

FY 2018 Drought Resiliency Projects

California

City of Anaheim, CA, Modjeska Park: Urban Model for Storm Water Detention and Infiltration **Reclamation Funding: \$750,000** **Total Project Cost: \$3,421,443**

The City of Anaheim in Orange County, California is implementing its first project of a larger citywide effort to capture and infiltrate stormwater as an approach to drought resiliency. The project will utilize the footprint of an existing 37,000 square foot city-owned parking lot to install underground storage modules, which will be able to capture and infiltrate 182 acre-feet per year of dry weather and urban storm runoff into the City's groundwater. The project will prevent contaminated runoff from entering Bolsa Chica Channel, a local waterway. Drought resiliency will be improved by capturing more water within the basin and reducing runoff to the ocean, which increases overall water supplies in a basin that often experiences severe drought. Several local and Federal planning studies, including Reclamation's Santa Ana Watershed Basin Study, have identified stormwater capture as an important component for increasing water reliability in the region.

City of Santa Ana, CA, Well 32 Rehabilitation Improvements

Reclamation Funding: \$750,000 **Total Project Cost: \$5,290,000**

The City of Santa Ana, in Orange County, California, will rehabilitate existing Well 32 that was decommissioned in 2004 due to high nitrate concentrations and operational inefficiencies. The City will retrofit the well to meet current standards and will also construct approximately 3,250 feet of new pipeline to convey the well's flow to Garthe Reservoir where the water will be blended with other water sources to lower nitrate levels. This project will provide the City with an additional 4,000 acre-feet of water per year for municipal and industrial use. Rehabilitating Well 32 will assist the City in building long-term drought resilience by increasing local water supplies. This project supports goals identified in the City's Drought Action Plan.

Eastern Municipal Water District, San Jacinto Valley Raw Water Conveyance Facilities – Phase I **Reclamation Funding: \$750,000** **Total Project Cost: \$13,457,500**

Eastern Municipal Water District in southern California will provide dedicated imported raw water conveyance for recharge operations. The first phase of the project includes the construction of approximately 2.25 miles of 60-inch transmission pipeline, a new service connection with Metropolitan Water District of Southern California, and a pumping station/chlorination facility. The project will interconnect the new transmission pipeline with an existing pipeline in order to convey imported water to existing and future recharge facilities. The project will make available an additional 5,467 acre-feet per year for recharge. This project supports the goal identified in a regional Water Surplus and Drought Management Plan of utilizing surplus water supplies during dry-year deficits.

California (cont.)

Elsinore Valley Municipal Water District, Palomar Well Replacement Project

Reclamation Funding: \$300,000

Total Project Cost: \$1,152,649

The Elsinore Valley Municipal Water District in southern California will construct a new potable water well with pumps, motors, discharge piping, and other appurtenant infrastructure. The project is expected to yield approximately 1,937 acre-feet per year of new potable groundwater. The additional water supplies represent approximately 7% of the District's annual average demand. The project was identified as a mitigation action in the District's recently completed Drought Contingency Plan, developed through Reclamation's Drought Response Program. This project is part of the District's long-term strategy to provide a reliable and redundant water supply to customers by optimizing the use of local water supply sources.

Inland Empire Utilities Agency, Wineville Basin and Jurupa Basin Improvements

Reclamation Funding: \$750,000

Total Project Cost: \$15,866,646

The Inland Empire Utilities Agency in Chino, California will improve the existing Wineville and Jurupa Basins to improve groundwater recharge in its service area. The project will include the expansion and modification of existing recharge basins, installation and expansion of pump stations, and an intertie between the Wineville and Jurupa Basins for stormwater and dry weather runoff recharge. The project will enable the Agency to divert, capture, and recharge an additional 2,760 acre-feet to the Chino Groundwater Basin. This project is part of the Agency's 2013 Recharge Master Plan Update, a local plan aimed at long-term, sustainable management of groundwater supplies in the Chino Basin. The Agency has identified the capture and recharge of stormwater and dry weather runoff as an opportunity to improve water supply reliability, and contribute to the region's drought resilience.

