



2021 Drought Resiliency Projects

Arizona

City of Scottsdale, Scottsdale Water Aquifer Recovery and Storage Well

Reclamation Funding: \$1,500,000

Total Project Cost: \$10,489,189

The City of Scottsdale, Arizona will construct an aquifer storage and recovery well to provide a new, drought-resilient, supplemental drinking water supply. Approximately 87% of Scottsdale's water supply comes from its Central Arizona Project entitlement from the Colorado River and the Salt and Verde Rivers watersheds which are prone to long-term drought. The well and associated pipeline will make available an additional 3,000 acre-feet per year of water during drought years. The recharge credits from this well will make up for the loss of water when a shortage is declared on the Colorado River system. This project, supported by the 2015 Scottsdale Drought Management Plan (2015-2019), will also improve the water quality in the aquifer and prolong the ability to pump groundwater in times of drought.

Navajo Nation, Cameron Booster Pump Stations for Drought Resiliency in Western Navajo Communities

Reclamation Funding: \$947,750

Total Project Cost: \$1,895,500

The Navajo Nation will install three booster pump stations including pumps, wells, and associated infrastructure in the Bodaway-Gap and Cameron Public Water Systems, part of the Western Navajo Pipeline. Installation of the booster pumps at strategic locations will improve reliability of water conveyance from areas with better water quality. It will also increase the project area's existing water supply by 105%. Currently, the area is experiencing a severe drought and climate forecasts predict increasing frequency and duration of both short-term and long-term droughts. This project will assist the Nation in obtaining the infrastructure necessary to provide a reliable water supply to homes that currently haul water or rely on rainwater cisterns for their drinking and household needs.

California

Arvin-Edison Water Storage District, AEWS District Forrest Frick Pipeline KDWD East Side Canal Intertie

Reclamation Funding: \$500,000

Total Project Cost: \$1,006,980

The Arvin-Edison Water Storage District, located in Kern County, California, will construct a new intertie between the District and Kern Delta Water District that will provide an additional average annual water supply of approximately 1,900 acre-feet. Kern County has experienced a variety of drought impacts, most recently in 2014-2016. Construction of an intertie will increase the water supply reliability, allow for delivery flexibilities, enhance groundwater conditions, and provide water transfer potential between districts, especially during drought periods. This project is aligned with the needs outlined in the District's Drought Management Plan, relevant to water banking, monitoring hydraulic levels or conditions, and providing alternate water supplies.

City of Folsom, City of Folsom Drought Resiliency Project

Reclamation Funding: \$750,000

Total Project Cost: \$2,482,060

The City of Folsom, in northern California, will implement three projects that combined will provide 4,596 acre-feet per year of additional supply: rehabilitation of the Ashland Well No. 1 intertie to provide a new groundwater supply; installation of larger pumps and a pipeline to recycle backwash water at the City's water treatment plant; and installation of a non-potable well that will provide groundwater in lieu of surface water for irrigation. These three projects will increase water supply reliability and improve the City of Folsom's water management. The City of Folsom is currently experiencing severe drought conditions that are impacting the City's fire preparedness, wildlife, agriculture, and tourism. These projects are supported by the Regional Water Reliability Plan (2016) that was developed as part Reclamation's

Drought Response Program's Contingency Planning process and in collaboration with multiple water purveyors through the Regional Water Authority.

City of Long Beach, New Wells Alamitos 9A and 14

Reclamation Funding: \$1,500,000

Total Project Cost: \$9,365,341

The Long Beach Water Department (LBWD), in Los Angeles County, California, will construct two new production wells for the Central Groundwater Basin to replace three low-producing wells. The new wells are expected to add an additional 4,280 acre-feet per year of local, high-quality water to the City's drinking water supply. LBWD provides water service to approximately 89,000 customers, including several disadvantaged communities. The project will enable LBWD to increase its local reliable water supply, especially during times of drought, the most recent of which occurred in 2014, 2015, and 2017. The project is supported by LBWD's 2015 Urban Water Management Plan.

City of Sacramento, Fairbairn Water Treatment Plant Groundwater Well Improvement Project

Reclamation Funding: \$1,500,000

Total Project Cost: \$7,511,900

The City of Sacramento, California, will construct a water treatment plant to treat water from a recently completed high producing groundwater well that is unusable due to high levels of manganese. The project will allow for the use of an additional 4,840 acre-feet per year from the impaired well. The City has been investing in the expansion of its groundwater pumping capacity and conjunctive use programs to diversify its water portfolio and mitigate the ongoing drought conditions faced by the region. This project is supported by the City's continual water management and drought response planning efforts including its Urban Water Management Plan and Groundwater Master Plan.

