Irrigation Leader

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NOVEMBER/DECEMBER 2025

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Do you have a story idea for an upcoming issue? Contact our editor-in-chief, Kris Polly, at kris.polly@waterstrategies.com.

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COVER PHOTO:
Ladona Clayton, Executive Director, Ogalalla Land and Water Conservancy. Photo courtesy of the Ogallala Land and Water Conservancy.

PHOTO COURTESY OF THE OGALLALA LAND AND WATER CONSERVANCY.

A Voluntary Program to Preserve Precious Groundwater Resources

By Kris Polly

Irrigated farmers are often wary of programs to permanently halt irrigation on areas of land, especially when agriculture is seen as the enemy of a healthy environment. That is why the Ogallala Land and Water Conservancy's model is so interesting: Its entirely voluntary program involves a several-year water right lease, based on a calculation of the fair value of the land and its groundwater, followed by the establishment of an easement that permanently restricts groundwater pumping on the property. The conservancy also works directly with landowners to transfer the land to nonirrigated use. Our detailed interview with Executive Director Ladona Clayton provides more information.

We also feature Natasha Rankin, the CEO of the Irrigation Association (IA). Ahead of the IA's Irrigation Show event in December, Ms. Rankin tells us about the organization's many activities across domains such as training and certification, standard-setting, technology adoption, workforce development, and advocacy.

Padinare Unnikrishna is the chief of the U.S. Section of the International Boundary and Water Commission's Engineering Services Division. He tells us about the many significant projects underway to maintain and modernize the agency's levees, dams, and other infrastructure along the U.S.-Mexico border and to manage sediment in the Rio Grande.

Reclamation District 108 (RD108) in Northern California delivers water through a system of 400 miles of canals and drains, 80 miles of which are concrete lined. Facing water shortages and persistent issues with cracking in its concrete-lined canals, RD108 opted to try AquaLastic, a sealant product. So far, says Deputy Manager Jordon Navarrot, the results have been highly promising.

After that, we speak with Todd Feenstra, the president of the Michigan-based hydrogeologic consultancy Tritium. Having worked for numerous agricultural irrigators with high-capacity wells, Tritium created a coalition called Midwest Water Stewards to bring the irrigators together to monitor area groundwater and ensure that their water use is responsible and sustainable.

Last, we check in with two regional industry associations. Curtis Lutje, the president of the board of the California Agricultural Irrigation Association, tells us how the association connects and advocates for its manufacturer and dealer members. Cassidey Plum, the executive director of the Idaho Irrigation Equipment Association, tells us about the association's similar support for product manufacturers and sellers and water managers in its area.

Irrigation districts, federal agencies, equipment manufacturers and suppliers, consultancies, regional coalitions, and industry groups—all are part of the mosaic of irrigated agriculture in the United States. We salute the hard work of all these sectors and invite you to read about them in this month's issue.

Kris Polly is the editor-in-chief of Irrigation Leader *magazine and the president of Water Strategies LLC, a government relations firm he began in February 2009 for the purpose of representing and guiding water, power, and agricultural entities in their dealings with Congress, the Bureau of Reclamation, and other federal government agencies. He may be contacted at kris.polly@waterstrategies.com.*

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Ladona Clayton of the Ogallala Land and Water Conservancy: Protecting the Land, Preserving the Aquifer, and Supporting Farmers

Center-pivot irrigation on the property of Danny Fish, one of the landowners involved in the OLWC water right lease agreement program.

In this interview, Ladona Clayton, the executive director of the Ogallala Land and Water Conservancy (OLWC), tells Irrigation Leader *about her efforts to protect the Ogallala aquifer—and all those who rely on it—by transitioning irrigated farmland to dryland cropping and grazing systems, establishing groundwater conservation easements, and securing long-term funding for future endeavors. More importantly, she talks about respecting community and farmers, the sacredness of the land and water, and how these understandings have built strong partnerships committed to a sustainable future for the region.*

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

Ladona Clayton: I'm the founding executive director of the OLWC. My background is in education, with a primary focus on educational administration. I hold a doctorate in educational leadership and served in the field of education for 32 years. Honestly, I thought I was retiring in 2021 after we bought a home in Angel Fire, New Mexico. We were just settling in when I was tapped on the shoulder to become the executive director of a brand-new conservancy that had been incorporated in August 2021. I was approached because of my 4 years of experience as a city commissioner for the City of Clovis. I resisted at first because I had just retired, but the conservancy really persuaded me to step up. I love my community, I love its people, and I understand the research and data on our water scarcity issues, so I accepted the position, and I've been serving in it since October 1, 2021.

