

FY 2017 WaterSMART Grants: Small-Scale Water Efficiency Projects (May Drawdown)

Arizona

Arizona Water Company, White Tank SCADA Water Efficiency Project

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Arizona Water Company will purchase and install SCADA and automated programming equipment on production wells and storage tanks and install automation programming to regulate temperature control of cooling tower process water. This project will increase the reliability of the water supply and improve efficiency of the water supply. The project is supported by a System Optimization Review.

North Gila Valley Irrigation and Drainage District, McPherson Lateral Lining – Phase II

Reclamation Funding: \$74,494

Total Project Cost: \$148,988

The North Gila Valley Irrigation and Drainage District in southwestern Arizona will line 3,737 feet of unlined laterals with concrete. The project will reduce seepage, thereby increasing flow capacity and efficiency. The project is supported by the District's Water Conservation Plan.

Roosevelt Irrigation District, Main Canal Spill Reduction

Reclamation Funding: \$65,760

Total Project Cost: \$131,520

The Roosevelt Irrigation District near Phoenix, Arizona, will reduce spills with automation improvements designed to assist operators to maintain more constant water levels in the main canal. The project will allow operators to manage the canal more precisely, providing more constant water deliveries and water savings. The project is the highest priority among a list of infrastructure improvement projects identified by the District.

California

City of Big Bear Lake, Water System Facilities Automation Projects

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The City of Big Bear Lake, California, will install variable frequency drive motor starter units in four well-pumping plant sites. As part of the upgrade, the City will also add new pressure and water level sensing devices and displays and update the telemetry control system. Upon project completion, the City will be able to control and regulate the pumping of each well, based on system needs and aquifer water levels.

City of Coachella, Advanced Metering Infrastructure

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The City of Coachella, California, will install three base stations to collect data from Advanced Metering Infrastructure (AMI) registers on water meters and a repeater station to be transmitted through a cellular connection to a cloud-based data server. The data will be populated into a billing system available to customers and customer service representatives.

City of Norwalk, Weather-based Irrigation Controllers Installation Project**Reclamation Funding: \$74,500****Total Project Cost: \$149,338**

The City of Norwalk, in Los Angeles County, will install weather-based smart controller irrigation systems in 8 of its 12 public parks. The systems will replace old, inefficient manually-programmed systems that result in over-watering at the parks. The City has conserved 37% of water demands at a city park where the technology was recently installed. The project will help the City meet goals defined in its 2015 Urban Water Management Plan.

City of Sanger, SCADA System Upgrades for Accuracy, Efficiency and Reliability**Reclamation Funding: \$75,000****Total Project Cost: \$150,000**

The City of Sanger, in central California, will improve the SCADA system that operates the Sanger municipal water system. The upgrades include programmable logic controllers, magnetic flow meters, and associated communications equipment at each of the City's eight well sites. The project will result in more accurate measurement and better detection and correction of inefficiencies in water use. The project implements policies and objectives identified in the City's Urban Water Management Plan.

City of Yuba City, Irrigation Systems Upgrade Project**Reclamation Funding: \$73,996****Total Project Cost: \$147,993**

The City of Yuba City, California, will install irrigation controllers in 11 public parks and 13 landscape management districts. The weather-based irrigation controllers will reduce overwatering by applying water only when needed. The new irrigation controllers will reduce water use, increase water sustainability, and reduce operation and maintenance costs. The project will also enable the City to continue providing the minimum water needed at parks and green spaces for recreation and exercise opportunities. The project supports the City's commitment to reducing per capita urban water use by 20 percent by 2020.

Eastern Municipal Water District, Residential Spray-to-Drip Retrofit Program**Reclamation Funding: \$70,000****Total Project Cost: \$152,953**

The Eastern Municipal Water District in southern California will provide rebates to retrofit 700 landscape spray systems with drip irrigation systems. The more efficient drip irrigation systems are expected to conserve 350 acre-feet annually. The project is supported by the District's Water Use Efficiency Master Plan.

