAC projects. When these projects are completed, 8 miles of Elk Creek and 3 miles of Canyon Creek will be open to spawning fish migrating from the Colorado River mainstem.

Methods

As discussed, this project was the outgrowth of Phase 1 (conceptual planning) being developed into Phase 2 (Construction Drawings). All grant and matching funds were used to complete the Construction Drawings for the five identified projects and to enable owner input and approval throughout that process. Owner input and approval was initiated at the 33%, 66%, and 90% completion levels for the Construction Drawings.

Deliverables

Deliverables for the MCAC-Phase 2 project were fully engineered and stamped Construction Drawing sets for each of the five projects. Links to these sets follow:

Middle Colorado Ag Collaborative - CO & CP Pierson (Project 1) - Stamped Set.pdf

Middle Colorado Ag Collaborative - Ryden No. 2 (Project 2) - Stamped Set.pdf

Middle Colorado Ag Collaborative - Trout Ditch Relocation (Project 3) - Stamped Set.pdf

Middle Colorado Ag Collaborative - Roseman (Project 4) - Stamped Set.pdf

Middle Colorado Ag Collaborative - Wolverton (Project 5) - Stamped Set.pdf

Middle Colorado Ag Collaborative - Project Specific Specifications.pdf

Conclusions and Discussion

MCAC-Phase 2 objectives were fully met. The Construction Drawings have been completed. The Construction Drawings have gone to bid and general contractors have been selected to complete project(s) construction in Fall 2024. Because of increasing material costs during Phase 1 and 2, only Projects #1, #2 and #4 will be constructed this fall. However, with full Construction Drawings being completed for Projects #3 and #5, construction funding will be must easier to secure in the future. TU intends to fully pursue funding and completion of these two projects for construction in 2025-2026.

Actual Expense Budget

The actual project budget was spent according to the originally submitted project budget. No additional funding was needed, and all grant and match funding monies were spent.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Exhibit C

Budget and Schedule

Preparation Date: 8-8-2023

Name of Grantee: Trout Unlimited

Name of Water Project: Middle Colorado AG Collaborative Phase 2

Task No.	Task Description	Estimated Task Start Date	Estimated Task End Date	Grant Funding	Match Funding	Total
1	Select Project Engineer	7/1/2023	8/14/2023	$0.00	$26,170.00	$26,170.00
2	Owner Engagement	8/14/2023	9/1/2028	$7,099.00	$2,085.00	$9,184.00
3	Topo Surveys	8/14/2023	9/1/2028	$15,086.00	$4,430.00	$19,516.00
4	Construction-Ready Plans	8/14/2023	9/1/2028	$271,778.00	$79,805.00	$351,583.00
5	Obtain Required Project Permits	11/1/2023	9/1/2028	$31,107.00	$9,135.00	$40,242.00
6	Project Management	7/1/2023	9/1/2028	$48,760.00	$4,545.00	$53,305.00
			Total	$373,830.00	$126,170.00	$500,000.00

Appendix

Colorado Parks and Wildlife-Fish Survey-Elk Creek

Elk_Creek_Survey_Summary.docx.pdf

This recent survey confirms that since the Ware and Hinds Fish Passage Channel was completed in 2018 that fish populations above that diversion have increased substantially. Of particular note is the increase in younger fish which indicates that spawning fish are successful, and that the system is harboring juvenile trout that will recruit to the Colorado River main stem populations.

Colorado Parks and Wildlife-Fish Survey-Canyon Creek

2024_CanyonCreek_WolvertonDitch_CPW

This recent survey concludes that the Canyon Creek Fish Passage project completed in 2021 under I-70 has had a positive impact on Rainbow trout in the upper year classes. This indicates that these fish are now able to negotiate the culvert system and are spawning between the culvert and the J-Wolverton diversion. Once the Wolverton project is complete it will open up another mile (possibly more) of the Canyon Creek system.