

Drought Resiliency Project Grants

Arizona

City of Phoenix, Aquifer Storage and Recovery (ASR) Well Restoration Program – Deer Valley Water Treatment Plant

Reclamation Funding: \$300,000

Total Project Cost: \$4,203,776

The City of Phoenix, Arizona, will purchase components for a well as part of an Aquifer Storage and Recovery Well Restoration project at their Deer Valley Water Treatment plant. The City will construct a dual-purpose well that will directly inject under-utilized surface water supplies into the aquifer for later withdrawal during times of drought. The City, which services more than 1.5 million residents, is currently experiencing drought conditions. This project enables the City to maintain a supply of surplus water while offering operational flexibility during times of drought. The City estimates the groundwater recharge to be 2,400 gallons per minute, or approximately 3,874 acre-feet per year.

California

Irvine Ranch Water District, Irvine Lake Pipeline Conversion Project

Reclamation Funding: \$300,000

Total Project Cost: \$14,406,686

Irvine Ranch Water District in southern California will extend its recycled water system by adding a new booster pump station and storage tank reservoir, and converting a portion of the Irvine Lake Pipeline to provide recycled water to 60 irrigation customers – reducing evaporation losses and reliance on water purchased from the Metropolitan Water District. The District relies on imported water for 35% of their drinking water supply; this imported water may become limited as the supplier implements a water supply allocation for imported water deliveries as a result of the increasing drought conditions. The District, currently experiencing a four-year drought, estimates that the project will increase utilization of local recycled water – a drought resilient supply – and reduce imported water by about 3,100 acre-feet per year. The project will implement the regional goals of the Santa Ana Watershed Basin Study by improving operational efficiency and increasing water supplies in the region.

Merced Irrigation District, Drought Protection Water Management Tool

Reclamation Funding: \$297,977

Total Project Cost: \$784,059

The Merced Irrigation District in California's Central Valley will develop a real-time simulation water management model that will help the district analyze, predict, and respond to drought conditions. The District will also install two weather stations and two river gage stations to collect water supply data on precipitation, flows, temperature, and system losses. Improved information and forecasting will help the District increase measurement accuracy, monitor river temperature for fisheries benefits, track water uses, minimize system losses, and adjust operations to respond to local conditions in times of drought. The District estimates that the model will help the district better manage up to 25,000 acre-feet per year, resulting in additional water supplies that can be used when drought conditions exist.

Semitropic Water Storage District, Groundwater Well Extraction Improvements for Return of Stored Water

Reclamation Funding: \$300,000

Total Project Cost: \$961,695

Semitropic Water Storage District in northwestern Kern County of Southern San Joaquin Valley, California will equip 9 existing recovery wells with pumps, motors, discharge piping, and electrical

equipment for completion of an Aquifer Storage and Recovery project. The project will provide drought resiliency benefits to district water users and 3rd-party districts and landowners that participate in the Semitropic Storage Banking Program by enabling more effective extraction of banked water supplies. The District has been in a drought for the past four years. The District estimates that the project will provide an additional 2,880 acre-feet per year of water over a 30-year lifecycle.

Stockton East Water District, Southeast Recharge Basin, North Site Project

Reclamation Funding: \$300,000

Total Project Cost: \$846,453

The Stockton East Water District in San Joaquin County, California will construct a new 60-acre aquifer recharge basin to supplement the existing Farmington Groundwater recharge program. In normal to wet years, the new recharge basin will allow storage of between 5,500 and 6,500 acre-feet per year in excess surface water that can be made available during drought. Recharging excess water will alleviate groundwater overdraft and reduce the rate of saline water intrusion while maintaining current supplies, supporting sustainable conjunctive use and improved drought resiliency.

Tule River Tribe, Painted Rock Improvements Project

Reclamation Funding: \$261,053

Total Project Cost: \$522,106

The Tule River Tribe of south-central California will raise an existing crib dam on the South Fork of the Tule River. The project increases the water level at the intake for Tribe's primary water supply by 51%, by adding 1.7 acre-feet of storage capacity. In addition to increasing the storage capacity, this project will help ensure that the intake structure remains submerged through periods of drought so that the Tribe can continue to draw water into its treatment facility. The project will help the Tribe make use of more of their water entitlement and alleviate potable water shortages. As a result of the most recent drought, the Tribe was forced to truck water onto the Reservation and has not been able to maintain sufficient water supply or pressure in the fire suppression system. The historic drought levels pose an imminent threat to public health, property, and the economy of the Tule River Indian Reservation. This project will assist the Tribe in obtaining the resilient infrastructure necessary to protect the public health, safety and economy of the Tribe.