Mojave Water Agency, City of Adelanto Connection to R³ Pipeline

Reclamation Funding: \$300,000

Total Project Cost: \$2,500,000

The Mojave Water Agency, located in San Bernardino County, California, will construct a 5,800-foot, 24-inch ductile iron water main that will connect the storage facilities of the City of Adelanto to the existing Upper Mojave River R³ Project. The pipeline will add the City of Adelanto as a direct turnout to the R³ Project, providing a supplemental supply of 2,340 acre-feet per year to reduce the City's dependence on an over-drafted groundwater supply. California's recent drought further exacerbated the groundwater production limitations. This project supports objectives identified in multiple planning efforts including Urban Water Management Plans from both the City of Adelanto and the Mojave Water Agency, and the Mojave Integrated Regional Water Management Plan.

North Kern Water Storage District, Return Capacity Improvements for Regional Drought Resiliency

Reclamation Funding: \$750,000

Total Project Cost: \$1,547,121

The North Kern Water Storage District, located north of Bakersfield, California, supplies farmers with irrigation water for approximately 60,000 acres of orchards and vineyards. In addition, the District operates a groundwater recharge facility that serves as a water bank for neighboring districts (banking partners). The District proposes to expand the recovery and return capacity of the groundwater recharge facilities by constructing two new recovery wells. The new recovery wells, along with five existing wells, will be connected via manifold pipelines to the Friant-Kern Canal to return previously stored water to its banking partners. The project will yield an additional 11,032 acre-feet of water for return in critically dry years, providing water supply reliability in times of drought. The project supports the goals of relevant planning efforts completed in the region including the Poso Creek Integrated Water Management Plan.

California (cont.)

San Juan Water District, North American Basin Regional Drought Mitigation Interties Project **Reclamation Funding: \$300,000** **Total Project Cost: \$622,185**

San Juan Water District (SJWD) and Sacramento County Water Authority (SCWA), in the Sacramento region of California, will complete two interties that were identified as mitigation actions in the North American Basin Regional Drought Contingency Plan recently completed under Reclamation's Drought Response Program. This project will: 1) construct an intertie by SJWD to receive water from Placer County Water Authority; and 2) complete an intertie by SCWA to deliver groundwater to the City of Sacramento. These combined projects will provide water managers increased flexibilities in delivering up to 9,521 acre-feet per year in water supplies. The interties will address water deficits during times of drought, and allow for the offset of surface water supplies in winter months, leaving the water supplies in Folsom Reservoir.

Semitropic Water Storage District, Cox Canal Pumping Plant and Intertie **Reclamation Funding: \$750,000** **Total Project Cost: \$2,522,561**

Semitropic Water Storage District in the southern San Joaquin Valley, will install permanent pumping facilities to convey surplus surface water supplies from Buena Vista Water Storage District to Semitropic. The Semitropic Water Storage District's service area has been experiencing abnormally dry to exceptionally dry conditions over the past several years. The pumping plant and intertie will provide an additional 3,075 acre-feet per year to the District. The District has an Agricultural Water Management Plan that identifies addressing drought resiliency by supporting groundwater banking and pumping.

Shafter-Wasco Irrigation District, Recovery and Return Improvements to District Spreading Grounds for Drought Resiliency

Reclamation Funding: \$300,000 **Total Project Cost: \$1,176,885**

The Shafter-Wasco Irrigation District in the southern San Joaquin Valley of California, will construct two recovery wells and a conveyance pipeline in the District's Kimberlina Spreading Grounds Facility to connect the well supply to the District's north mainline. The project will add 952 acre-feet per year of water over the 30-year project lifespan. This project will drill two deep wells and equip the pumps, motors, discharge piping, electrical equipment, and conveyance pipeline necessary to allow for recovery of banked groundwater supplies and return to the north mainline. The project, supported by the District's Agricultural Water Management Plan, provides access to an alternative water supply in times of drought - improving drought resiliency, and water supply management within the region.

