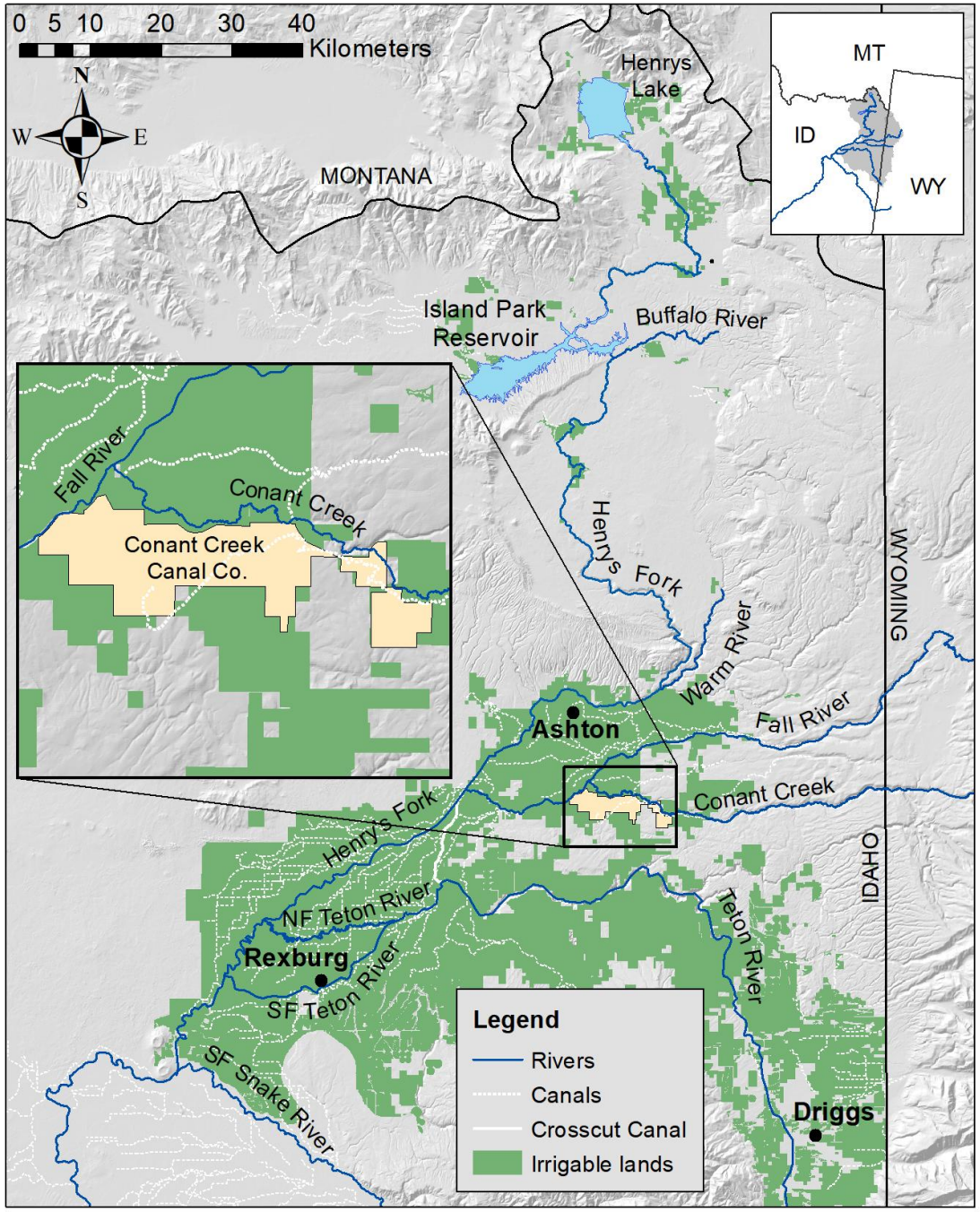
Conant Creek Canal Lining Project & Remote Control Automation

