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Contractors dig a trench in the Clover Tract near Filer in preparation for irrigation pipe installation. The Twin Falls District sponsored the project, funded by NRCS and SWC WQPA grants. (courtesy Dustin Diaz, SWC)

TWIN FALLS DISTRICT SPONSORS MULTI-PHASE IRRIGATION EFFICIENCY PROJECT IN CLOVER TRACT

By Steve Stuebner
and Cindy Snyder, Twin Falls SWCD

Conserving every drop of water — and finding ways to use it and distribute it more efficiently — have been a priority for the Twin Falls Soil and Water Conservation District since it was formed in the early 1950s.

Recently, the Twin Falls District assisted irrigators served by the Clover Irrigation Pump Company by sponsoring a $300,000 grant project funded by the state Water Quality Program for Agriculture (WQPA), administered by the Idaho Soil and Water Conservation Commission.

The grant was awarded to the Twin Falls District by the SWC Board of Commissioners in June 2022. It's the first of three phases that the Twin Falls District is sponsoring over the next three years to convert an aging open canal irrigation system to an enclosed, pressurized underground pipeline system for about 65 shareholders farming on the 3,900-acre Clover Tract.

The old leaky mainline will be replaced by underground pipelines, and the main pump station will be replaced by several smaller, pump stations located along the High Line Canal to save on energy costs and reduce the size of pipe needed to convey the water, said Larry Meyer, a Twin Falls District farmer and supervisor.

The Clover project already has received a $3 million Water Smart grant from the Natural Resources Conservation Service (NRCS) through the Environmental Quality Incentive Program (EQIP) to convert farms irrigating with surface water to pivots. The total cost for Phase 1 is $774,000, including contributions from NRCS and $183,600 in landowner cost-share contributions.

Construction of Phase 1 of the Clover project is now under way and will be completed before the beginning of the irrigation season in April, Meyer said. Phase 1 focuses on the east side of the Clover Tract, covering 900 acres of farmland, and the next phase will focus on the west side.

"The project has to be operational by spring. We have to have it done before the irrigation season begins,"

he said.

Meyer has served on the Twin Falls District board for nearly 30 years and farms in the Clover Tract. When a six-foot section of the irrigation mainline broke in the spring of 2021, that was a wake-up call, he said.

"If the mainline breaks during the irrigation season, we have no way to get water to our fields. It would be devastating," Meyer said.

Farmers in the Clover Tract raise silage corn, sugar beets, potatoes, dairy-quality hay, beans, malt, barley and wheat.

NRCS has been working on the project engineering as part of the Water Smart grant, but the agency's engineers have been very busy juggling multiple projects statewide.

Meyer said they have reapplied for an aging infrastructure grant from the Idaho Water Resource Board for the Clover Tract project, and if another round of WQPA grant funds become available, they will apply for those funds as well.

"We're very fortunate now to have these funds available," he said. "We really needed to update our system."

Fellow shareholders have been working on plans to modernize the system for the last 15 or so years but couldn't afford to self-fund such a large project. "We are grateful that this opportunity for grant funding has allowed us to move forward," Meyer said.

A major break occurred in the main irrigation pipe and casing for the Clover Tract in Spring 2021, causing a wake-up call to upgrade the system. (photo courtesy Twin Falls SWCD)

Local Magic Valley contractors Lancaster Trenching is doing the excavation work for the irrigation pipelines, and Sliman and Butler Irrigation Services in Buhl are installing the pipe.

History: The Clover Irrigation Pump Company was formed around 1915 to supply irrigation water to nearly 4,000 acres above the Twin Falls Canal Company's High Line Canal near Filer. The High Line Canal forms the northern boundary of the Twin Falls District. When the Twin Falls Canal was laid out, cropland below the High Line Canal received water thanks to gravity. But power was needed to lift water above the High Line Canal.

Through a system of open ditches, pipes and early electrical power, a group of mostly German settlers

Aerial view of Phase 1 of Clover Tract irrigation efficiency project. (photo courtesy Twin Falls SWCD)

Alex Joslin, the newest Twin Falls SWCD supervisor, discusses the challenges of weed control in an organic bean field. (Courtesy Twin Falls SWCD)

brought water to that land and developed it. Over the years, more farmers have installed pivot sprinklers, and the NRCS Water Smart grant is accelerating that process, Meyer said.

The whole Clover Tract project is expected to save water, energy and reduce sediment flows into the canal, Cedar Draw and the Snake River. In all four phases combined, an estimated 4,000 acre-feet of water will be saved, Meyer said. The updated irrigation system will reduce total suspended solids and total phosphorus within the Snake River and surrounding streams, the WQPA application said.

Soil Health a priority for the Twin Falls District

Farmers on both the Clover and Salmon tracts are experimenting with ways to use cover crops and/or reduced tillage to both reduce wind-erosion potential and boost soil organic matter.

The Twin Falls District has helped nurture these efforts by sponsoring a soil health Conservation Innovation Grant project in 2014 and sponsoring the Magic Valley Soil Health Forum to give early adopters a place to discuss successes and failures.

The Soil Health Forum features more formal meetings during the winter months and impromptu field days during the growing season. During COVID-19, the Twin Falls District pivoted to producing short on-farm virtual tours that were followed by discussions on Zoom that were recorded. Both the virtual field tours and Zoom discussions are archived on the University of Idaho Soil Health web site.

The Twin Falls District also spearheaded a five-year effort to gather soil health data by testing the same fields over a five-year period but alternating between conventional soil tests and tests designed to quantify soil health characteristics.