City of Santa Barbara, Charles E. Meyer Desalination Plant Product Water Pump Station Upgrades Project

Reclamation Funding: \$1,500,000

Total Project Cost: \$3,144,660

The City of Santa Barbara will upgrade its water pumps, instrumentation, and piping at the Charles E. Meyer Desalination Plant (Plant) to enable the City to deliver water from the Plant to the City's regional Water Treatment Plant. This project will allow the City to convey desalinated water to its entire service area and other water agencies located on the South Coast of Santa Barbara County. The project will build local and regional resiliency to drought by increasing the reliability of water supply by 3,125 acre-feet and improving water management of 33% of its supply. This project is supported by the City's Long-Term Water Supply Plan.

East Orange County Water District, VanderWerff Well Construction Project

Reclamation Funding: \$500,000

Total Project Cost: \$4,094,340

The East Orange County Water District, in southern California, will construct a new domestic supply well to replace an old, contaminated well. The new well is expected to provide an additional water supply that is equivalent to 75% of the District's average annual demand and will provide local resiliency in times of drought. The District has a 2015 Urban Water Management Plan that addresses water shortages and drought contingencies, and shortage actions.

El Dorado Water Agency, An Intelligent Hydroclimatic Information System for Water and Power Management in the American River Basin

Reclamation Funding: \$300,000

Total Project Cost: \$615,299

El Dorado Water Agency, located in El Dorado County, California, will upgrade two sensors in a 12-sensor American River Hydrologic Observatory network. Additionally, an online operations dashboard will be created to display the real-time hydrologic observations in a spatial representation. This project will provide accurate data for day-to-day decision making related to water allocations, reservoir operations, hydropower generation, and environmental flow determinations. It is calculated to increase the forecast reliability and availability of up to 18,000 acre-feet of water per year. El Dorado County is currently experiencing moderate drought conditions but is prone to multi-year droughts as experienced in 2014-2016. The Agency is presently preparing (through Reclamation's Drought Program's Fiscal Year 2018 Drought Contingency Planning program) a Regional Drought Contingency Plan (RDCP) for the Upper American River Basin.

This project is priority element identified as part of the RDCP collaboration is to establish a regional process for monitoring near and long-term water availability, and for developing a framework for predicting the probability of future drought conditions.

Merced Irrigation District, Improving Merced Irrigation District's Water Resources Management Tool for Analyzing Drought Conditions

Reclamation Funding: \$957,824

Total Project Cost: \$1,957,824

The Merced Irrigation District, located in Merced County, California, will improve existing models for analyzing and predicting drought conditions. The project includes enhancing real-time operational modeling to track supply conditions and the installation of water measurement monitoring equipment to accurately track water supply and snow/snow melt conditions. The project will improve precipitation forecasting, improve hydrology and hydraulic technology, integrate groundwater interflow, and install gage stations and 11 soil moisture sensor sets for integration of base flow and soil moisture. This project will provide the District with the ability to better manage existing water supplies and to increase water storage. Located in the San Joaquin Valley, Merced County is presently experiencing moderate drought conditions and regularly experiences moderate to extreme drought conditions. This project supports the Merced Integrated Regional Water Management Planning efforts.

Shafter-Wasco Irrigation District, Conveyance Improvements to Farmers Cooperative Recharge

Reclamation Funding: \$500,000

Total Project Cost: \$1,098,110

The Shafter-Wasco Irrigation District, located in the southern San Joaquin Valley of California, will construct a new pipeline to convey the District's surplus water to a newly constructed 32-acre recharge basin. The 1,600 linear feet of 24-inch PVC pipe will convey the maximum recharge capacity of 14.7 acre-feet per day in addition to the existing irrigation demand supplied by the 15-inch lateral it will be replacing. The project will optimize the District's ability to store/bank surplus water in wet years and recover it in dry years, providing up to 2,088 acre-feet per year in groundwater storage. This area has recently experienced exceptional drought conditions and the ability to rely on groundwater supply is essential during dry times. The proposed project is outlined as a mitigation action in the Reclamation sponsored Drought Contingency Plan that that District is currently developing.

Southern San Joaquin Municipal Utility District, SSJMUD-NKWS D Intertie Pipeline for Regional Drought Resiliency

Reclamation Funding: \$1,500,000

Total Project Cost: \$4,823,103

The Southern San Joaquin Municipal Utility District (SSJMUD) will construct an intertie pipeline for the delivery of return water from North Kern Water Storage District (NKWS D) for the return of previously banked water. The intertie will provide additional water supplies to offset the lack of water supply during dry years. SSJMUD utilizes conjunctive use measures to ensure long-term sustainability for water users. This project will directly help with SSJMUD's drought resiliency and help increase access to groundwater supplies by providing an additional 2,814-acre feet per year, representing a 17.5% increase in the total annual average water supply. The project is supported by SSJMUD's Drought Contingency Plan.

