

# Mauricio Guardado of the United Water Conservation District: Building Drought Resilience in Ventura County, California



Mauricio Guardado, the general manager of the United Water Conservation District.

**T**he United Water Conservation District manages, protects, conserves, and advances the water supply in a 375-square-mile service area in Southern California. Through careful monitoring and management, it sustains the Santa Clara River's water resources, its tributaries, and its associated aquifers in an environmentally balanced manner. To build resilience in the face of California's worsening drought-flood cycles, the district is aggressively pursuing both new sources of water supply and new ways to use its vast storage capacity. In this interview, United's general manager, Mauricio Guardado, tells Municipal Water Leader about the district's impressive projects, which span aquifer recharge, brackish water desalination, dam improvements, and more, and the successful partnerships and funding applications that have made it all possible.

**Municipal Water Leader:** Please tell us about your background and how you came to be in your current position.

**Mauricio Guardado:** I received my bachelor's degree in civil engineering and am a registered civil engineer in California. After college, was hired by San Gabriel Valley Water Company. From there, I moved to the public sector,

functioning as the director of engineering for Cucamonga Valley Water District and later managing the Santa Clarita Water Division of the Castaic Lake Water Agency, which today forms part of Santa Clarita Valley Water Agency. I joined United as its general manager in 2015.

**Municipal Water Leader:** Please introduce United.

**Mauricio Guardado:** United was originally formed as the Santa Clara Water Conservation District in 1927. Voters approved the formation of United Water Conservation District in 1950. From the beginning, United has distinguished itself as a leader in sustainability and water management. Our storage, recharge, and wholesale operation serves a population of about 400,000 and about 60,000 acres of agricultural land. Our 375-square-mile territory stretches from the Los Padres Mountains to the coast, including the cities of Fillmore, Oxnard, Port Hueneme, Santa Paula, and Ventura; Naval Base Ventura County (NBVC); and several mutual water districts and groundwater extractors.

We replenish and recharge several groundwater basins within our service area. Our groundwater recharge supply



One of United's recharge basins.

also supports a \$2 billion annual farming industry. In addition to supporting local water supplies, our aquifer recharge activities serve a significant role in combating seawater intrusions.

We also have a large reservoir, Lake Piru, that collects tributary runoff. As a state contractor with California's State Water Project (SWP), we also have other options and opportunities to convey, store, and release water.

**Municipal Water Leader:** What infrastructure does United operate?

**Mauricio Guardado:** We own and operate the Santa Felicia Dam. This important structure is part of Lake Piru, our largest reservoir, which has a storage capacity of approximately 86,000 acre-feet. Through the Santa Felicia Dam, we perform constant conservation releases. When it's dry, or when groundwater basins are getting low, we release water from the dam and recharge downstream basins, providing a resource to groundwater-dependent ecosystems. We also rely heavily on the Freeman Diversion, which draws storm water from the

Santa Clara River. We also divert water through large canals and channels to various recharge basins within our service area. We have a total of 700 acres of recharge basin capacity. As an engineering standard, if a recharge basin has a percolation rate of 2–3 feet per day, it is doing well. We have some basins that have 12–14 feet per day percolation rate capability.

We also have, as I mentioned, a wholesale operation. We have a wellfield where we pump and treat potable water and convey it to various cities. We also have a large network of irrigation pipelines. The water we divert from the Freeman Diversion can be used to recharge various basins or for agricultural irrigation. It's an intricate system, and the great thing about it is that it uses little to no energy. When we release water from Santa Felicia Dam or when water is flowing in the Santa Clara River, we're diverting it by gravity flow. Often, we can release water from the dam and have it flow all the way to our Freeman Diversion, some 26 miles away, and from there to various channels and canals, creating multibeneficial uses and enhancing recharge, water quality, groundwater production, and environmental gains.

**Municipal Water Leader:** Are your water supplies affected by drought, and if so, what is United doing to become more resilient?

**Mauricio Guardado:** We're definitely affected by drought, because our water sources rely primarily on precipitation. To build more drought resilience, we've been finding new supply sources and increasing our capacity to store and produce water. For the last 6 years, we have implemented our water strategic plan and created partnerships with other water agencies that have excess allocations of SWP supply. This year, through our various partnerships and our own contract with the SWP, we brought in 24,000 acre-feet of supplemental water. There's also a recycled water component that the City of Oxnard uses to help offset supply.



Lake Piru, United's largest reservoir.

We're getting ready to construct phase 1 of a brackish water treatment plant with the U.S. Navy at NBVC's Naval Air Station Point Mugu. The plant will not only be able to clean up the contaminated brackish water plume inland but also extract seawater near the coast and treat it for beneficial use. This will bring a continuous supply of water into the region, one that we can use during long drought cycles to provide potable water to the navy and to residents, as well as for irrigated crops.

We just completed our iron and manganese treatment plant, which removes naturally occurring iron and manganese from wells in the lower aquifer system at the El Rio Water Treatment and Groundwater Recharge Facility. That enables us to use our lower aquifer during droughts rather than depleting upper basins.

After the shortages caused by the megadrought of the past decade, we were able to regroup and be fully prepared to take advantage of all the precipitation we had in 2023. We broke records between our storage release and our recharge efforts, which entailed recharging over 270,000 acre-feet,

or 88 billion gallons, of water. As a result, many of our groundwater basins are full or nearly full. Constructing and implementing our strategic water sustainability projects is a crucial part of capitalizing on this water resource reset.

