

FY 2014 WaterSMART Water and Energy Efficiency Grants

Arizona

City of Peoria, Arizona, Implementation of Adaptation Strategies

Reclamation Funding: \$300,000

Total Project Cost: \$1,627,507

The City of Peoria, Arizona will construct three vadose zone recharge wells to recharge treated wastewater from their Butler Drive Water Reclamation Facility. The City's capacity to recharge this water is currently over allocated. Installing this well will enable the City to derive the full benefit from this water source. This project is expected to result in water savings of 1,680 acre-feet per year by allowing for storage of a locally available supply that can be used to meet future demands.

California

City of Yucaipa, California, Wilson III Basin Groundwater Recharge and Water Management

Reclamation Funding: \$300,000

Total Project Cost: \$8,171,961

The City of Yucaipa, California, in partnership with San Bernardino County Flood Control District, the San Bernardino Valley Municipal Water District, the Yucaipa Valley Water District and Inland Empire Resource Conservation District, will construct and expand groundwater recharge basins at two distinct sites. Recharge basins totaling 50 acres will be constructed at Site A, Wilson III Basin Project. The City will store and percolate State Water Project water at the Wilson Basin Project for groundwater recharge. Site B currently includes 30 acres of highly productive spreading basins for State Water Project water. The City will expand these basins to capture additional storm flows for aquifer recharge by modifying the basin inlets, outlets, spillways, and basin-to-basin drains. By reducing the peak flow rates to the downstream Wilson Creek channel, the recharge basin will also serve as a flood control facility and the recharge area will function as a passive park for the community with walking trails, boulders, and seat walls. Construction of Site A and expansion of Site B is expected to result in recharge of 1,450 acre feet of water annually which is currently lost to the ocean. The project will help reduce the City's reliance on imported water.

Colusa County Water District, Supervisory Control and Data Acquisition System Installation and Medium Voltage Motor Controls Upgrade Program

Reclamation Funding: \$448,000

Total Project Cost: \$1,361,075

The Colusa County Water District in Arbutle, California will install a District-wide supervisory control and data acquisition automation program and upgrade the existing Medium Voltage Motor Control Centers at pumping plants 2B and 2C. The project will allow the District to optimize operations, thereby providing more reliable and efficient water deliveries. Annually, the project is expected to result in water savings of 2,160 acre-feet by reducing over-deliveries, and will also reduce the District's electrical consumption by optimizing pumping operations. Furthermore, by allowing District staff to remotely monitor pumping facilities, the District estimates that the project will save approximately 16,200 miles of travel that are currently required for field visits, and the associated carbon emissions. Water savings resulting from the project will assist in addressing shortages the District is experiencing as a result of prolonged drought conditions.

Fresno Irrigation District, Southwest Groundwater Banking Project

Reclamation Funding: \$1,000,000

Total Project Cost: \$4,562,000

The Fresno Irrigation District, in California will develop a new 60 acre groundwater recharge basin as part of the District's Southwest Groundwater Banking Program. This project will enable the District to capture approximately 4,200 acre-feet per year in storm water at the new basin site and also allow an additional 1,300 acre-feet of storm water to be conveyed to James Irrigation District to be stored in their existing recharge basin sites. The new recharge basin will be equipped with all needed turnouts and gauges and the conveyance capacity of two existing canals will be increased to carry the additional water. The captured storm water will be used to offset the amount of groundwater pumping required to supply downstream growers. Groundwater recharge is important in addressing the current overdraft in the area and will help provide for the sustainable management of surface and groundwater supplies.

Gateway Water Management Authority, Regional Advanced Meter Infrastructure Program

Reclamation Funding: \$1,000,000

Total Project Cost: \$2,557,418

The Gateway Water Management Authority, in southern California, will implement the Regional Advanced Meter Infrastructure (AMI) Program to improve regional water management by converting 6,263 meters to AMI smart meters, including 5,516 residential accounts, 730 commercial/landscape accounts, and 17 industrial accounts. The Gateway Regional cities and water district customers will have reliable, secure, and real time access to their water usage data through a specially designed AMI customer portal. The project is expected to result in annual water savings of 2,651 acre-feet and will reduce the use of State Water Project and Colorado River water resources.

