



Modernizing Idaho's Water Infrastructure

An Ongoing Story Series on the Idaho Water Resource Board's Aging Infrastructure Grant Program **ISSUE NO. 17**

Grindstone Butte Mutual Canal Co. Water and Energy Efficiency project

Overview: Grindstone Butte Mutual Canal Co. is a high-lift pumping operation that delivers irrigation water via an earthen canal to a large farm with two tenants in the Grindstone Butte area near Glens Ferry, Idaho.

The Grindstone Canal is used to distribute natural flow from the Snake River to irrigate approximately 12,000 acres of productive agricultural land.

Crops typically grown in the area include onions, mint, potatoes, corn, beans and timothy hay.

Established in 1963, Grindstone Butte Mutual Canal Co. operates and manages a pumping station located on the Snake River. Water is lifted to the top of the butte from the pumping station and transported via a 4.5-mile-long pipeline to an open canal used for water delivery.

The maximum diversion rate for the pump station is 180.3 cubic foot per second (cfs) or 80,919 gallons per minute (gpm).

The Challenge: There are significant water seepage losses in the canal, which have been confirmed by recent pumping tests, officials said. "We



Grindstone Butte Canal is saving water and energy by modernizing its canal. (courtesy Bret Andersen)

- **Type of project:** Water and energy efficiency project.
- **Location:** Grindstone Butte, near Glens Ferry, Idaho
- **Total project cost:** \$5.5 million
- **Idaho Water Resource Board Aging Infrastructure Grant:** \$1.5 million
- **Water savings:** 6,141 AF/yr
- **Energy savings:** 5.8M kWh
- **Start:** October 2024
- **Finish:** June 2025

estimate a minimum seepage loss of 10 percent, although it may be higher when the canal is full," officials said.

The canal seepage is significant because it crosses through highly permeable soils such as sandy silt and gravelly soils.

The Solution: Modernizing the Grindstone Canal for a distance of 11.6 miles with a High-Density Polyethylene (HDPE) liner. The project is expected to result in an immediate water savings of approximately 51 acre-feet of water per day (25.8 cfs) or approximately 6,141 acre-feet annually during the typical 120-day irrigation season. As



Modernizing Idaho's Water Infrastructure

An Ongoing Story Series on the Idaho Water Resource Board's Aging Infrastructure Grant Program **ISSUE NO. 17**

Grindstone Butte Canal Co. Water and Energy Efficiency Project (cont.)

a point of reference, this is enough water to cover 4,652 football fields with a foot of water. Upon project completion, the lined canal will experience negligible water losses.

Project Benefits: The project will conserve valuable water above Swan Falls Dam, which will help the state maintain minimum flows in the summer as required by the Swan Falls Settlement Agreement.

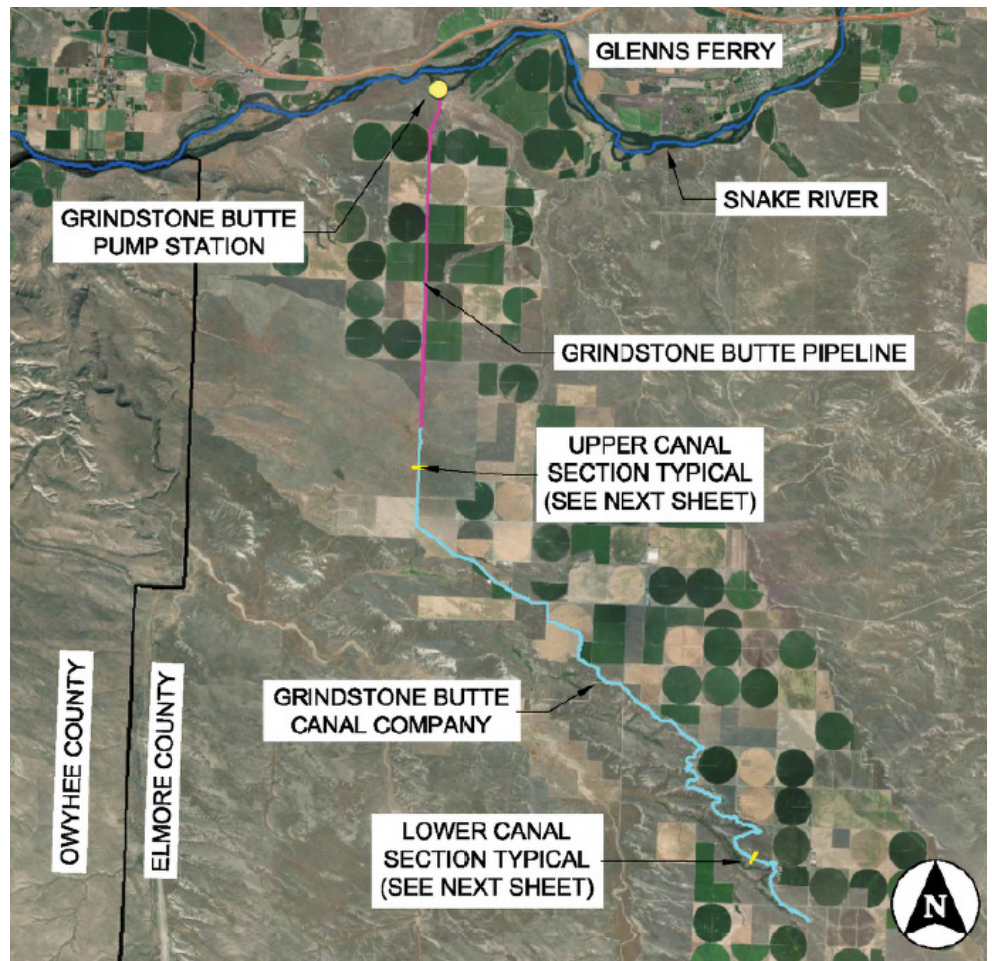
Power savings: The project will reduce the amount of electricity Grindstone uses by an estimated 5.8 million kilowatt hours (kWh) per year, enough electricity to power 420 homes. This will result in saving more than \$686,000 per year, which the farmers can then use to make additional improvements and efficiencies to the water-delivery system, officials said.

The water and power savings will help to ensure the sustainability of farming in the Grindstone Butte area.

The project will indirectly benefit the wider community because the water conserved in the Snake River will also improve water quality and enhance drought resiliency and sustainability for downstream users.

Maintenance savings: Estimated maintenance costs will decrease because moss and sediment accumulation will decrease after the liner is installed. Cost savings are estimated to be \$29/year/acre in maintenance for the canal or \$348,000 per year savings for the farmers.

For more information, contact Bret Andersen, bret.andersen@nuveennc.com.



Above: Map of the Grindstone Butte irrigation system. Below, the Grindstone Butte Canal following the installation of the new HDPE liner. (Photo courtesy Bret Andersen)



For more information go to idwr.idaho.gov