Alex Joslin, the newest Twin Falls District supervisor, is trying to build soil health on an organic farm just north of Hollister. Weeds, water and nutrients are among his greatest challenges. Joslin has used peas to boost soil nitrate levels and armor the soil during the critical windy spring period ahead of planting an organic commercial bean crop. Using peas as a cover crop also reduces the potential to introduce weed seeds through livestock manure or compost, he said.

Most recently, the Twin Falls District has partnered with the Twin Falls Pollinator Council to improve pollinator habitat in Twin Falls County through increased use of native plants and plants that help improve soil health in urban settings.

Bill Bitzenburg serves as the Twin Falls District chairman. His father served as the District Treasurer for 25 years, so he has deep roots with the Twin Falls conservation district.

One of the challenges the Twin Falls SWCD faces is how to attract new supervisors in a time when there are fewer farmers in southern Twin Falls County and those who are still farming are often serving on multiple boards already. One way is to identify and then sponsor conservation-related projects that help cooperators save money.

"We're an older conservation district," Bitzenburg said. "But we are looking forward to the future by investing

Bill Bitzenburg (left) receives the Doyle Scott Award from Larry Meyer during the 2022 IASCD Convention. (photo courtesy Twin Falls SWCD)

Salmon Falls Dam (courtesy Wikipedia)

in projects such as soil health and modernizing irrigation systems. Conservation is just as important today as it was seventy-two years ago."

Deep History about the Twin Falls District and the Salmon Falls Tract

After the successful completion of the Twin Falls and North Side Canal Companies in the early 1900s, investors searched for another big project. They thought they had found it in the mountains that feed the Salmon River (in Nevada), which becomes Shoshone Creek after the waterbody crosses into Idaho.

Based on snowpack and water yield estimates, investors made plans to build the Salmon Falls Dam and irrigate 100,000 acres through the Salmon River Canal Company. Those projections proved to be wildly optimistic. Not long after the dam was completed, the size of the irrigation tract shrank and shrank again until it was only about a quarter of what backers had promised.

Salmon Falls Dam is 217 feet high and 450 feet long, impounding up to 230,650 acre-feet of water in Salmon Falls Creek Reservoir, according to Wikipedia. When full, the reservoir extends for 17 miles upstream.

Not only did the reservoir seldom fill, but ground water supplies also were limited. People who tried to make a living on the Salmon Tract were hauling domestic water about six months out of each year when the petition to form a conservation district was first circulated in 1950.

Water shortages left many fertile fields uncultivated and rangeland undeveloped. Farmers and ranchers faced other problems: soil erosion off irrigated fields; wind erosion on cultivated fields; water losses in canals and laterals; reduced yields; loss of organic matter; destructive rodent pests; and uncontrolled range fires.

The new Soil and Water Conservation District set forth a simple goal — to promote conservation farming on every acre in the District and thereby build a more stable and prosperous agricultural community.

The District pursued this goal through land-leveling, reorganizing irrigation systems, designing irrigation structures and pipelines, developing ponds for stockwater and irrigation storages, providing seeding mixtures of irrigated pastures and alfalfa grass hay, and conducting range-improvement programs.

On September 17, 1953, the District sponsored a "Conservation Day" on the Buddy Rayl and Glenn Nelson farms in cooperation with the Twin Falls County Farm Bureau and 21 local equipment dealers. The day-long demonstration of sprinkler irrigation systems, pumps, gated pipe and backhoe ditchers, rock pickers, bushbeaters, heavy disk plows, soil surveys, engineering surveys and stubble-mulching equipment reportedly drew 1,500 people.

While those efforts helped, District supervisors realized that what cooperators really needed was a better way to forecast irrigation water supplies so that crop rotations could be intentionally managed. Many stories are told about the early "Salmon Tracters" who would set water at the top of the field at night and then go to sleep at the bottom of the field with a hand or foot in a corrugate. Once the water hit their appendage, they would go back to the top of the field and move the water to a dry corrugate to spread the limited resource as far as possible.

Supervisors began working with NRCS to develop a system of 13

Contractors work on excavation for the Clover Tract irrigation efficiency project. (courtesy Dustin Diaz, SWC)

snow-measuring courses to help gather data needed to set irrigation water allocations for the coming growing season, beginning in 1954. Supervisors skied or rode snow machines to manually check those early snow courses until, gradually, the NRCS Snow Survey automated those sites.

Each spring, the Twin Falls District holds a water forecast meeting for the Salmon Tract that provides a snapshot of the watershed, a historical comparison and five different projections from the most optimistic to the most pessimistic water allocation. This gives farmers a chance to evaluate data against their past experiences, and adjust their crop rotation accordingly.

During the COVID-19 shutdowns, the Twin Falls District shifted to presenting the water forecast as a recorded Zoom call. Slides prepared by NRCS Snow Survey officials were also posted to the website to ensure cooperators had the information they needed to make good decisions.

For decades, NRCS has helped track streamflow through a measuring gauge on Shoshone Creek. This gauge can only be read using a dedicated laptop, and the downloaded data must be transferred to another laptop so the data can be used. The Twin Falls District is partnering with the Salmon River Canal Co. to install a new modern streamflow gauge and will maintain the existing system for a season or two to truth the new system. That will allow the historical data to be used going forward.

Salmon Falls Dam was listed on the National Register of Historic Places in 2009.

Cindy Snyder is the administrative assistant for the Twin Falls Soil and Water Conservation District and works on information/education outreach as well.

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