Henry's Fork Watershed Council, May 13th 2025

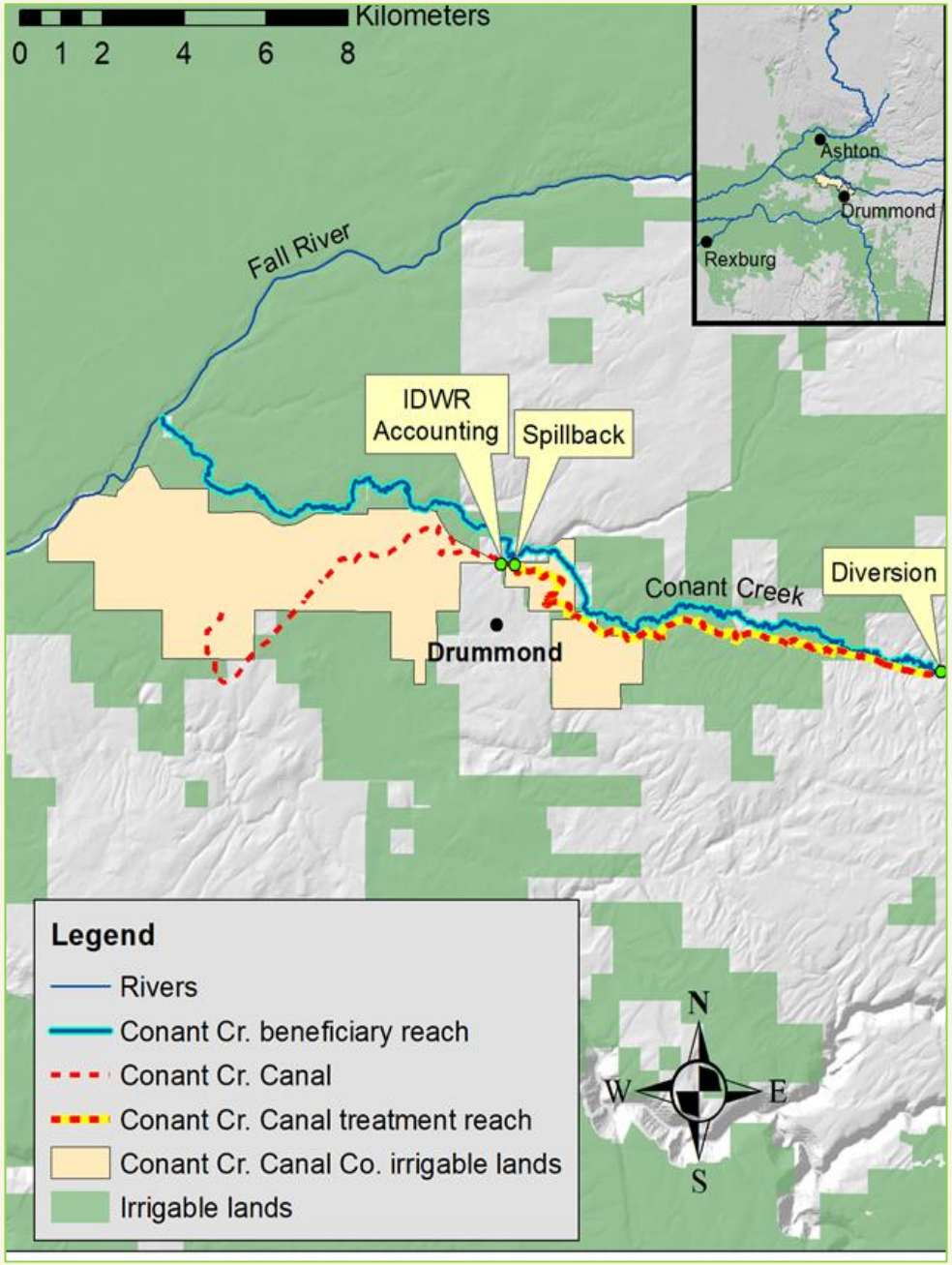
Project Overview

- **Modernize Aging Irrigation Infrastructure**
  - Install 5.7 miles of ditch liner to eliminate seepage loss.
  - Replace concrete diversion & spillback structure headgates.
  - Add remote control capabilities for precision water delivery.
- **Conserve water for farms & fish**
  - Enhance irrigation reliability for 3,200 acres of highly productive farmland.
  - Increase streamflow in Conant Creek throughout the summer.
  - Store more water behind Island Park Reservoir.
- **Multi-year partnership-driven project**
  - 6 years from start to finish.
  - Funding contributions from Federal, State, Local, and Private sources.