Irvine Ranch Water District, Stockdale Recovery Facilities Program

Reclamation Funding: \$1,000,000

Total Project Cost: \$3,225,000

The Irvine Ranch Water District, located in Irvine, California will install three ground water extraction wells, with piping and solar-powered flow meters, to recover up to 2,700 acre-feet of water annually from stored groundwater. The extracted water will be conveyed to nearby Pioneer and Cross Valley Canals and will be substituted for water the District imports from other sources, making the previously imported water available for other uses in the region or State. The recharge facilities to capture wet-weather runoff and flood flows already exist and agreements are already in place. The project will significantly enhance water supply reliability for the District by providing recovery of stored water to augment supplies during dry-years. The project implements adaptation strategies that were addressed in the Santa Ana Watershed Basin Study completed in 2013, which the District participated in as a stakeholder.

James Irrigation District, James Irrigation District Water Banking Project

Reclamation Funding: \$1,000,000

Total Project Cost: \$3,244,794

The James Irrigation District, located in San Joaquin, California, will increase the capacity of an existing recharge basin in order to capture high flows from the Kings River that currently go unused. The District will also construct a new turnout gate to increase the diversion capacity of its Main Canal and will automate canal gates to more efficiently operate the system. High flows placed in the ground for storage can be retrieved when needed most, or can be left in the aquifer to raise groundwater levels. The project is expected to result in 2,195 acre-feet of water savings annually.

Metropolitan Water District of Southern California, On-site Retrofit Pilot Program

Reclamation Funding: \$700,000

Total Project Cost: \$2,000,000

The Metropolitan Water District of Southern California will undertake an on-site retrofit incentive program to convert potable water irrigation water systems to recycled water irrigation systems. The retrofits will consist of improvements to existing irrigation systems in order to allow for the connection to the distribution system of an existing water recycling facility. The program is expected to result in annual water savings of 5,100 acre-feet through the offset of imported water with recycled water that is currently being discharged to the ocean. The District also estimates that the project will save an estimated 13,316,000 kilowatts per year by replacing imported water with recycled water. By completing these improvements, the District is implementing the municipal and industrial water conservation adaptation strategy identified in the 2012 WaterSMART Colorado River Basin Water Supply and Demand Study.

Metropolitan Water District of Southern California, California Friendly Turf Replacement Incentive Program- Phase II

Reclamation Funding: \$300,000

Total Project Cost: \$1,300,000

The Metropolitan Water District of Southern California will also provide incentives under the California Friendly Turf Replacement Incentive Program to convert approximately 1.3 million square feet of irrigated turf to water efficient landscapes with climate-appropriate plants, efficient irrigation, permeable surfaces to allow rainwater infiltration, and mulch to preserve soil moisture. This project is part of an ongoing effort and is expected to result in water savings of 186 acre-feet per year. Water that is conserved through this project will contribute towards California's goal of achieving a 20 percent reduction in urban per capita potable water use by 2020 and it will help avoid future water supply shortages related to population growth, climate change, and drought, amongst other stressors.

Natomas Central Mutual Water Company, R Drain Check Structure Automation Project

Reclamation Funding: \$147,900

Total Project Cost: \$295,800

The Natomas Central Mutual Water Company, near Sacramento, California, will install an automated control gate in the R Drain Canal, which frequently experiences overtopping. The automated gate will connect to an existing Supervisory Control and Data Acquisitions system, which will allow the Company to remotely operate the system. The project is expected to result in annual water savings of 3,800 acre-feet which is currently lost to spills. The conserved water will remain in the Sacramento River for downstream uses.

Nevada Irrigation District, Hydroelectric Project

Reclamation Funding: \$300,000

Total Project Cost: \$4,599,425

The Nevada Irrigation District in Grass Valley, California will install a 1.4 megawatt hydroelectric generation station near the Loma Rica Water Treatment Plant at the terminus of the Banner-Cascade pipeline. The facility is expected to generate 5,110 megawatt hours annually, thereby providing a 3,605 metric ton carbon offset. Power that is generated as a result of the project will serve the water treatment plant load and the excess generation will be sold to Pacific Gas & Electric.