Irrigation Leader: Please introduce the OLWC.

Ladona Clayton: The OLWC, a nonprofit 501(c)(3) public charity in Clovis, New Mexico, was founded in 2021 as the direct outcome of an action plan in the City of Clovis's

PHOTO COURTESY OF THE OLWC.

Master Water Assurance Plan, which was approved in 2017. In 2020, a steering committee, the Land Trust Development Committee, came together to organize an entity to protect the water supply for the region's farmers; the community; and Cannon Air Force Base (AFB), a key U.S. military installation whose water security depends on the Ogallala aquifer. The 13-member committee had five voting members, including Clovis Mayor Mike Morris, Central Curry Soil and Water Conservation District Chair Spencer Pipkin, Curry County Commission Chairman Chet Spear, and another Curry County commissioner; it also had an eight-member advisory group that included David Lansford, who had been mayor of Clovis until 2020; the Cannon AFB technical project lead; the NRCS District 10 conservationist; Peter Nichols, a Colorado water-rights attorney and noted expert in western water law; and agricultural producers.

While the OLWC's mission includes preserving land and open space, our top priority is conserving groundwater. We need to preserve as much groundwater as we can from a sole-source, finite aquifer. This aquifer is the only source of potable water for our community and for an important military installation. We also care deeply about the habitat, the recreational value, and the other values inherent in the lands within the paleochannels—the ancient, buried riverbeds that hold some of the deepest remaining groundwater in the aquifer. We also recognize the importance of helping existing irrigation farmers transition to other types of agricultural production.

Irrigation Leader: Would you tell us about the Ogallala aquifer and how much of it lies in New Mexico? What is the history of water use and water levels in the aquifer, especially in New Mexico?

Ladona Clayton: The Ogallala aquifer is one of the most important underground water sources in the world. It spans eight states; New Mexico has just a small portion of it, primarily in the eastern third of the state. Curry County has the largest share of the Ogallala aquifer, followed by Roosevelt and Quay Counties. Communities such as Clovis and Portales sit right on top of the aquifer; they rely on it entirely. Statewide, New Mexico pulls about 72–77 percent of its groundwater from aquifers other than the Ogallala, but here, in these three counties—Curry, Roosevelt, and Quay—it's almost entirely Ogallala.

Every farmer on the eastern side of New Mexico uses this aquifer, including dairy farmers, ranchers, and crop producers. In 2016, when I first started tracking groundwater use in the region, around 93 percent of it was used for agricultural production. That's now up to 95 percent. Again, this is a sole-source aquifer that also supplies potable water for domestic and municipal use.

When large-scale irrigation from the Ogallala aquifer in eastern New Mexico began after World War II, it just seemed so abundant. Water levels were high, and production rates were strong. Wells produced high volumes—over 1,000 gallons per minute—and the aquifer felt endless. People didn't truly grasp the value or fragility of the resource until it started to show signs of decline. By 2014, landowners and agricultural producers started noticing their wells dropping by an average of about 2 feet per year. That's when the reality hit that we were losing this water quickly. From 2016 to 2022, there was a period of extreme drought. That pushed agricultural producers to lean even harder on the aquifer. We saw major declines. Within New Mexico's portion of the Ogallala aquifer, the area-weighted average water level fell by around 19.1 feet from predevelopment (around 1950) to 2019. From 2018 through 2022, we lost 20 percent of the remaining water in the paleochannels in just 5 years. That's when we knew we had an emergency on our hands. We needed to act urgently and decisively.