El Camino Irrigation District, Conveyance Efficiency Upgrade (Pump 1)**Reclamation Funding: \$31,135****Total Project Cost: \$72,242**

The El Camino Irrigation District in northern California will replace 2,020 feet of concrete pipeline with PVC pipe. The current section of pipeline has water leaks that once eliminated will benefit most users as this section of pipe is closest to a pump station. In addition, the District will replace hub gates, customer valves, and air vents associated with the new pipelines and install a direct read flow meter for improved water measurement capabilities. This project supports the many collaborative efforts that the District is involved in related to water management in the region.

Helendale Community Services District, AMI Smart Meter Installation Program**Reclamation Funding: \$75,000****Total Project Cost: \$150,000**

The Helendale Community Services District in southern California will install 400 Advanced Metering Infrastructure (AMI) Smart Meters, 400 AMI radios, a radio tower, and all necessary hardware to upgrade their outdated meters. AMI technology will assist the District in water planning, water conservation efforts, and enhance customer service. The project is part of the District's Capital Improvement Plan.

Tulare Irrigation District, SCADA System Modernization Project

Reclamation Funding: \$73,150

Total Project Cost: \$148,912

The Tulare Irrigation District in Tulare County, California will improve and expand its current SCADA system by converting existing District SCADA sites to a new web-based SCADA interface platform to enhance the capability of the District to manage surface water supplies. New control and monitoring components will be installed and remote hand-held SCADA monitoring tablets will be purchased. The upgraded system includes a new modern web-based interface to better facilitate access of the system, real-time data acquisition and visualization, data retention capability, and increased security of the system. This project supports goals identified in the District's Water Management Plan and System Optimization Review.

South Tahoe Public Utility District, Pressure Reducing Valve SCADA Upgrades

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The South Tahoe Public Utility District near Lake Tahoe, California will improve its water supply system reliability and accounting by installing metering and instrumentation at a remote pressure reducing valve station. The acquired data will be incorporated into the District's existing SCADA system. The upgraded monitoring will improve notification and response time, and better identify and correct sources of unaccounted water by tracking water entering the pressure zone. This project is part of a larger, on-going effort to develop a water delivery system communication system.

Colorado

Bostwick Park Water Conservancy District, Parshall Measuring Flume

Reclamation Funding: \$34,543

Total Project Cost: \$70,543

The Bostwick Park Water Conservancy District in western Colorado will install a new water measurement flume and SCADA telemetry equipment at the intake from the Cimarron River to the Cimarron Canal, which is the main delivery facility and one of three critical measuring locations of Reclamation's Bostwick Park Project. The upgrade will provide real-time diversion information to aid water managers and support state reporting requirements.

Idaho

Boise Project Board of Control, Automation of the Platt and Miller Check Structures on the Deer Flat Low Line Canal

Reclamation Funding: \$39,283

Total Project Cost: \$78,566

The Boise Project Board of Control near Boise, Idaho will modify two manual check structures with solar-powered, automated control gates. The new equipment will be connected to a SCADA system to provide remote sensing and control of the gate operations. The installation will stabilize and more precisely control flows in the canal, improve water use efficiency in the irrigation system, and prevent loss from spills and over deliveries. The plan will address the goals of the Board's Water Conservation Plan.

Falls Irrigation District, Installation of Water Meters for Water Conservation

Reclamation Funding: \$57,143

Total Project Cost: \$114,286

The Falls Irrigation District in southeastern Idaho will install 26 magnetic meters on deep wells. The new meters will help the District comply with a new Idaho Department of Water Resources rule to install new magnetic meters on all wells before 2018, and help the District more accurately measure water consumption.

Farmers Co-operative Irrigation Company, Conversion of Earthen Ditch to PVC pipe
Reclamation Funding: \$20,220 **Total Project Cost: \$40,440**

The Farmers Co-operative Irrigation Company in southwestern Idaho will convert 740 feet of an open dirt conveyance ditch to 24-inch PVC pipe. The current ditch is prone to seepage and breaks due to steep terrain, erosion and sluffing, tree growth, and adjacent rural residences. By completing the project, the Company will be able to increase water delivery efficiency, reduce sedimentation, eliminate the need for herbicide applications, eliminate evaporation loss, and improve the quality of the water.