Rosedale-Rio Bravo Water Storage District, Water Conservation, Energy Efficiency, and Solar Power Project

Reclamation Funding: \$300,000

Total Project Cost: \$706,573

The Rosedale-Rio Bravo Water Storage District in Bakersfield, California will line one mile of the earthen West Intake Canal. The District will also retrofit three existing wells and one existing pumping plant with variable frequency drives and will install acoustic flow meters and three solar-powered pumping units in active irrigation wells. The project is expected to result in annual water savings of 2,867 acre-feet of water and will generate 250 kilowatt-hours of solar energy annually. The conserved water will reduce groundwater pumping and will increase instream flow in the South Fork of the Kern River to benefit fish and wildlife habitat in the region.

Sacramento Suburban Water District, Residential Water Meter Installation Project

Reclamation Funding: \$300,000

Total Project Cost: \$3,943,168

The Sacramento Suburban Water District, in collaboration with the City of Sacramento, California, will install 3,665 residential water meters on currently unmetered connections. Data that is collected from the new meters will be provided to residents and will be used to target water conservation efforts to specific areas. The project is expected to result in annual water savings of 518 acre feet.

Santa Barbara County Water Agency, WaterWise Landscape Rebate Program

Reclamation Funding: \$179,000

Total Project Cost: \$575,310

The Santa Barbara County Water Agency and participating local water purveyors within Santa Barbara County, California will implement the “WaterWise Landscape Rebate Program”. Through the program, the Agency will offer rebates to non-agricultural customers for a variety of landscape-related water efficiency upgrades (e.g. turf removal, installation of high efficiency landscape irrigation, etc.). Based on results of a similar rebate program, the WaterWise Landscape Rebate Program is expected to result in annual water savings of 121 acre-feet. The water that is conserved through this project will remain in local surface water reservoirs or local groundwater basins, thereby reducing pressure on local and statewide water supplies by providing a buffer during times of drought.

Colorado

Uncompahgre Valley Water Users Association, Shavano Falls Hydropower Development

Reclamation Funding: \$850,000

Total Project Cost: \$7,807,303

The Uncompahgre Valley Water Users Association in Montrose, Colorado, will install a 2.8 megawatt hydroelectric facility on the existing “Shavano Falls” irrigation canal drop structure located on the M&D Canal. The Association will also convert 3,000 feet of earthen canal to pipe and will line 1,200 linear feet of earthen laterals with a Bentonite clay liner. In addition, the 1,200 stretch of lateral will be enlarged from a capacity of 90 cubic feet per second to 310 cubic feet per second. The project also includes the installation of headgate structures and sensors and flows will be realigned from portions of the M&D Canal and CQ Lateral, allowing for a more efficient conveyance process. The project is expected to result in annual water savings of 193 acre-feet that is currently being lost to seepage. The Association expects to generate 12,973,000 kWh annually from the hydroelectric facility and energy revenues derived from the facility will be provided locally to the city of Delta to offset project operation and maintenance expenses. The project implements adaptation strategies that were addressed in the 2012 WaterSMART Colorado River Basin Water Supply and Demand Study, which the Association participated in as a stakeholder.

Idaho

Idaho Water Resource Board, Phase Two - Provide Irrigation Flow Measurement Devices to Delivery Points Within Water District 02

Reclamation Funding: \$297,761

Total Project Cost: \$661,691

The Idaho Water Resource Board in Boise, Idaho will install measuring devices and monitoring/telemetry equipment for 48 irrigation diversions and six pumping stations within Idaho Water Resource Board- Water District 02. Solar and battery powered repeater towers will also be installed to ensure that the remote sensing system covers the entire District. Historically, diversions have not been regulated or routinely measured. As a result, the project will improve water use management and regulation of 222,340 acre-feet and reduce excess water diversion. Reducing excess water diversions is expected to result in annual water savings of 1,030 acre-feet. Conserved water will remain in the Snake River channel, benefiting up and downstream users as well as critical habitat for the endangered salmonid fish species in the Snake and Columbia River basins.

Oxford Reservoir and Irrigation Company, Innovative Energy Production and Irrigation Efficiencies

Reclamation Funding: \$298,000

Total Project Cost: \$598,644

The Oxford Reservoir and Irrigation Company in southeastern Idaho will replace 4.5 miles of earthen canals with 4.1 miles of pipeline. The Company will also install metering devices at service connections and will install two hydro turbines with a combined 58.45 kilowatt capacity. The project is expected to result in annual water savings of 1,080 acre-feet that is currently lost to seepage, evaporation, and on-farm flooding. The water conserved by this project will remain in the system to supplement existing water supplies.