Irrigation Leader: What kind of data were you seeing about the aquifer decline in your region?

Ladona Clayton: The City of Clovis had already done extensive research during the development of the Master Water Assurance Plan, which took a full year to complete. The data we gathered were strong and thorough. The Trinity Analysis that was commissioned by the Air Force Special Operations Command in 2012 raised serious concerns about the lifetime of the Ogallala aquifer, but at the time, few people responded—except then-Mayor David Lansford of Clovis, who began working to secure water for Cannon AFB.

In 2016, as a City of Clovis commissioner, I received a report from Dr. Geoff Rawling and Dr. Alex Rinehart, scientists from the New Mexico Bureau of Geology and Mineral Resources at the New Mexico Institute of Mining and Technology (New Mexico Tech). They had mapped the aquifer across Curry, Roosevelt, and Quay Counties. For the first time, we had clear, science-backed projections about the aquifer's future, and they weren't good. The data showed that portions of the aquifer were in danger of total functional depletion within 10–15 years. The saturated thickness in some areas was already too low to sustain irrigated farming. For example, the projection for the Portales area in Roosevelt County indicated depletion by 2024. That is what in fact happened: That is when the City of Portales imposed stage 3 emergency water restrictions, prohibiting lawn watering and car washes and severely limiting water use for swimming pools. It is still trying to recover.

That level of aquifer mapping was a game-changer. It gave us hard data to predict when real scarcity would hit. The City of Clovis responded by launching a project to recycle treated wastewater for parks, schools, and golf courses instead of using fresh groundwater. When I stepped into my role as executive director of the OLWC, I was tasked with implementing a key part of the City of Clovis's

An irrigation well on Danny Fish's farm. The setup includes an above-ground well casing with a discharge pipe connected to a pivot or distribution line; an electrical conduit and control box, indicating a powered pump beneath the casing; and a concrete pad, which seals and stabilizes the wellhead, common for irrigation systems on cropland.

2017 Master Water Assurance Plan: the Groundwater Banking Action Plan that the city commission had approved in December 2017. I was able to use the 2016, 2017, and 2018 data from Drs. Rawling and Rinehart. Their lifetime projections of the Ogallala aquifer gave us clear direction.

The plan that called for the creation of a conservation land and water trust had already been written, vetted, and approved, but many people thought it was too expensive or unrealistic to implement. From the beginning, the plan identified the U.S. Department of Defense (DOD), the Natural Resources Conservation Service (NRCS), the State of New Mexico, and local city and county governments as potential funding partners. Over time, each of those entities stepped up.

We also made it clear that the voluntary participation of local landowners was key. Without them, none of this works. As early as 2016–2017, these irrigation farmers were asking: "Commissioner Clayton, what are we going to do?" They had seen the data presented at the 2016 Eastern New Mexico Water Summit. They understood the urgency. They weren't in denial—they were ready for solutions. From the moment the Groundwater Banking Action Plan was written and adopted, despite a brief period of stagnation, we've made real progress. Today, 10 irrigated farmers have voluntarily retired their irrigation wells to help secure the region's water supply for future generations. They did this not just out of duty, but out of love for the land. These are generational farms and ranches. These families don't want to pass their land down without water. That commitment is what made this plan real and gives it staying power. Yes, the data sparked action, but it was the people, particularly our local farmers, who turned that data into momentum.

Irrigation Leader: Please tell us about the OLWC's plan to retire irrigation wells while keeping agricultural producers whole.

Ladona Clayton: Each participating landowner begins with a short-term (typically, 3-year) water right lease agreement (WRLA), which may be renewed annually while the permanent conservation easement is being finalized. The WRLA immediately halts pumping for irrigation and helps us conserve as much water as possible while fairly compensating the landowner. Then, we begin working toward a conservation easement. The lease keeps the farmer whole in two ways: It replaces the money that the farmer would have made growing crops, even though they're no longer growing them, and it gives them space to transition to other ways of generating income, such as by growing dryland crops or through hunting contracts. We're working to identify more ways to stack benefits on top of farmers' current ag production. Once the conservation easement is recorded, the annual WRLA payments stop, and the landowner receives a one-time easement payment. This program is 100 percent voluntary.