Galena Groundwater District, Water Measurement and Conveyance Projects
Reclamation Funding: \$53,102 **Total Project Cost: \$124,825**

The Galena Groundwater District in south-central Idaho, in partnership with the Wood River Water Collaborative, will install real-time measuring devices; will restore 2,200 feet of streambank using wood revetments and native shrubs; and will install a weir to allow for seasonal flooding. These improvements are expected to allow the Watermaster to access the information necessary to continue delivering water to more junior users upstream and better control flooding on the creek. The project meets goals described in a local Water Management and Conservation Plan.

Minidoka Irrigation District, Conversion of Lateral LC2
Reclamation Funding: \$28,840 **Total Project Cost: \$77,680**

The Minidoka Irrigation District in southern Idaho will convert 1,760 feet of an open lateral ditch to 24-inch pipe. In addition to the installation of pipe, the District plans to install a new 24-inch gate at the head of the pipe.

Minidoka Irrigation District, Installation of SCADA on Return River Spill Sites
Reclamation Funding: \$67,375 **Total Project Cost: \$134,750**

The Minidoka Irrigation District in southern Idaho will install SCADA systems on 13 return river spill sites. This will allow the Watermaster to monitor water more frequently, allowing for greater efficiency as well as conserving water loss at the end of the system. The project will allow the District to meet goals from their Water Conservation Plan and gain more control of their water delivery system.

Shoshone-Bannock Tribes Fort Hall Business Council, Water Measurement - Fort Hall Irrigation Project

Reclamation Funding: \$20,000 **Total Project Cost: \$40,495**

The Shoshone-Bannock Tribes Fort Hall Business Council in Fort Hall, Idaho, will purchase and install nine surface water measurement devices with wireless telemetry data transfer capability, to improve the water monitoring system on the Fort Hall Irrigation Project.

Kansas

Kansas Bostwick Irrigation District, Converting Ridge 5.0 & C5th-52.3 L Open Canals to Buried Pipe Systems

Reclamation Funding: \$62,221 **Total Project Cost: \$138,234**

The Kansas Bostwick Irrigation District in northern Kansas will convert 2,975 feet of open laterals to HDPE pipe. The District expects the project to save 386 acre-feet of water annually.

North Dakota

Buford Trenton Irrigation District, Pipeline Installation at Lateral 8.9B and Sublaterals 8.9B2 and 8.92A

Reclamation Funding: \$59,680

Total Project Cost: \$126,424

The Buford Trenton Irrigation District in western North Dakota will install plastic irrigation pipe to replace an open ditch. The project will enable the District to supply water via a closed system, significantly reducing water losses and ditch maintenance expenses.

Grand Forks Traill Water District, Remote Read Water Meter Project

Reclamation Funding: \$74,655

Total Project Cost: \$149,615

The Grand Forks Traill Water District in northeastern North Dakota will add new residential Automatic Meter Read (AMR) systems on 395 of their system connections. The District will replace older, manual-read meters and expects to reduce operating expenses and reduce water loss by about 42 acre-feet annually by identifying and fixing leaks.

Traill Rural Water District, Remote Read Water Meter Project

Reclamation Funding: \$74,805

Total Project Cost: \$149,616

The Traill Rural Water District in eastern North Dakota will install 473 automatic meter read (AMR) compatible meters to provide real-time water use data. This will complete the conversion of all 773 of the District's customers to AMR meters.

Walsh Rural Water District, Remote Read Water Meter Project

Reclamation Funding: \$74,700

Total Project Cost: \$149,438

The Walsh Rural Water District in northeastern North Dakota will add a residential Automatic Meter Read (AMR) system to improve monitoring and help reduce water losses and expenses. The District will replace 300 meters in the first phase of a plan to replace all 1,376 meters in the system. The efficiency of the water delivery system will be improved and approximately 24 acre-feet per year of water losses will be avoided.

Nebraska

Ainsworth Irrigation District, Automation of Bone Lateral Check

Reclamation Funding: \$21,000

Total Project Cost: \$42,000

The Ainsworth Irrigation District in north-central Nebraska will install an automated 4-foot flume gate on the Bone Lateral to replace the current slide gate. The upgrade will allow for more accurate deliveries and an expected savings of approximately 400 acre-feet of water annually. The project is supported by the District's Water Conservation Plan.