We have undertaken various projects to increase sustainability at the Freeman Diversion. As we experience more flooding and snowmelt earlier in the year, we want to be able to store those flows. We hope to assist in the California Department of Water Resources' flood management program, because with our facilities, we always have somewhere to put that water. We can capture storm water, store the water, and recharge aquifers in large volumes. The improvements at the Freeman Diversion will allow us to capture water that we can't currently take because of the risk of clogging our highly efficient recharge basins. With modifications, we'll be able to take more of that highly sediment-laden water and put it to beneficial use instead of just letting it flow out to the ocean.

**Municipal Water Leader:** Please tell us about the Santa Felicia Dam Safety Improvement Project.

**Mauricio Guardado:** After the Oroville Dam spillway crisis in Northern California in 2017, state and federal regulators reassessed many probable maximum flooding calculations. When the regulators performed that reassessment on Santa Felicia Dam, the spillway was found not to meet the new increased flooding capacity standards, so we need to upgrade its capacity. In addition, we have to replace the outlet works, which no longer meet the state's seismic requirements. We are working to secure grant funding for these projects. We've been fortunate to get Water Infrastructure Finance and Innovation Act (WIFIA) loans through the U.S. Environmental Protection Agency to help with the design of the spillway. We've also applied for a \$50 million grant from the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program to help offset the cost of the outlet works project. We're on an aggressive schedule; we have to be ready for construction next year. We've faced delays, though, because the National Marine Fisheries Service (NMFS) continues to obstruct the process. We're trying to work through that, and we will, but it's difficult because NMFS wants to be engaged in the design and construction process even though, according to our attorneys, it has no jurisdiction or authority in this tributary area. We've been working closely with the Federal Energy Regulatory Commission, which is our federal nexus on this project, to try to overcome those hurdles.

**Municipal Water Leader:** How did you successfully apply for funding from the WIFIA program, and how do you plan to use that funding?

**Mauricio Guardado:** A few years ago, when we were developing our water strategic plan, we knew that we

couldn't fund our infrastructure projects ourselves. We built relationships and collaborated with others. We also realized that we needed a new business model to seek grant funding or low-interest loans. So, we developed a grant task force that focuses on applying for and qualifying for grants. We've already been able to procure over \$25 million toward the design and construction of various projects. We don't just wait around for grants—we actively pursue them. We have consultants on the state legislative side and on the federal affairs side who are working with our team to procure the right funding for the area.

**Municipal Water Leader:** What do you believe the results of the Santa Felicia Dam project will be?

**Mauricio Guardado:** Public safety is our number 1 concern. We must ensure that the Santa Felicia Dam is at its highest working order. In addition, the project will extend the service life of the dam. The new outlet works will have a completely different design, improving controls for water intake and releases. This project will significantly increase the service life of the facility and improve the efficiency of that operation.

**Municipal Water Leader:** Has your district obtained other federal or state resources to help with the completion of this project?

**Mauricio Guardado:** We are collaborating with many partners. We're working with the U.S. Department of Energy for grant funding and the California Department of Water Resources for Proposition 1 funding under the Integrated Regional Water Management and Water Use Efficiency Grant Programs. We have State Water Resources Control Board Proposition 1 funding under the Sustainable Groundwater Grant Program, the U.S. Department of Defense Community Infrastructure Program, and the Natural Resources Conservation Service. We're also teaming up with the California Governor's Office of Emergency Services, FEMA, the U.S. Fishery Service, and the U.S. Forest Service. We don't just fill out paperwork; we go meet people. We want them to understand our mission. We don't just ask for funding and hope that we get it before we start anything. We're in implementation mode, and many of these projects are shovel ready. That helps us gain appropriators' trust that we're going to continue moving forward. I think it helps tremendously to get to know the people in the different organizations and to build relationships. Does that take a lot of time and energy and additional support? Well, yes, but that's how we like to operate here.


**Municipal Water Leader:** Are you applying for any additional WIFIA loans? What advice do you have for other districts that are going through a similar process?

**Mauricio Guardado:** We are not at this time, but we are never going to take that off the table. The first award has been extremely useful in completing the improvement design. My advice to others is to get to know the folks behind the allocation and to respect what they have to go through. They have to review application after application. The more you can help them understand your project, the better off you're going to be. Make sure that you give them all the appropriate information, follow the checklist, and follow up. If you do that, you'll greatly improve your chance of securing funding.

**Municipal Water Leader:** Is there anything else that you'd like to discuss?

**Mauricio Guardado:** I would just like to reemphasize how important it is for the water industry to come together to take on the regulatory challenges that we all face. Some water agencies don't feel that they have the resources to push back, but if we can come together and help one another, that's how we'll make the biggest difference. Many agencies continue to implement arbitrary and capricious interpretations of policy and law, and it's costing rate payers millions of dollars. A unified front would help shape good, sound policy and law. At the Freeman Diversion alone, we've lost about a third of our water rights because of these regulatory requirements. I've been in the water industry for a long time, and I've seen this situation evolve.

**Municipal Water Leader:** What is your vision for the future of United?

**Mauricio Guardado:** Our vision is to become drought resistant—not just drought tolerant, but drought resistant. I think we've received support from the community to do that very thing. As a matter of fact, we just completed our fourth Water Sustainability Summit, which is a daylong workshop that brings people from the water industry together with legislators, regulators, key stakeholders, agency staff, and consultants to collaborate on drought resiliency measures. Collaboration is key. That's what we owe to our customers. That's what we're building toward, and I think we're well on our way. In the next 5–7 years, we expect to have completed all the projects I mentioned. 



*Mauricio Guardado is the general manager of the United Water Conservation District. He can be contacted at (805) 525-4431. For more about United, visit [www.unitedwater.org](http://www.unitedwater.org).*