South Board of Control, South Canal 17.7 Pipeline Gravity Pressure Project

Reclamation Funding: \$300,000

Total Project Cost: \$633,354

The South Board of Control in Homedale, Idaho will convert an open lateral canal to 13,400 feet of pipe to supply gravity flow pressurized irrigation water to farm units that are currently irrigated by furrow and flood irrigation. The project is expected to result in water savings of 1,100 acre-feet per year that is currently lost to evaporation and seepage, headgate leakage, and tail end spills and will increase energy efficiency in the system by reducing the amount of water that needs to be pumped at the Gem Pumping plant. The water that is conserved as a result of this project will be stored in Owyhee Reservoir where it can be used to supplement existing water supplies for future needs.

Kansas

City of Topeka, Kansas, Advanced Water Metering Project

Reclamation Funding: \$300,000

Total Project Cost: \$751,307

The City of Topeka will replace 500 commercial and residential water meters in the City with advanced metering infrastructure (AMI); establish a remote reading and communications network; install acoustic leak detection and pressure sensors to detect distribution leaks; and will implement a Meter Data Management System to enhance the AMI. This project will create an efficient system by providing customers with real-time data to identify leaks and better monitor their water use. The project is expected to result in annual water savings of 1,054 acre-feet. The City estimates the project will reduce electricity consumption by 1,149,395 kilowatt hours through reduced water pumping and treatment. The conserved water will reduce demand on the Kansas River, resulting in benefits to the endangered Topeka Shiner and Least Tern and other species of concern in the area.

Montana

Malta Irrigation District, Dodson South Canal Head Gate Project

Reclamation Funding: \$118,015

Total Project Cost: \$340,229

The Malta Irrigation District in northern Montana will install a new headgate structure at the Dodson South Canal and will install an acoustic Doppler flow meter to improve operational control and efficiency in the system. The project is expected to result in annual water savings of 1,350 acre-feet. Water that is conserved as a result of this project will remain in the Milk River to benefit up-stream and down-stream users as well as critical habitat for the endangered Pallid Sturgeon.

Nevada

Southern Nevada Water Authority, Water Smart Landscape Rebate Program

Reclamation Funding: \$300,000

Total Project Cost: \$3,300,000

The Southern Nevada Water Authority will expand its existing landscape rebate program, which provides a financial incentive for residential property owners to replace turf with water efficient landscaping. The project is expected to result in the replacement of approximately 2,578,125 square feet of turf, with an expected water savings of 441 acre-feet per year. Water conserved through this project will be left in the Colorado River for instream uses in the Colorado River Basin and will contribute to existing water banks in California, Arizona, and Southern Nevada.

New Mexico

Elephant Butte Irrigation District, Rincon WHEN: Water-Habitat-Energy-Nexus

Reclamation Funding: \$808,557

Total Project Cost: \$1,920,753

The Elephant Butte Irrigation District in Las Cruces, New Mexico will complete multiple improvements as part of an integrated set of water conservation, habitat management, and energy efficiency activities. The District will convert 12,830 feet of open earthen lined channel to an aluminized steel pipeline with concrete check and diversion boxes. Piping the channel will virtually eliminate seepage and operational losses. The District will also install improved metering equipment along the pipeline. The District will also install two high-volume, low-lift pumps into the Rio Grande at the District's Wasteway 18, which will improve water delivery and reduce seepage by avoiding transporting the water down 33 miles of unlined canal. Water pumped at this location will be metered. The project also includes widening the existing Rincon Drain to create "Tonuco Pond," a wetland which will be engineered to benefit wildlife and mitigate groundwater salinity issues in the area. Solar powered pumps will be installed to discharge drain water from the Pond to the Rio Grande to allow the groundwater to cycle and reduce shallow groundwater problems (e.g. E. Coli) for nearby irrigated agriculture and habitat. Further, two problematic arroyos will be channeled to discharge into the Rincon Drain to provide increased water to the Drain and Tonuco Pond, resolving flooding issues. Lastly, the District will install photovoltaic solar panels over the channel to partially offset the electricity of the high flow lift pumps. Approximately 10 kilowatt solar capacity is expected to be installed. In total, the project is expected to result in annual water savings of 7,053 acre-feet and will generate 18,250 kilowatt hours of electricity annually. The water saved as a result of this projects can be used to offset groundwater pumping, to meet shortages, and for environmental restoration.