We've retired 56 irrigation wells to date, and there wasn't a single case in which we didn't keep the landowners whole. That's an important commitment under the DOD's Readiness and Environmental Protection Integration (REPI) Program, one of the sources of our funding. The only way to accomplish that is to truly appraise the value of the groundwater. We couldn't find an existing methodology for determining fair market value, so we wrote one ourselves and applied it. We did a three-period crop yield analysis to determine what crops had been grown, the associated costs, the revenue, and the current market value—everything it would take to grow those crops. We measured water use with wrap-around flow meters on center pivots and tied those wells together to get an accurate baseline figure for annual water production. Then, we multiplied the gallons per minute by the appraised value of the groundwater. The resulting total fair market value was the basis for the annual WRLA payment. The landowners retain the water rights. That continues even in an easement.

Irrigation Leader: What does the process of creating an easement look like, and what restrictions does an easement put on water use?

Ladona Clayton: The process of creating an easement is a lengthy one. We applied for our first three easements in 2022 and started working on them in 2023, and we're still at it.

The easement payment is calculated from an independent, fair market appraisal of the property, reflecting its diminished value after the permanent retirement of irrigation wells and restrictions on groundwater use. Because this payment compensates the landowner for the permanent loss of irrigation income

PHOTOS COURTESY OF THE OLWC.

and the long-term use of their water rights, it is typically significantly higher—often up to 10 times greater—than the annual WRLA payments.

The Texas Agricultural Land Trust (TALT) is our number 1 partner in this effort. We are a brand-new conservancy, so TALT will hold the acquired easements until we are accredited through the Land Trust Alliance. TALT is mentoring us as we move through the conservation easement process. Because TALT will hold the easements, NRCS requires that it also hire the appraiser.

The easement stipulates that the land can never again be irrigated. The water doesn't move. It remains on the owner's land and is still associated with their water rights. We place 80 percent of the groundwater used for irrigation under easement in perpetuity; the remaining 20 percent can still be accessed and used by the landowner or sold to a municipal water utility. Livestock and domestic wells, which account for only a small percentage of groundwater use in the paleochannel, are not included in the easement, so they can continue to be used as much as needed. In addition to water use restrictions, the easement typically includes limitations on subdivision, building, or commercial development to preserve the agricultural and open-space character of the land for future generations.

Irrigation Leader: How does the OLWC raise money for its activities?

Ladona Clayton: First, it is important to understand how we funded the creation of the OLWC. The group that incorporated the conservancy was made up of city and county officials, key agricultural producers, and some business representatives. They said, "We're going to need the city and the county to match each other 50/50 to support the conservancy's operational overhead." I was amazed and proud that the city and the county stepped up and said yes. For the first 3 years, the city and the county each contributed up to $150,000 annually. For the second 3-year contract with the city and the county, I asked them to reduce their annual contributions from a maximum of $150,000 to a maximum of $125,000.

Conserving groundwater through WRLAs and permanent conservation easements and transitioning farmers to new land uses is not an inexpensive project—the total ultimate cost is projected to be around $45–$50 million. Even before the formation of the OLWC, the Land Trust Development Committee went to federal sources, starting with two key programs in particular: the DOD's REPI Program and the NRCS's Regional Conservation Partnership Program. The City of Clovis Master Water Assurance Strategic Planning Committee had already researched REPI while writing the Master Water Assurance Plan. REPI is only an option because of the presence of Cannon AFB and the

The farm of Ricky Lockmiller, one of the landowners involved in the OLWC WRLA program.

27th Special Operations Wing, which provides critical mission capabilities for the Air Force Special Operations Command and holds high strategic value. With that in mind, the Land Trust Development Committee asked Cannon AFB to apply for a REPI award. It did so in 2020 and successfully received a REPI award of $2.368 million. At that time, Central Curry Soil and Water Conservation District served as the eligible entity on the project.