Lower Republican Natural Resources District, Real-Time Water Use Data Delivery System

Reclamation Funding: \$54,915

Total Project Cost: \$110,231

The Lower Republican Natural Resources District in Alma, Nebraska will create a web-based tool to provide water users real-time access to their irrigation water use, which will help improve irrigation water management. The project is supported by the District's Integrated Management Plan.

New Mexico

Bloomfield Irrigation District, Flume Water Conservation Project

Reclamation Funding: \$74,944

Total Project Cost: \$149,888

The Bloomfield Irrigation District in northwestern New Mexico will remove and upgrade one of the District's flumes to a new, updated structure. The new flume will have a resin system which will help with water conservation and efficiency. This project will address a problem identified in the District's Capital Improvement Goals.

City of Elephant Butte, Water Meter Upgrades

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The City of Elephant Butte, New Mexico, will upgrade all existing water meters, meter setters, and all connecting components with lead-free products to ensure accurate reporting of water production and reported water consumption within the system. The project is supported by the City's Infrastructure Improvement Plan.

City of Rio Rancho, Water Efficiency Rebates

Reclamation Funding: \$30,000

Total Project Cost: \$70,050

The City of Rio Rancho, New Mexico, will expand its current water efficiency rebate program to include outdoor efficiency measures and devices for commercial, irrigation, and residential applications. By including these devices in the rebate portfolio, the City expects to see a reduction in per capita water use.

Guadalupe Soil and Water Conservation District, Acequia Restoration & Conservation Project

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Guadalupe Soil and Water Conservation District will install acequia lining and piping in open dirt ditches for interested water users within District boundaries. The improvement will reduce seepage and stretch existing water supplies.

Pueblo of Jemez, Water Meter Project

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Pueblo of Jemez in northwestern New Mexico will install 50 urban water meters to ensure the service area is completely metered. The project is the top priority in the Pueblo's existing Master Plan.

Village of Los Lunas, Effluent Reuse for Construction Water

Reclamation Funding: \$74,681

Total Project Cost: \$149,880

The Village of Los Lunas, New Mexico, will construct a treated effluent water load out station for use within the community. The treated water will be available for pick-up and use at construction sites in the area, saving potable water for domestic use. The project was identified in the Village's Water Conservation Plan.

Nevada

Walker River Irrigation District, Saroni Canal Water Conservation Project

Reclamation Funding: \$71,796

Total Project Cost: \$146,523

The Walker River Irrigation District, in Nevada's Walker River Basin, will convert a section of open canal to pipeline, install dataloggers for continuous flow monitoring and tracking, and install cross-section regulating structures. The project will minimize water loss and increase water efficiency and delivery

along the District's Saroni Canal. The project will result in more accurate water delivery data, decreased water loss due to seepage, and decreased likelihood for a canal breach. The District has identified this section of the canal as a priority due to the potential devastation from a canal breach, as well as being an area with high water loss.

Walker River Irrigation District, Lower Plymouth Pipeline Implementation Project Phase I.A.

Reclamation Funding: \$73,500

Total Project Cost: \$150,000

The Walker River Irrigation District, in coordination with the Plymouth Ditch Company, located in Lyon County, Nevada, will install 2,358 linear feet of pipeline to replace an open section of the Plymouth Canal. The result is expected to decrease water loss along the Plymouth Canal system, thus providing more efficient and appropriate delivery of water to agricultural users, and potential benefits to the Walker River and Walker Lake. The project is supported by local conservation plans.

Oklahoma

Locust Grove Public Works Authority, Locust Grove Upgraded Water Line for Improved Efficiency

Reclamation Funding: \$74,395

Total Project Cost: \$149,395

The Locust Grove Public Works Authority in eastern Oklahoma will upgrade 2,175 linear feet of inefficient water line to C900 PVC pipe. The project will reduce leaks and help the Authority address the 705 acre-feet per year of water loss shown in the 2017 Locust Grover Water Loss Study.

Thomas Public Works Authority, Water Meter Upgrades

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Thomas Public Works Authority in western Oklahoma will replace 625 mechanical meters with electronic meters. The new meters will increase revenue, reduce staff time to read meters, and result in an increased overall reliability of water supply. The project is supported by the City's Capital Improvement Plan.