Oregon

Horsefly Irrigation District, Dairy and Yonna Canals Piping Project

Reclamation Funding: \$198,300

Total Project Cost: \$400,622

The Horsefly Irrigation District in southern Oregon will convert 1.26 miles of open canal to pipeline. The project is expected to result in annual water savings of 720 acre-feet that is currently being lost due to seepage, evaporation, and vegetation in the canal. Water that is conserved through the project will remain in the Lost River and Clear Lake Reservoir to benefit downstream users.

Texas

El Paso Water Utilities Public Service Board, Potable Water and Energy Conservation from Secondary Membrane Treatment of Reverse Osmosis Concentrate at Existing Wellhead Reverse Osmosis Units

Reclamation Funding: \$300,000

Total Project Cost: \$1,655,000

The El Paso Water Utilities Service Board will design and install Seawater Reverse Osmosis units to provide secondary water recovery at three wellhead reverse osmosis units in the Lower Valley. This secondary treatment process will reclaim water that is currently released into the wastewater system and is expected to increase the potable water out of the three new reverse osmosis units by 100 acre-feet each, or an additional 300 acre-feet per year. The Board receives approximately 50% of its water from Reclamation's Rio Grande Project. The additional potable water produced from this project will offset water that is either currently diverted from the Rio Grande Project or pumped from groundwater.

Utah

Davis and Weber Counties Canal Company, Main Piping and Small Hydro Project

Reclamation Funding: \$1,000,000

Total Project Cost: \$3,050,210

The Davis and Weber Counties Canal Company in northern Utah will meter 5 turn-outs on the main canal, replace 1,000 feet of unlined, open canal with 66-inch reinforced concrete pipe, and replace 3,430 feet of a deteriorating concrete lined, open canal with two 72-inch reinforced concrete pipes. The Company will also install two 10 kilowatt hydroelectric units on the canal, which together are expected to generate 86,400 kilowatt hours of power per year. The project is expected to result in annual water savings of 2,680 acre-feet that is currently lost to seepage. Conserved water will be made available to a growing municipal customer base and serve as a supply in times of drought. The Company is also committed to working with the Utah Department of Wildlife Resources to release between 5-10% of the conserved water at critical times to enhance the habitat for state sensitive species (Bonneville Cutthroat Trout and Bluehead Sucker). This project has been identified as a top priority in the Company's recently completed WaterSMART System Optimization Review grant.

Duchesne County Water Conservancy District, Duchesne County Water Efficiency Project

Reclamation Funding: \$299,763

Total Project Cost: \$666,140

The Duchesne County Water Conservancy District in Roosevelt, Utah, in collaboration with local irrigation entities, will install telemetry equipment, flumes, sensors, water meters, and a control structure and will automate a major river diversion structure within the Duchesne County service area. By addressing seepage and evaporation losses, the project is expected to result in annual water savings of 7,878 acre-feet. Conserved water will assist in meeting irrigation shortages. A portion of the water that is conserved by this project will be released into the Colorado River to benefit endangered species habitat.

Duchesne County Water Conservancy District, Red Creek Piping Project**Reclamation Funding: \$300,000****Total Project Cost: \$737,000**

The Duchesne County Water Conservation District, in collaboration with the Red Creek Irrigation District, will also convert 1.1 miles of open canal to pipeline. The District will also improve the management of the water that flows through the project by installing measuring devices on the new pipe. The project is expected to result in annual water savings of 1,500 acre-feet that is currently lost due to seepage and evaporation. The water that is conserved through this project will be stored in the Red Creek Reservoir or may be stored downstream in Reclamation's Starvation Reservoir.