United Water Conservation District, Iron and Manganese Treatment Project **Reclamation Funding: \$300,000** **Total Project Cost: \$4,210,650**

The United Water Conservation District, located in Ventura County in southern California, will construct an iron and manganese filtration system for deep wells at the El Rio Water Treatment and Groundwater Recharge Facility. Since 2012, Ventura County, has experienced substantial drought conditions and is currently experiencing a severe drought, as indicated in the U.S. Drought Monitor. Shallow wells are increasingly impacted by elevated nitrate levels due to drought-related groundwater level declines and deep wells utilized for blending are limited by high levels of iron and manganese. The treatment of deep groundwater will allow for increased water blending with shallow groundwater, resulting in greater use of both shallow and deep groundwater. Additional upgrades to tanks and pumps will also improve the operational flexibility and drought resilience of the District resulting in the better management of 11,757 acre-feet of water per year. This project was identified in the District's Urban Water Management Plan as an action to maintain water supply reliability during drought conditions.

California (cont.)

Westlands Water District, Pasajero Groundwater Replenishment Project

Reclamation Funding: \$750,000

Total Project Cost: \$1,687,516

Westlands Water District in Fresno County, California will construct a 60-acre groundwater recharge basin and pump station to increase flexibility to facilitate the transfer, or exchange of water supplies, by allowing the District to deliver 10,000 acre-feet or more of groundwater in place of surface water for irrigation. This project will help reduce groundwater overdraft, a severe drought related concern in the Central Valley, by recharging the aquifer with surface water during times of excess supplies (flood flows), and recovering this water later during dry periods. The District has identified and prioritized the project as key to groundwater sustainability efforts to mitigate future droughts. The project will help alleviate the severe drought impacts experienced by the District's agricultural, municipal and industrial customers during the recent 2013-2016 drought.

Yuba City, CA, Groundwater Well Construction

Reclamation Funding: \$750,000

Total Project Cost: \$3,983,159

Yuba City, California, near Sacramento, will construct a groundwater well, which will produce 2,400 acre-feet per year of water. Currently, the City draws 90 percent of its total water use from the Feather River. The use of groundwater will reduce the amount of surface water the City uses and will provide a more reliable source of water during droughts. The City's Urban Water Management Plan supports the development of a groundwater well to increase the City's water supply reliability.

New Mexico

Elephant Butte Irrigation District, Watershed Scale Stormwater Monitoring and Capture

Reclamation Funding: \$180,670

Total Project Cost: \$362,454

The Elephant Butte Irrigation District, headquartered in Las Cruces, New Mexico, spans Doña Ana and Sierra Counties. In response to ongoing drought conditions, the District will develop and modernize its infrastructure to facilitate watershed-scale flow management, stormwater harvesting, and aquifer recharge. The District is a beneficiary of the southern New Mexico portion of the Bureau of Reclamation's Rio Grande Project. The project consists of expansion and improvements to the District's storm monitoring network including construction of a river meter cable on the Rio Grande, upgrades to arroyo water monitoring and data collection with installation of radar technology sensors, installation of sixteen additional rain gauge sites and gate automation of four existing stormwater capture sites and one new site. The new data obtained from this project will allow for better system management through faster information transfer and shortened personnel response time, resulting in better water capture and water management during storm events.

Utah

Ephraim City, UT, Southwest Well Construction and Water Delivery Infrastructure

Reclamation Funding: \$645,255

Total Project Cost: \$1,433,900

Ephraim City, located in Sanpete County in central Utah, will construct a new well capable of producing up to 328 acre-feet of water per year, a 28% increase in the City's annual supply. The City will also construct a short connection pipeline from the new well location to tie into the City's potable water system. Ephraim City, which is experiencing a six-year long drought and poor-quality drinking water, will increase the City's drought resiliency by making a new source of water available and increasing the overall quality of potable water supplies during extended drought periods. The project supports a need identified in the City's Water Management and Conservation Plan.