City of Purcell, Water System Improvements Purcell Lake Irrigation

Reclamation Funding: \$59,480

Total Project Cost: \$118,960

The City of Purcell in central Oklahoma will install a floating pump into Purcell Lake and construct a 6-inch diameter line to a sports field complex. The lake water will replace potable water currently used to irrigate the fields and reduce peak demand on potable water.

Oregon

Talent Irrigation District, West Main Canal Piping

Reclamation Funding: \$53,977

Total Project Cost: \$107,954

The Talent Irrigation District in southwestern Oregon will convert a 1,240-foot section of open lateral with PVC pipe including construction of delivery boxes and installation of riprap. The project will increase the efficiency of the water delivery system, conserve water for use elsewhere in the system, and also reduce use of costly chemicals to suppress weeds. The project will meet goals described in the District's Water Management and Conservation Plan.

West Extension Irrigation District, Rippee Road East and West Pipeline Project
Reclamation Funding: \$70,000 **Total Project Cost: \$148,496**

The West Extension Irrigation District in northern Oregon will install 4,600 feet of pipe, replacing 3,000 feet of concrete-lined canal and eliminating 4,100 feet of concrete canal by rerouting the pipeline. Flood irrigation will be eliminated in the area that these improvements serve and all irrigators will be metered. The project meets goals identified in the District's Water Management and Conservation Plan.

South Dakota

Belle Fourche Irrigation District, Piping of Beresford (N.C. 29.2) Lateral
Reclamation Funding: \$75,000 **Total Project Cost: \$155,345**

The Belle Fourche Irrigation District in western South Dakota will install approximately 546 feet of 36-inch PVC pipe on the Beresford Lateral Project. The project will remove an open, seeping ditch on the Beresford Lateral at NC 29.2 and build a structure to control water flow.

Texas

Brownsville Public Utilities Board, Brownsville Independent School District Small-Scale Water Efficiency Project

Reclamation Funding: \$74,868 **Total Project Cost: \$149,768**

The Brownsville Public Utilities Board in southern Texas will install water efficient fixtures at a few Brownsville Independent School District facilities. The project will install 260 low-flow shower heads and faucets at two early-college high school campuses that are the largest consumers of water with the highest ability to conserve, according to a statistical analysis performed by the Board.

City of El Paso, Water Conservation in El Paso Parks

Reclamation Funding: \$75,000 **Total Project Cost: \$150,000**

The City of El Paso, Texas, will install a central irrigation control system that will use evapotranspiration data to determine the true water needs of the plant, and sense excessive flow rates (line breaks, blow outs, etc.) then shut down that zone or master valve. This approach is expected to yield a 20% reduction in water use as compared to the current system. The project will help the City meet many of its strategic goals.

Hidalgo County Irrigation District No. 2, Automation of the Lateral B and C Canal Headgate

Reclamation Funding: \$74,978 **Total Project Cost: \$149,957**

The Hidalgo County Irrigation District No. 2 in southern Texas will upgrade two headgates with gate motors and add a SCADA system along with the necessary hardware to operate both systems in real-time. All components will be powered by solar cells. The project is supported by the 2016 Rio Grande's Regional Water Plan.

Utah

Weber Basin Water Conservancy District, Potable Water System Metering Project

Reclamation Funding: \$75,000 **Total Project Cost: \$150,000**

The Weber Basin Water Conservancy District in northern Utah will install 25 magnetic flow meters and upgrade 10 existing flow meters on water transmission mains to allow for connection to an Automated Metering Infrastructure System. The meters to be installed and upgraded will measure the flow through the District's potable water system to wholesale potable water customers. The project will help the District

better manage water supplies, promote conservation among its wholesale customers, and automate its potable meters. The project will help the District meet goals described in its System Optimization Review.

Weber Basin Water Conservancy District, Smart Irrigation Controller Rebate Program

Reclamation Funding: \$50,000

Total Project Cost: \$135,260

The Weber Basin Water Conservancy District in northern Utah will continue their existing Smart Controller Rebate Program by installing 1,000 smart controllers at residential locations, and providing a sprinkler system audit prior to issuing each rebate. The project supports the District's Water Conservation Plan, which was submitted to the Utah State Division of Water Resources in 2013.

