United States Department of Agriculture
NRCS OREGON
Natural Resources Conservation Service

OREGON Conservation showcase

Cooper Ranch: *Glenn Cooper and grandson Kenny welded and installed 10.3 miles of pipe in the Lower Bridge area of McKenzie Canyon as part of a watershed enhancement project.*

Pipeline brings Water to ranching community.

Terrebonne, Ore. — Glenn Cooper had a personal goal to bring irrigation water to the ranches of McKenzie Canyon in a naturally pressurized pipeline. He found willing and able partners for this goal in USDA Natural Resources Conservation Service (NRCS) and Three Sisters Irrigation District (TSID). With the support of these partners, the participation of neighboring landowners and a little help from Mother Nature, that goal has been realized.

For decades water had been diverted from Whychus Creek and delivered to farms through a system of open canals and on-farm ditches in the TSID Lower Bridge Sub-District where Glenn farms. During the past four years the 76-year-old volunteered to engage neighbors in the project that replaces canals and ditches with a state-of-the-art High-density polyethylene (HDPE) pressurized pipeline. Glenn built equipment and formulated techniques necessary to move, adjoin and install the 10.3 miles of pipeline which irrigates 1,976 acres on 31 farms between Sisters and Redmond in Central Oregon.

Funding, system design and operational support were provided by a partnership of USDA-NRCS, Three Sisters Irrigation District (TSID), Oregon Watershed Enhancement Board (OWEB), Confederated Tribes and several other natural resource entities. USDA-NRCS was involved heavily in the project, assisting with the costs of design and pipe through a cost share program called the Agricultural Water Enhancement Program (AWEP). Glenn and other farmers provided the in-kind work to install the pipe and TSID administered the project. Glenn says, "NRCS helped make my dream come true. They have been good to work with."

The pipeline marshals the force of gravity and ingenuity of engineering to save nearly half the

Pipeline: *Glenn signals the cat driver to halt as he positions pipe on the welding equipment.*

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> ***—Kathy Simpson***
> *President of TSID Lower Bridge Board*

water volume formerly consumed in the Lower Bridge irrigation canals. The 400-foot drop in elevation from the reservoir to the lowest ranch in Lower Bridge produces a natural pressure as it moves the water down the system with very little need of energy-burning pumps. NRCS District Conservationist Tom Bennett praises the project: "It captures energy savings by getting pumps out of the system. That energy is then freed up for other uses by the general society."

"It took the hard work of Glenn, Marc Thalacker and the NRCS staff to make this happen," says Kathy Simpson, President of the TSID Lower Bridge Sub District Board and a neighbor of Glenn. Kathy's farm recently connected into the new main system through a lateral pipeline.

Marc Thalacker, manager of the Three Sisters Irrigation District (TSID), explains how this project helps people help the land, "This project makes it possible to conserve irrigation water and do what is necessary so both fish and farms can thrive for future generations. The pipeline project returns six cubic feet per second of water instream to Whychus Creek permanently through the Oregon Water Resources Department conserved water program. These additional flows keep water temperatures cool and restore fish habitat."

Fishery agencies and the Confederated Tribes of the Warm Springs are counting on improving conditions in Whychus Creek to support spawning and rearing for Chinook salmon, threatened steelhead and bull trout. Whychus Creek has been listed 303(d) for

temperature under the Clean Water Act (CWA). Efforts to reintroduce anadromous fish started in 2007 as part of the Federal Energy Regulatory Commission (FERC) re-licensing requirements. Anadromous fish swim up rivers from the sea for breeding.

The pipeline begins at the Whychus Reservoir and encloses an open irrigation canal that lost 40 to 75 percent of its water to seepage and evaporation; and replaces it with a 10-mile main line made of 36" HDPE pipe, several pipeline branches, and narrower lateral pipelines to service the individual farms. "Thank goodness for NRCS doing the on-farm stuff," says Glenn. The lateral piping and turnouts on private farmland are funded through AWEP. "This pipeline is not only a benefit for farmers here; it's a benefit to the irrigation district, to the fish, to those who come to fish, and for the local economy, adds Glenn." While Marc went after the grants, Glenn did the physical work. "I unloaded the semis and put the pipe in the welding machine and welded it," he notes. "I always had to have someone running the equipment – pulling it out of the machine, but I always put the pipe in the machine and did the welding."

Alfalfa and hay are produced on 53 percent of the land in the Whychus Creek basin. Twenty-five percent is pasture and 22 percent is used to produce specialty crops such as carrots and radishes for seed. The irrigated pasture is used for various livestock operations such as cattle, horses, llamas, alpacas and domesticated elk. According to Marc, "The project area contains the most productive farmland in Deschutes County." The project inspired Glenn to use his ingenuity and mechanical know-how to design and make many pieces of equipment including a roller to move the heavy pipe, a welder and a sled to rest the welder on. Pipes for the mainline came off the semi truck as 40 or 50 feet lengths and were moved to the welder using a front end loader, supported by a roller and welded into a 600-foot section; fitted with a special cap to prevent soil from entering the pipeline; choked with a chain and drug to the end of the pipeline where a roller set up tipped the pipe efficiently into the ditch.

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> ***—Marc Thalacker***
> *Manager of the Three Sisters Irrigation District*

"It's really a slick way of putting pipe in the ditch," says Glenn. With this project, individual farmers will spend less time checking and cleaning screens on irrigation canal pumps, will need significantly less electricity and will have more water available for a longer growing season. The irrigation district will save time and the endangered steelhead populations will flourish with increased water flows in Whychus Creek. More sports fishermen will come to the area. Cumulatively, the local economy will notice a positive change in the sales of farm supplies and implements and influx of tourism-related dollars. Glenn recalls there was lots of water lost with the open ditch through seepage and evaporation. "Now, since more water will stay instream, the creek that crosses the road at Sisters shouldn't dry up in the summer anymore."

"This pipeline will increase the value of the land," Glenn maintains. Not only will it lower the cost of farming, he says it will make it possible to grow new and different crops in the future. "And it's easier to rent," he adds. For the last five years on Glenn's own farm, the average electricity use for irrigation pumping cost $8000 per year for 400 acres. That is a cost Glenn or his renter will no longer need to incur.

Because the project began on Glenn's farm four years ago, funding for the pipeline turn-out and lateral pipeline was provided by programs other than AWEP. However, Glenn's own farm will still benefit from AWEP. According to Tom Bennett, Glenn's farm is being considered this summer for an AWEP project to improve a pumping station for river water. Glenn learned machining "by growing up on a farm and as a hot rodder…I did a lot of playing around with cars." He honed his skills during a three-year apprenticeship as a lineman and a tour of duty in the army during the Korean War where he worked as a mechanic on big trucks and busses. Glenn has lived on his 400-acre farm at the end of the Lower

Bridge Road since 1965, raising his children and grandchildren on the same land. "It's the best place in the world to raise kids," he declares. His grandson Kenny, 20, works as a ditch rider for Three Sisters Irrigation District and would come by the pipeline project site from time to time to help out his grandfather. Kenny would hop into the cab of the cat to drag the pipe down the road for installation or would guide Glenn as he placed the pipeline into the welder.

Now that the pipeline is completed, Glenn is turning his attention to his antique engine collection of one-cylinder gas engines made in the teens and early 1920s. He will also continue helping neighbors who come by for machining advice, to find a unique screw or to borrow a specialized tool. When he's not in the machine shop, he'll be out for a spin in the car he designed and built in 2005. He named it The Cooper. No relation to the minis, however.

NRCS

Helping People Help the Land

Pipeline: ***Glenn pilots a front end loader to move pipe length to the welder.***