Conant Creek



- Conant Creek is located roughly 5 miles southeast of Ashton, Idaho in Fremont County.
- It originates in the Teton Mountain Range near the Idaho-Wyoming border. Flows west until it meets the Fall River.
- Critical habitat for an array of cold-water fish species. Historically, Yellowstone Cutthroat Trout.



Conant Creek Canal Company

- The Conant Creek Canal consists of three primary reaches: 1) the point of diversion from Conant Creek. 2) the spillback to the Creek. 3) the end of the canal and terminal pond.
- The headgate is used only for coarse delivery of water and is adjusted a couple times per irrigation season.
- Precise delivery to the water users is controlled by adjustment of a gate at the spillback point.
- Water spilled back to the creek is not counted as part of the canal company's water use.

Canal Infrastructure (Before)

Canal Infrastructure (Before)

Canal Infrastructure (Before)

How did we get Started?

Henry's Fork Basin Study (2015)

- U.S. Bureau of Reclamation completed the Henry's Fork Basin Study as a planning document.
- Intended to be a template for future actions to ensure reliability and sustainability of water resources in the basin.
- These options include small off-stream storage reservoirs, modest enlargement of existing reservoirs, managed aquifer recharge, market-based administrative exchanges in time and place of water use, canal linings and piping(North Fremont County Region), and automated irrigation delivery infrastructure.
- The most viable options in the Basin Study are relatively small in scale and designed to be implemented and managed in conjunction with other efforts at the local level.

Canal Measurements

On 20 August 2019 we measured discharge in the canal system at four points:

- **Diversion**
- **Immediately upstream of the spill structure,**
- **Immediately downstream of the spill structure**
- **Immediately upstream of the terminal pond.**

We measured discharge with an Acoustic Doppler Current Profiler (ADCP), using the standard method of two passes across the canal in each direction.

Canal Measurements

Date time	Location	Discharge (cfs)	ADCP error (coefficient of variation)
2019-08-20 14:30	Point of diversion	27	18.5%
2019-08-20 12:45	Upstream of spill	13	2.0%
2019-08-20 11:45	Downstream of spill	9	9.2%
2019-08-20 10:45	Terminal pond	9	51.0%

What we discovered – The basis for partnership

- **Canal lining is estimated to eliminate 2,850 ac-ft/year in canal seepage and increase flows in Conant Creek by 13 CFS (~ 39% increase during irrigation season).**
- **Saving 1,987 ac-ft/year of storage water in Island Park Reservoir (cooler water, better water quality, improved winter flows, etc.).**
- **Improving aquatic habitat, connectivity, and ecological resiliency for cold-water species in both Conant Creek, Fall River, and the Henry's Fork River.**

- **The Conant Creek Canal Company service area will see an increase in water availability for shareholders.**
- **Lining protects the canal from erosion and aggregate degradation that was leading to breaches and washouts.**
- **Remote control allows the canal company to operate the headgate more precisely and respond to flow needs in real time.**
- **Energy and labor savings.**

WaterSMART Water & Energy Efficiency Grant

Submitted November 2021 & Awarded in May 2022

50% Cost Share

Matching funds must be secured through partners, in-kind contributions, or additional grants.

Water Savings

Awards must demonstrate quantifiable water savings.

Federal Procurement

The project must follow procurement standards such as Buy In America

NEPA

Before Construction begins, must undergo environmental review and clearance.

