



Modernizing Idaho's Water Infrastructure

An Ongoing Story Series on the Idaho Water Resource Board's Regional Water Sustainability Projects **ISSUE NO. 4**

Nampa & Meridian Irrigation District Ridenbaugh Canal Modernization Project

Overview: The Ridenbaugh Canal system is an integral component of the Treasure Valley water supply. It is the second largest irrigation conveyance system in the Ada and Canyon county area, diverting over 500 cubic feet per second (cfs) from the Boise River to deliver water to 46,000 acres of farmland, including lands in greater Boise, Meridian, Kuna, Nampa and Caldwell. The Ridenbaugh Canal system also delivers water to the New York Irrigation District, Settlers Irrigation District, Boise Kuna Irrigation District, and Bureau of Reclamation special contract lands.

The Nampa & Meridian Irrigation District (NMID) was formed in 1904 to acquire, improve, and operate the Ridenbaugh Canal system to deliver water to the District's farmlands. The District serves diverse agricultural, urban, suburban, commercial, residential and industrial land uses.

Increasing the reliability and efficiency of NMID's diversion will benefit all water users. Continued use of the Ridenbaugh Canal System is vital to the Treasure Valley economy. The canal also reduces groundwater demand in the the Treasure Valley Aquifer System. Incidental recharge from the canal system replenishes the shallow aquifer and maintains drain flows to help serve farms downstream from Caldwell.

Aging infrastructure and Safety issues:



The existing Ridenbaugh Diversion Dam dates to the early 1930s. (Courtesy NMID)

The Ridenbaugh Canal Diversion Dam extends approximately 220 feet across the Boise River, just upstream of the Eckert Road Bridge and Barber Park. The existing diversion dam, built in the early 1930s, is used to raise the upstream water level, allowing water to be diverted from the Boise River into the Ridenbaugh Canal. The dam

consists of concrete piers that create 11 bays in which NMID operations and maintenance staff install stop-logs via a wooden walkway.

An 80-foot-long, wide-bar trash rack in the canal inlet channel adjacent to the river is used to keep large debris from entering the canal. It also collects aquatic weeds that maintenance staff manually remove via access from a walkway. An 18-inch-tall, 500-foot-long concrete wall was installed as a sediment and debris wall parallel to the river in the mid-1930s. With an opening at mid-height on the wall, it can reduce the amount of debris and sediment in the canal.

The existing Ridenbaugh Diversion is nearing the end of its usable life. Operating the existing diversion requires manual installation, removal, and adjustment of groups of 20-foot long check boards. Installing each

- **Type of project:** New diversion dam modernization project
- **Location:** East Boise
- **Total project cost:** \$20.9M
- **Idaho Water Resource Board funding:** \$10.4M
- **Bureau of Reclamation WaterSmart grant:** \$4.7M
- **Start:** October 2025
- **Finish:** December 2027



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NMID: Ridenbaugh Canal Modernization Project (cont.)

board requires teams of three staff members to access the structure, using a wooden access platform and insert the boards forcefully by hand and with hand tools. It's dangerous work.

Replacing the existing structure with a new automated structure is an important part of NMID's plan to improve worker safety, while also providing consistent flows in the river.

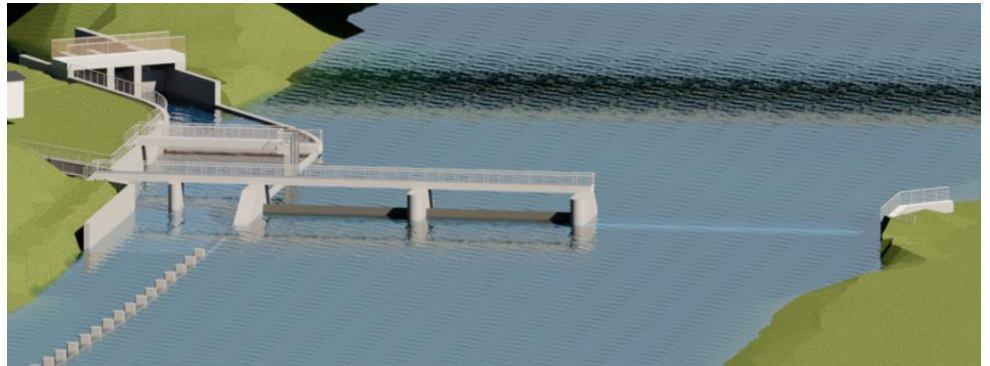
New Diversion Improvements:

NMID will modernize the Ridenbaugh Canal Diversion by:

- Replacing the check boards with two 40-foot crest gates and an 80-foot ogee weir stretching across the Boise River.
- Replacing the majority of the 550-foot sediment control structure and catwalk.
- Replacing the weed rack to manage debris mechanically and reduce the number of fish that can move from the Boise River into the canal system.
- Installing the necessary electrical and mechanical systems to operate the new structure along with automated water measurement and telemetry.

The improvements will significantly improve the timing and precision of NMID's operation, officials said.

Construction: Two-stage temporary cofferdams will be constructed in the Boise River to dewater one side of the river and allow flow through the other side. A curved concrete intake will be constructed on the south bank. The new intake structure will include a sediment settling basin and



Artist rendering of the new Ridenbaugh Diversion Dam and canal intake structure. (Courtesy NMID)

gate to minimize sediment going into the canal. The intake structure will be fitted with six trash rack screens and a conveyor belt to clean the screens. On the left half of the river, two automated 40-foot crest gates will be mounted to the river bottom, allowing floating debris to be flushed downstream in a safe manner.

Automation will allow NMID to adjust automated crest gate heights as needed based on changes in river flows.

On the right half of the river, the 80-foot ogee weir will span from the crest gate to the north riverbank.

Project benefits: Automated control of the Ridenbaugh Diversion Dam will increase operational efficiency in the Boise River by up to an estimated 1,000 acre-feet every year. Additionally, losses due to seepage and over delivery could be reduced by an estimated 12-15 acre-feet annually.

Other benefits:

- **Recreation:** Portage and signage will be included in the project to assist recreators. Improvements to the facility will help exclude public

trespassing. Warning signs will be placed upstream of the dam.

- **Fish:** Working with the Idaho Department of Fish and Game, NMID will install a traveling screen to prevent adult fish from entering the Ridenbaugh Canal.

Flood operations benefits: Replacing the existing diversion with automated gates will allow for better response and management of flood flow conditions. The old diversion becomes inaccessible during high flows and flood conditions as it did in 2017. With the new diversion, the automated gate can be quickly lowered during high flow conditions to reduce flood risks and impacts, pass debris, and limit excess flow diverted into the Ridenbaugh Canal.

Local support: The Ridenbaugh Diversion project has support from IDFG, Boise Project Board of Control, Ada County Highway District, Water District No. 63, the cities of Boise, Nampa, and Meridian, and Boise River Flood Control District #10.

For more information, contact NMID at <https://nmid.org>.