Colorado

City of Aspen, Enhanced Hydrologic Measurement: Streamflow Gage and Snow Telemetry Station Project

Reclamation Funding: \$59,447

Total Project Cost: \$118,924

The City of Aspen in Pitkin County, Colorado will work with USGS and NRCS to install a stream gage and a snowtel site to better forecast water supply shortages so that water demand management ordinances can be implemented in a more-timely manner. The proposed project will include the installation of two new measurement devices, which will provide near real-time streamflow measurements and local snowpack and hydrologic data. This will be used for the City's near-term drought monitoring efforts and for its long-term water supply and management planning. The City's Municipal

Drought Mitigation and Response Plan, adopted in July 2020, has ordinances to limit water use based on drought conditions. Because the City has limited water storage and its water supply can fluctuate significantly in times of drought, these measuring stations will help the City better respond to future droughts.

Kansas

Southwest Kansas Groundwater Management District No. 3, Water Use and Climate Evaluation Service to Irrigators for Drought Resiliency in Southwest Kansas

Reclamation Funding: \$92,026

Total Project Cost: \$192,034

The Southwest Kansas Groundwater Management District No. 3 will better manage groundwater used by irrigators in 12 counties in southwestern Kansas by building a database to provide annual water management reports to every irrigator in the District. These reports will detail the water use, remaining saturated thickness of the aquifer, an evaluation of the effect a reduction in use would have on the aquifer, a monthly overview of the year's drought monitor during irrigation season, and an economic overview comparing water supply costs with nearby users with similar project conditions.

Nevada

Las Vegas Valley Water District, Drought Resiliency Using Groundwater Production Wells: Ultraviolet Treatment for Legionella pneumophila Inactivation

Reclamation Funding: \$848,372

Total Project Cost: \$1,696,744

The Las Vegas Valley Water District, located in Clark County, Nevada, will install five ultraviolet systems to treat Legionella pneumophila in five production wells. This project will allow the District to use the five groundwater wells as a new water supply providing an additional 4,033 acre-feet of water per year. Clark County has experienced drought conditions every year since 2000, and this additional water supply will offset drought-related supply reductions from the Colorado River, which the District currently relies on for more than 90% of its water supply. The District is a member agency of the Southern Nevada Water Agency; the Agency's 2019 Water Resource Plan and Joint Conservation Plan prioritize growing temporary water supplies to meet demands or offset potential supply reductions.

Southern Nevada Water Authority, Warm Springs Natural Area Riparian Restoration Project

Reclamation Funding: \$189,351

Total Project Cost: \$422,742

Southern Nevada Water Authority will restore 21 acres and protect an additional 24 acres of habitat from drought impacts at Warm Springs Natural Area, a 1,250-acre property near the town of Moapa, Nevada. The property is regionally significant because it contains more than 20 perennial springs that form the headwaters of the Muddy River and provides an estimated 80% of the remaining habitat for the endangered Moapa dace. This project will rebuild the flood plain and replace non-native plants that cause stream shading with deciduous native plants that allow more sunlight to reach the stream, increasing nutrient rich leaf fall into the stream and reducing wildfire risk and potential for erosion and sedimentation during flood events. The project will also provide drought-resilient habitat for the endangered southwestern willow flycatcher and threatened yellow-billed cuckoo.

North Dakota

East Central Regional Water District, Drought Resiliency Project for Fiscal Year 2021

Reclamation Funding: \$733,081

Total Project Cost: \$1,466,163

East Central Regional Water District, in Grand Forks County, North Dakota, will construct a 9-mile raw water transmission pipeline between Larimore, North Dakota and the District's Water Treatment Plant. The project will provide the District with access to an additional 500 acre-feet per year of raw water supply (29% supply increase) from the Elk Valley Aquifer. Access to this additional supply will be achieved by utilizing the City of Larimore's wells that are

currently not in use. This raw water pipeline is supported by the District's Long-Term Water Supply Drought Mitigation and Supply Redundancy Plan and is currently the District's highest priority effort.

Utah

Provo City, Rock Canyon Aquifer Storage and Recovery Project

Reclamation Funding: \$1,500,000

Total Project Cost: \$17,960,000

Provo City in Utah County, Utah will construct an Aquifer Storage and Recovery (ASR) project that includes two pump stations—one along the Provo River, the other near the Timpanogos Canal—and a conveyance system from the Provo River to the Rock Canyon site. Once completed, the project will augment the City's aquifer water supply with an additional 15,000 acre-feet annually, boosting Provo's ability to withstand droughts and accommodate rapid population growth. ASR projects are identified in the 2019 Provo City Water Conservation Plan as a high priority for drought resiliency.