Modernizing Idaho's Water Infrastructure

An Ongoing Story Series on the Idaho Water Resource Board's Aging Infrastructure Grant Program Issue No. 7

Fremont-Madison Irrigation District

Project description: Fremont-Madison Irrigation District partnered with five canal companies and an irrigation district to craft a winning grant proposal to upgrade and modernize 11 existing irrigation diversions with automation equipment.

Partners included the Consolidated Farmers Canal Company, Enterprise Irrigation District, Salem Union Canal Company, Southeast Idaho Canal Company, Rexburg Irrigation Canal Company, and the Teton Island Feeder Canal Company.

Once the new automation equipment is installed, it connects to the Fremont-Madison District's existing Supervisory Control and Data Acquisition (SCADA) system in the FMID office. This allows District officials to monitor diversion data and make flow changes from the office.

"This project is important to us because it will help us conserve water, reduce our carbon footprint and make our water deliveries more consistent and precise," said Aaron Dalling, Project Manager, for the Fremont-Madison District. "This also result in better relationships with our partners."

New headgate automation equipment installed on the Farmers Friend Canal in the Henrys Fork Basin (Courtesy Aaron Dalling/FMID).

- ***Type of project:*** Installation of new headgate automation equipment on 11 irrigation diversion structures
- ***Location:*** St. Anthony to Ashton area in the Henrys Fork Basin
- ***Total project cost:*** $232,873
- ***AIG:*** $58,200
- ***Other partners:*** Bureau of Reclamation WaterSmart grant: $75,000
- ***Start date:*** May 2023
- ***End date:*** October 2023

Project benefits: Based on our past experience with installing automation equipment on canal diversions we believe we can average between 3-10 acre-feet of water savings every day during the peak of the irrigation season for each of the 11 headgates involved in this project.

Using the peak dates of our irrigation season from June 1-Sept. 15, this equates to a total water savings for this project of between 3,861-acre feet and 12,871-acre feet.

This water savings will be primarily seen in Henry's Lake, Island Park and Grassy Lake Reservoirs.

"Keeping water in these reservoirs will benefit all water users in the Upper Snake Reservoir system and help us be more resilient in potential subsequent drought years," Dalling said.

Keeping water in the reservoirs will also benefit fish habitat in the Henry's Fork River. More water held in the reservoirs during the irrigation season directly results in higher

Fremont-Madison District (continued)

winter flows in the river. These winter flows are critical for the Henry's Fork fishery.

The 11 headgate automation retrofits will be installed in the following locations:

- Four on the Fall River Canal system.
- One on the Farmers Friend Canal
- One on the Salem Union Canal
- One on the Teton Island Feeder Canal
- One on Consolidated Farmers Canal
- One on the Enterprise Irrigation District Canal
- One on the Rexburg Irrigation Canal

In total, these diversions supply irrigation water to nearly 1,600 diversions, irrigating 49,223 acres of highly productive farmland. The primary crops grown in these areas include high quality potatoes, wheat, barley and alfalfa. "These delivery systems are highly complex. Increasing our precision in water management will be very beneficial," Dalling said.

Above: Automattion equipment installed on the Teton Island Feeder Canal. Right, automation installed on the East Branch, East Teton, from the Crosscut Canal. (Courtesy Aaron Dalling/FMID).

One of the biggest benefits of this project is that it will significantly improve water reliability for those towards the end of the delivery systems, he said.

"We will significantly improve water reliability to those on the lower half of the delivery system. This will prevent significant conflict by not shorting water users during critical times. The benefits of this improvement cannot be overstated," Dalling said.

"We believe this project is very economically feasible with the help of the federal and state grants. Canal Automation was named on the Henrys Fork Basin Study completed in 2015 as one of the most economic methods of conserving water in the Henry's Fork Watershed.

"The project has already saved the watermasters and ditch riders a ton of time," he continues. "It allows them to focus on the needs of the individual irrigations, without the constant need to travel to the top of the canal to adjust the headgate or in some cased to check the flow rate."

For more information, contact Aaron Dalling, aaron.fmid@myidahomail.com or 208-624-3381.