Ogden River Water Users Association, SCADA Project

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Ogden River Water Users Association in northern Utah will install SCADA components at eight priority sites. The SCADA will benefit water operators and water users, and allow the Association real-time access to changes in flow conditions to increase water efficiency and conservation. The project was prioritized in the Association's Automation Master Plan.

Jordan Valley Water Conservancy District, Turnkey Water Conservation Programs

Reclamation Funding: \$74,941

Total Project Cost: \$149,882

The Jordan Valley Water Conservation District, near Salt Lake City, Utah, will offer rebates for turf removal and drip landscape installations for water users across its service area. The activities will improve the District's water efficiency and stretch its existing water supplies. The project was identified as a priority in the District's 2014 Conservation Plan.

Carbon Canal Company, Carbon Canal Flow Control Automation

Reclamation Funding: \$73,580

Total Project Cost: \$148,580

The Carbon Canal Company, located in Price, Utah, will implement canal automation on the Carbon Canal. The project will consist of upgrading 4 flow control sites with water level sensors, motors, SCADA systems, and remote operation capability. The control sites are currently manually operated flow control gates. The result of the upgrade will be improved water delivery efficiency and flood control for residential and commercial areas. This project was identified as a priority in the Company's Water Conveyance Facility Management Plan.

Draper Irrigation Company, Culinary Smart Metering Project

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Draper Irrigation Company near Salt Lake City, Utah will install 130 ultrasonic smart meters with cellular data transmission. The new meters will establish an advanced data collection system for the Company's entire culinary system. The project is supported by the Company's Water Conservation Master Plan.

Settlement Canyon Irrigation Company, Municipal Metering Project

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Settlement Canyon Irrigation Company, near Salt Lake City will install 40 flow meters and SCADA components. The upgrades will benefit water operators and water users by providing more accurate water consumption information.

Washington

City of Yakima, Low Water Use Garden Conversion Project

Reclamation Funding: \$63,500

Total Project Cost: \$149,363

The City of Yakima, Washington, will implement a low water-use garden conversion project converting 38,000 square feet of grass lawn and high water-use plants into low water-use landscaping. The project will include clearing and grubbing of existing landscaping, retrofitting existing irrigation systems, placing various size rocks, and replanting with low water use plants. The project is listed in the City's Water System Plan.

Lake Chelan Reclamation District, Flow Meter Upgrades

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Lake Chelan Reclamation District in central Washington will upgrade 104 propeller meters with automated electronic meters. The benefits from this upgrade will include improved water measurement accuracy, saved labor, and a reduction in fuel costs. This project will help the District enhance water demand management with their customers. The project is part of an ongoing 2017 Comprehensive Water Conservation Plan.

Quincy-Columbia Basin Irrigation District, Automation of W3 Lateral Turnout of the West Canal

Reclamation Funding: \$46,482

Total Project Cost: \$92,963

The Quincy-Columbia Basin Irrigation District in central Washington will automate a lateral turnout of the West Canal. The six-mile section of the West Canal sees significant flow changes each day which result in changes in elevation in water level at the turnout. The significant flow changes result in surplus deliveries being lost as operational spills. Automating the turnout gate will correct the elevation changes, maintain a constant flow, and reduce spills. The project will meet a goal of the District's Water Conservation Plan.

Roza Irrigation District, Concrete Lining Seal Mile Post 30.3-30.8

Reclamation Funding: \$75,000

Total Project Cost: \$150,000

The Roza Irrigation District in southeastern Washington will seal a half-mile of concrete liner in the District's main canal. Polyurea sealant will be used to improve upon the original design of the canal, helping to reduce seepage. The project support elements of the Yakima River Basin Integrated Water Resource Management Plan.

Whitestone Reclamation District, Whitestone Flats Piping Project

Reclamation Funding: \$48,905

Total Project Cost: \$100,652

The Whitestone Reclamation District in northern Washington will replace 1,580 feet of open irrigation canal with 24-inch plastic irrigation pipe. The project will reduce water loss, improve human safety, and is a necessary step towards pressurization of the system. The project addresses an efficiency problem documented in various system reviews.