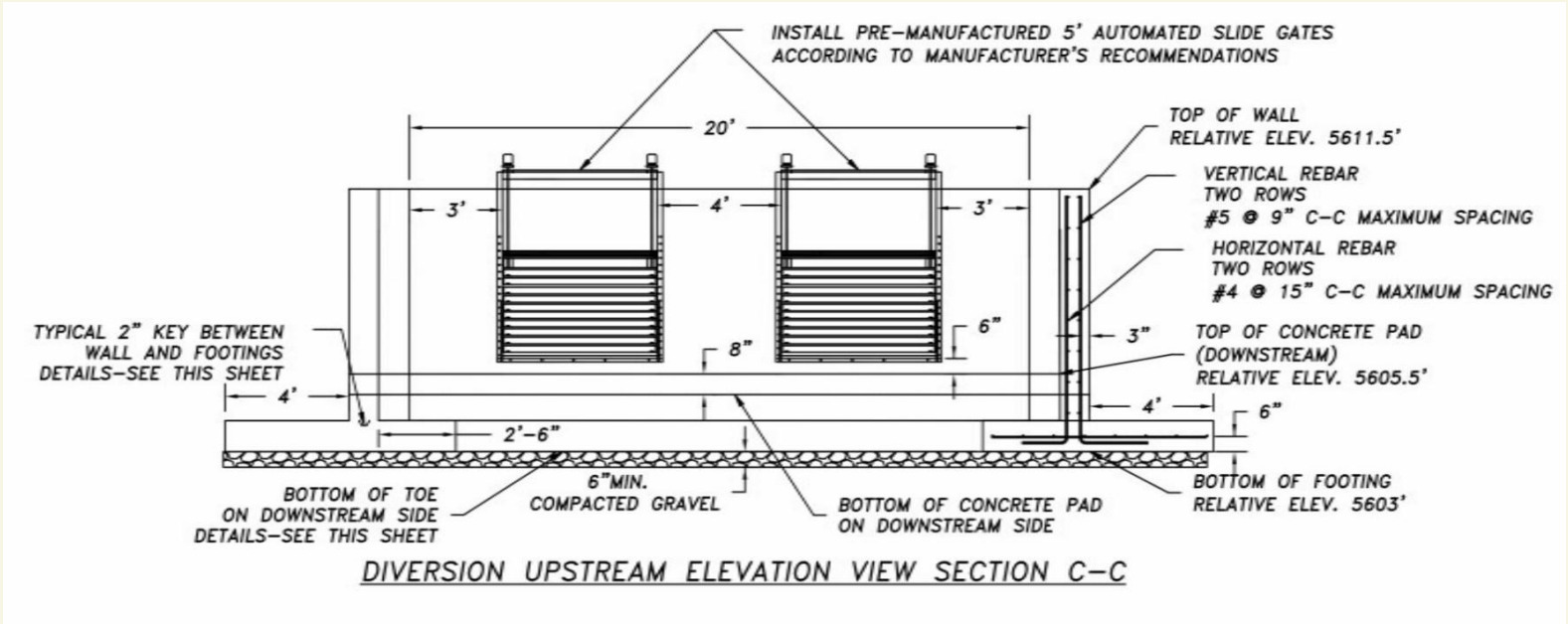
Funding Agreement

Reclamation must issue a formal Notice to Proceed.

Cost & Fundraising

- **Total project budget of $2.17M**
- **$1.12 M Federal funding secured through the WaterSMART WEEG program. (50%)**
- **2 years of funding from the Idaho Soil and Water Conservation Commission Water Quality Program for Agriculture for engineering design plans and cost share on diversion structures $35K & $75K.**
- **Awarded $499K from the IWRB Aging Infrastructure Grant which represents 23% of the total project.**
- **$165,000 from IDEQ State Ag BMP Fund.**
- **The remaining non-federal match from three entities in the form of cash or In-kind, Henry's Fork Foundation, Conant Creek Canal Company, and Fremont-Madison Irrigation District.**

Pre-Construction



Pre-Construction

Canal Infrastructure (During)

Canal Infrastructure (During)

Canal Infrastructure (After)

Canal Infrastructure (After)

In Conclusion

- Federal funding was essential to the success of the Conant Creek Canal Project, providing the financial resources needed to implement large-scale infrastructure improvements.
- Without this support, key elements like canal lining, flow measurement technology, and diversion upgrades would not have been feasible for local partners alone.
- I would like to thank all partners, contractors, State agencies, Federal agencies, and most of all Conant Creek Canal Company.

Thank You

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