Modernizing Idaho's Water Infrastructure

An Ongoing Story Series on the Idaho Water Resource Board's Aging Infrastructure Grant Program Issue No. 27

Boise Valley Irrigation Ditch Co. Water Efficiency, Safety Project

Overview: The Boise Valley Irrigation Ditch Company (BVIDC) has the distinction of being one of the first successful irrigation companies in the Treasure Valley. The company operates and maintains 5 miles of canal that were first constructed in 1866. The BVIDC was among one of the first irrigation canals built in the Boise Valley, serving pioneer farmers located northwest of downtown Boise.

In 1894, BVIDC split off part of the canal to Farmer's Union Ditch Co. Since that time, Farmer's Union has maintained the diversion structure on the Boise River. BVIDC receives water from Farmer's Union Canal at a headgate located by Willow Lane Park in Northwest Boise.

The BVIDC canal carries a water flow of about 28 cfs, supplying 120 acre-feet water per day to irrigate an estimated 2,700 acres of land, the vast majority of which is urban landscape and small acreages.

The Challenge: Well into its second century of operations, BVIDC faces new challenges. The population of Boise has more than doubled in the last 40 years. Growth and development have led to an increase in building density and urban sprawl.

Because the BVIDC canal flows entirely within the city limits of Boise, the route of the canal runs through prime development ground and busy streets. This has put tremendous pressure on the company with regards to striking a balance between the primary function of delivering irrigation water to shareholders and accommodating a myriad of development projects.

New 48-inch HDPE pipe is placed in the Boise Valley Irrigation Ditch Canal, ready to connect to a junction box. The pipeline sections were covered with dirt and sand to the existing grade. The old open-ditch canal is no longer visible. (photo courtesy Carol Seeley).

- ***Type of project:*** Water efficiency and safety project
- ***Location:*** NW Boise, Idaho
- ***Total project cost (2 phases):*** $602,386
- ***Idaho Water Resource Board Aging Infrastructure Grants:*** $105,811 and $95,794
- ***Start:*** November 2024
- ***Finish:*** March 2026

Safety is a major concern: BVIDC is very concerned with public safety along the canal. "We do not consider it generally safe to operate open-ditch canal in close proximity to high-density developments, such as apartment complexes," officials said. This is a common problem with irrigators throughout the West in

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urban areas.

The Solution: The company has installed a new 48-inch HDPE pipeline in the canal bed for a distance of 1,660 linear feet in two phases. The purpose is two-fold: 1) to mitigate erosion of the canal bank, and 2) to connect two sections of the canal that have been piped within the past 5 years.

BVIDC received an aging infrastructure grant from the Idaho Water Resource Board two years in a row to assist in getting the new pipeline sections installed during the winter of 2024-25 and 2025-26.

Project benefits include:

1. Prevent damage to commercial property on both banks of the canal.

2. Increase public safety adjacent to high density dwellings.

3. Provide increased water supply during drought or low water years.

4. Provide further opportunity for enhancing pedestrian traffic.

Up until recently, pipe installation has largely been done in response to property owners/developers wanting to build as close to the canal as possible. At present, there is approximately 5,900 feet of corrugated metal pipe installed in the canal. Most of this pipe was installed roughly in a 10-year period in the 1980s and 1990s.

In the past five years, BVIDC has actively been installing a superior alternative, 3,800 feet of 48-inch High-Density Polyethylene (HDPE) "triple wall" pipe with a SaniTite™ gasket system. BVIDC also has replaced nearly 1,000 feet of deteriorated metal pipe with new, more durable pipe. Pipe placement and construction has been accomplished by in-house BVIDC personnel and outside contractors.

Above, BVIDC in-house personnel pour concrete for a junction box near Ellens Ferry Drive in NW Boise. Inset: completed junction box has gates for a lateral water line.

Construction: Pipe will be bedded with ¾ minus rock chip to a minimum depth of 50-60 percent of pipe diameter. Pipe will be back-filled with sand to a minimum depth of 12 inches above the top of the pipe.

At a number of key canal junctions, a reinforced concrete junction box was built to join installed HDPE pipe to existing metal pipe. The junction boxes are eight feet square and vary in height from seven to nine feet. Junction boxes will be covered with 5-pound expanded metal, steel reinforced, and fitted with a lockable access door for maintenance.

With grant funds from the Idaho Water Resource Board, BVIDC has been able to perform a larger amount of work than would be normally possible with existing BVIDC funding sources, officials said.

BVIDC has been in dialogue with the City of Boise about potentially allowing the city to build a pedestrian pathway on top of the generally flat, graveled surface that caps the old open ditch, officials said.

For more information, contact Mike Turk at gmiketurk@msn.com.