Idaho

South Board of Control, Improvement of Gem Irrigation District #2 Pumping Plant

Reclamation Funding: \$300,000

Total Project Cost: \$602,690

The South Board of Control in western Idaho will install new pumps to more than double the existing capacity of the Gem #2 Pumping Plant. The project will provide additional flow from the Snake River to replace supplies out of Sage and Succor Creeks, which are dwindling due to the current drought, allowing the Board to fully deliver to its customers. This project, supported by the Board's Drought Contingency Plan, will also reduce withdrawals from Reclamation's Owyhee Reservoir and give the Board more flexibility in drought planning and response. The Board expects the project to result in the better management of 9,212 acre-feet per year.

Nevada

Southern Nevada Water Authority, Lake Mead Water Quality Monitoring to Mitigate Impacts Caused by Drought

Reclamation Funding: \$300,000

Total Project Cost: \$613,968

Southern Nevada Water Authority, a wholesale water provider for seven entities in southern Nevada, will install real-time water quality monitoring equipment that will enable faster evaluation of the untreated water received from Lake Mead. Since 2000, ongoing drought conditions in the Colorado River Basin have caused water levels in Lake Mead to decline by more than 125 feet. The record low water levels have had severe impacts on water quality in the reservoir. This project will equip the Authority with better instrumentation – enabling them to respond quickly to rapidly changing water quality while continuing to provide safe drinking water, and protect public health and safety for nearly 2 million residents in Clark County, Nevada.

Oklahoma

City of Duncan, Clear Creek Lake Improvements Project

Reclamation Funding: \$300,000

Total Project Cost: \$691,348

The City of Duncan, Oklahoma, will install 1,520 linear feet of pipeline to allow the City to access up to 1,596 acre-feet per year from Clear Creek Lake to prevent water shortages during drought. The City will also upgrade the existing pump station with pumps having variable frequency drives and a Supervisory Control and Data Acquisition System. The City, which provides treated water to approximately 30,000 people, experienced severe drought conditions in 2015 and is in one of 12 basins identified in the Oklahoma Comprehensive Water Plan as having the most significant water challenges over the next 50 years. The City has reduced water consumption by 40% from 2011 to 2014 through mandatory and voluntary conservation measures. This project is supported by the City's drought plan and was identified by the City Council as a top priority to build resiliency to future droughts.

Waurika Lake Master Conservancy District, Waurika Lake Water Intake Channel Improvement Project

Reclamation Funding: \$300,000

Total Project Cost: \$12,000,000

The Waurika Lake Master Conservancy District in southwestern Oklahoma will install an extension intake pipe to the lowest point in Waurika Lake and add a floating intake to access water at more points, including the lake's lowest elevations. It will also improve its intake gates to reduce entry of debris and protect fish. The lower intake will enable the District to access an additional 25,000 acre-feet during drought conditions. The District provides water to 6 cities and 250,000 people in an area that had been in drought for 5 years prior to 2015.

Texas

Southmost Regional Water Authority, Well Field Monitoring Project

Reclamation Funding: \$300,000

Total Project Cost: \$600,000

Southmost Regional Water Authority, a consortium of six water conservation and reclamation entities in Brownsville, Texas, will develop a monitoring and management program for brackish groundwater wells that are part of a desalination treatment facility which provides a reliable supply of water for approximately 50,000 people, decreasing dependence on the Rio Grande River. This project will: (1) implement a system for monitoring water levels and water quality in the local aquifer; (2) develop a groundwater flow model to forecast responses and changes in the aquifer; and (3) upgrade the pump in one well within the existing brackish wellfield. This project will build drought resiliency by increasing the reliability of water production during stress periods, monitoring aquifer health, and increasing

production capacity in an area that is drought-prone and where brackish groundwater provides an important alternative to fluctuating surface water supplies. This project is supported by the Lower Rio Grande Basin Study that identified brackish groundwater desalination as the best option for meeting long-term water needs and deficits exacerbated by climate change.

Texas Water Development Board, Early Warning Drought Tool

Reclamation Funding: \$144,763

Total Project Cost: \$289,526

The Texas Water Development Board will modify their existing drought prediction tool to provide more accurate probabilistic forecasts of average May-July rainfall, reservoir levels, and reservoir storage, by county, for the State of Texas. Water user groups in Texas are required to have a strategy for reducing water use when water sources reach certain drought response trigger levels. By providing early warning of drought probability, early response measures may be taken to mitigate the impacts of drought and to reduce the need for more severe use restrictions. The forecasts will be updated on a bi-weekly basis and made accessible to water managers across the state through the Water Data for Texas website. Texas has recently come out of a four-year drought, which is described as the second worst on record.