COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Supply Reserve Fund - Basin

Water Project Summary

Name of Applicant	Colorado Ag Water Alliance	
Name of Water Project	South Side Highline Ditch Diversion Project	
Basin Account Request Subtotal		$24,591.00
Applicant Cash Match		$12,296.07
Applicant In-Kind Match		$0.00
Basin Requests		
Yampa/White/Green		$24,591.00
Sources of Funding		
Colorado River District		$12,295.00

Grant Details

Water Project Justification

This project meets the following goals in the Yampa-White-Green Basin Implementation Plan:

• Protect the YWG Basin from compact curtailment of existing decreed water uses and some increment of future uses
• Restore, maintain, and modernize water storage and distribution infrastructure
• Protect and encourage agriculture uses of water in the YWG Basin within the context of private property rights
• Quantify and protect environmental and recreational water uses

This project was also identified in the Diversion Infrastructure Assessment under the White River Integrated Water Initiative. One of the goals in the initiative is to “Identify opportunities for creation or improvement of infrastructure to support efficient consumptive and non-consumptive uses,” which this project does.
The South Side Highline Ditch is decreed from 33 cfs directly from the White River and irrigates 550 acres of hay fields and pastures. A portion of the water rights on the ditch are Pre-Compact (see below).

Volume Adjudication Date Appropriation Date
4 5/10/1889 4/1/1885
4 5/10/1889 5/1/1885
4.7 5/10/1889 5/5/1885
20.3 9/8/1947 4/2/1944

According to the Diversion Infrastructure Assessment, the concrete around the headgate structure was crumbling and leaking badly, and the four foot parshall flume was also rusted out and in need of replacement. The existing

metal headgate with concrete wall and culvert and the measuring devices are extremely old and are badly in need of replacement in order to comply with the new water measurement rules. Repairing the headgate structure for this ditch, will ensure the continued irrigation of the lands under the South Side Highline Canal, and all the benefits derived from flood irrigation. Modernizing these structures will protect these senior and Pre-Compact Water rights from compact curtailment and future calls on the river. It will also ensure the continued delivery of irrigation water to 550 acres that support four multi-generational ranches, two of which are under conservation easements.

In the Diversion Infrastructure Assessment, the team scored environmental and infrastructure aspects of each diversion from 1 to 4 with the lower score representing the greater opportunity for a multibeneficial improvement project (see below):

Category Ranking (1-4)
Control Structure 2
Measuring Device 2
In-Stream Structure 3
Fish Entrainment 2
Erosion and structures 2
Fish Passage 3
Vegetation 3

The assessment included the following specific recommendations:

• Consider removing the old, crumbling concrete headgate structure and designing and placing a new sturdy concrete structure to better serve the overflow and headgate function.

• Ultimately consider replacing the flume with a newer, more modern flume to ensure good placement, better laminar flow, eliminate erosion and achieve a more accurate reading.

While this project serves irrigators and the water is only decreed for irrigation, there are significant environmental benefits from the seepage of the ditch and flood irrigation. According to Colorado Parks and Wildlife staff, flood irrigation has clear and tangible benefits to a variety of species. Sandhill Cranes are drawn to and heavily use flood irrigated fields throughout the middle and upper White River basin. They use flooded fields to both forage in and night roost in. Just upstream of the Franklin Ranch, is the Forrest Nelson property where during fall nearly all the breeding cranes in the White River Valley use those fields almost nightly during pre-migration staging.

The diverse ponding and application of flood irrigation also has lots of habitat benefits for a number of waterfowl as well as amphibians like chorus frogs and northern leopard frogs. Like cranes, many species of waterfowl use flood irrigated fields for both foraging and resting. The bald eagle density on the middle White River is extremely high and there are several active bald eagle nests within this project area or very nearby. They, of course, use cottonwood trees for nesting and roosting in this area, and any management practice that promotes the continued health and persistence of a robust cottonwood community along the river is beneficial to this species. River otters are present on this section, and currently listed as State Threatened.

We see the direct and tangible benefits to deer and elk, as we see them using irrigated fields to forage in regularly throughout much of the year. There are numerous other bird species that are commonly encountered in and around flood irrigated fields and we can draw a clear link between the practice and their productivity. Some species that come to mind are Wilson's snipe, bobolink (rare in NW Colorado), savannah sparrow, and in the intact riparian areas the usual suite of neotropical migrants that we expect to encounter.

The South Side Highline Ditch also participated in the recent return flow study in the White River titled "Quantifying hydrologic fluxes in an irrigated region characterized by groundwater return flows," conducted by the White River Conservation District and Dr. Ryan Bailey of Colorado State University. The study determined that "of the water diverted from the White River for irrigation, approximately 75 % returns to the river. The 25 % irrigation efficiency is extremely low but, through extensive groundwater recharge, creates conditions conducive to groundwater return flow to the White River. The aquifer therefore acts as a slow-release reservoir of diverted river water to maintain streamflow and its ecosystem function during post-irrigation months."
Using the data from the previously mention study, approximately 75% of the water diverted by the South Side Highline Ditch isn't consumed by the irrigators and returns to the White River slowly over the rest of the year. The irrigated acreage under the ditch, act like a slow-release reservoir, providing water for other consumptive and non-consumptive uses downstream. From the study, we can assume that the total volume of water diverted by the ditch during the study years returning to the river:

Year Total Diversions (AF) Returns To the River (AF)*
2024 4,168.11 3,126.08
2023 2,964.50 2,223.38
2022 6,004.15 4,503.11
2021 5,891.25 4,418.44
2020 6,243.15 4,682.36
*based off the 75% approximation

Maintaining water deliveries on the South Side Highline Ditch, not only allows the irrigators to continue to flood irrigate, but allows those acres to act as "storage" for thousands of acre-feet every year that will be used later in the stream by other water users.

Applicant & Grantee Information

Name of Grantee: Colorado Ag Water Alliance
Mailing Address: 10440 W Fair Unit C LIttleton CO 80127

Organization Contact: Greg Peterson
Position/Title:
Email: coagwater@gmail.com
Phone: 720-244-4629

Agency Information

Agency Type	District
Current Assessment	
Number of Shareholders or Customers	
Number of Shares	
Number of Taps	
Average Monthly Water Bill	
Annual Water Delivery (acre-feet)	

Description of Grantee/Applicant

Association of agricultural organization focused on education and outreach. Our mission is to support and preserve irrigated agriculture

Location of Water Project

Latitude	40.036661
Longitude	-107.878122
Lat Long Flag	
Water Source	White River
Basins	Yampa/White/Green
Counties	Rio Blanco
Districts	43-White River Basin

Water Project Overview

Major Water Use Type	Agricultural
Type of Water Project	Construction / Implementation
Scheduled Start Date - Design	8/1/2026
Scheduled Start Date - Construction	8/1/2026

Description

In 2024, South Side Highline requested support from the White River Integrated Water Initiative Diversion Assessment Team to assess the condition of the ditch and its infrastructure. The diversion assessment team found that the ditch diversion and other infrastructure need improvements, which includes replacing the existing metal headgate with concrete wall and culvert and four-foot parshall flume. According to the Diversion Infrastructure Assessment and Colorado Parks and Wildlife, this project will help maintain and senior water right that supports hundreds of irrigated acres and valuable habitat, but improve fish entrainment, fish passage, and erosion.

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)
550	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

maintain 550 ares of irrigated agriculture