Fremont Irrigation Company, Extension to Improve Irrigation Efficiency and Provide Sustainability**Reclamation Funding: \$1,000,000****Total Project Cost: \$7,354,500**

The Fremont Irrigation Company in southern Utah will convert 12,900 linear feet of existing open-ditch earthen canal to approximately 12,200 feet of pressurized steel pipe, and will install meters along the pipe. The pressurized steel pipe will allow on-farm systems, currently flood irrigating, to convert to sprinklers. The project is expected to result in annual water savings of 1,410 acre-feet that is currently lost to seepage and evaporation. Water conserved as a result of the project will be used to meet the needs of water users during periods of shortage. The project also includes the installation of a 1.5 megawatt hydroelectric facility, taking advantage of the available head provided by the proposed piping improvements, which is expected to generate approximately 5,553,000 kilowatt hours annually.

Holmes Creek Irrigation Company, Water Conservation and Renewable Energy Project**Reclamation Funding: \$300,000****Total Project Cost: \$1,040,225**

The Holmes Creek Irrigation Company in Layton, Utah will convert an earthen canal and concrete pipe to 2.6 miles of PVC pipeline. The Company will also install six flow meters and a 131 kilowatt hydroelectric facility on the pipeline. Addressing the seepage and evaporation losses is expected to conserve 800 acre-feet of water per year that will help the Company meet goals set in the Utah State Water Plan. The Company expects to generate approximately 575,000 kilowatt hours annually as a result of the project that will be sold to Rocky Mountain Power. Approximately 600 acre-feet of the conserved water will be made available to Layton City, Utah and the remaining 200 acre-feet of water that is conserved by the project will be left in the Holmes Creek to benefit fish and migratory bird habitat.

Jordan Valley Water Conservancy District, Advanced Metering Infrastructure Project**Reclamation Funding: \$300,000****Total Project Cost: \$3,599,849**

The Jordan Valley Water Conservancy District, near Salt Lake City, Utah, will install approximately 8,600 advanced water meters, resulting in real-time meter reading capabilities for residential and commercial water users. Once the project has been completed, water users will be able to monitor their usage through a secure customer website so that adjustments can be made during peak periods and leaks and other water losses can be addressed to increase water use efficiency. The project is expected to result in water savings of 485 acre-feet annually that will no longer need to be diverted to the District from the Bear River Water Supply Project. This project will also help the District meet its goal to reduce per capita water use from 2000 levels by 25 percent by 2025.

Logan and Northern Irrigation Company, Piping and Pressurization Project**Reclamation Funding: \$1,000,000****Total Project Cost: \$2,644,256**

The Logan and Northern Irrigation Company will enclose a 4.2 mile section of an existing open gravity-flow canal in Cache Valley, Utah with 22,090 feet of high-density polyethylene pipe (ranging from 32" to 8" in diameter). The pipe will be pressurized and metered at 46 turnouts. Pressurizing the pipe will allow the Company's shareholders to remove existing pumps along the canal which are used to pressurize water for irrigation, resulting in an estimated energy savings of 285,000 kilowatt hours annually. The project is expected to result in annual water savings of 1,530 acre-feet that is currently lost to seepage, evaporation, and spills. The project will also better manage 4,998 acre-feet through installation of meters. Conserved water will pass through the existing Logan Light and Power Hydroelectric Facility Number 2, generating an additional 314,500 kilowatt hours of electricity annually. Conserved water will also be used to meet shortages in times of drought and allow the Company to lease water shares to meet future demand. This project implements recommendations from the 2013 Cache County Water Master Plan which was funded through a WaterSMART System Optimization Review grant.

Richmond Irrigation District, Upper High Creek Canal Enclosure and Hydropower Development Project

Reclamation Funding: \$1,000,000

Total Project Cost: \$4,750,000

The Richmond Irrigation District in northern Utah will enclose approximately eight miles of the Upper High Creek Canal with High Density Polyethylene pipe, install nine meters, and construct two hydropower facilities with a combined 300 kilowatt capacity. The project is expected to result in annual water savings of 4,800 acre-feet that is currently lost to seepage and evaporation. 2,800 acre-feet will remain in High Creek for downstream users and environmental benefits. The remaining 2,000 acre-feet will be used to meet shortages of the District. Meters will allow the District to better manage 9,600 acre-feet annually. Annual power generation from the project is estimated at 1,620,000 kilowatt-hours and will be sold to help offset project operation and maintenance cost. The project will also reduce the amount of power required to pump from five existing wells, which the District estimates at 2,750,000 kilowatt-hours of energy annually.