In 2021, the New Mexico Association of Conservation Districts wrote a proposal that resulted in an award of $6.911 million from NRCS, far exceeding the 50/50 funding match required by the REPI program. The Thornburg Foundation recently came on board, supporting us with $130,000. The State of New Mexico has also been a key partner. I approached State Senator Pat Woods and State Engineer Mike Hamman, who worked together to match our WRLA payment through legislative action. DOD covered year 1; the state covered year 2; and in year 3, they split the payment. In total, we have raised more than $20 million so far from all these funding sources.

We've been intentional about keeping overhead low so that as much funding as possible supports the land and landowners directly. All the federal, state, and even local contributions go primarily to the land. The local money covers our overhead.

Irrigation Leader: What does the transition to sustainable production methods look like, and what is the end goal you aim at?

A view of Cannon AFB.

Ladona Clayton: All along, we have endeavored and committed to making sure that landowners can remain in agricultural production if they want to. Most of the landowners who are partnering with us do want to continue. They're running cattle, they want to reseed for grasslands, and they're looking at playa restorations. They care about their lands. They want their soil to stay healthy, and they don't want to see their land become erodible. We see vibrant lands and sustainable agriculture, even though irrigation is no longer occurring. My responsibility, and the responsibility of our partners, is to ensure we get the resources needed to make that transition work. If it means finding land management funding, then we will do that and provide it to the participating landowners. I'm currently talking with several different partners about bringing grasslands back to their natural state, sometimes without even needing to plant new grass, by using cattle and rotational grazing. We're also looking at opportunities with pollinators. We are asking, "What kind of crops do we want to grow? What drought-resistant crops aren't being grown now?" We're taking a step-by-step approach with landowners.

Irrigation Leader: To add to that further, there are producers who have been doing the same rotation irrigation practice for generations. How will the conservancy help them with the transition to an easement?

Ladona Clayton: I think I would be remiss if I didn't highlight the importance of that generational aspect. This cuts to the heart of these landowners. We've sat down and talked about it multiple times, and sometimes, they'll wonder if they're doing the right thing. All they've known since they were little is flood irrigation and then center-pivot irrigation. It's heart-wrenching to hear them talk, because they feel like they're letting go of part of themselves, but they also understand that this transition is vital. We want to recognize, understand, and constantly respect the generational legacy of these landowners and ensure that whatever we're doing around irrigation practices for the future helps them successfully make the transition.

Irrigation Leader: Where does the transition to easements currently stand?

Ladona Clayton: After the initial 3-year WRLAs, the participating landowners could have turned their wells back on. None of them did so, however—and I think that's important. I truly believe these landowners are committed to the goal they set together as a group. They're all in the same semicontiguous well field in that paleochannel area. They know each other, talk to each other, and work together, and they're all still committed to the goal.

We're now going into our fourth year of lease payments. The WRLAs were originally supposed to last 3 years, but once we saw that the conservation easements weren't going to close in time for any of these participating landowners, we extended the agreements.

None of the landowners have placed their land in an easement yet. If the easement doesn't come in at a high

PHOTO BY STAFF SGT. MATTHEW PLEW, PUBLIC DOMAIN.

enough appraised value to make it worth their while, they have every right to return to irrigated farming. They don't have to sign. It could come down to the last day, and someone could say, "I'm not going to sign. I'm not going into an easement." My next step would be to ask what we could do to continue the partnership. Would they want to sell their water rights? Would they consider other options, such as a longer-term WRLA? The truth is that a longer-term WRLA wouldn't be as feasible for us. Making annual payments only works up to a point. Eventually, we need something more permanent. We're hopeful that the conservation easement is the answer for most people, and I will do my part to make sure that the easement appraisals come in strong.

Irrigation Leader: What is your message to farmers who are apprehensive about the idea of adjusting their traditional irrigation methods to preserve aquifer health?

Ladona Clayton: I think that apprehension is, first and foremost, completely valid. I really do understand it because I've already seen it with the group of landowners I have been working with since I started at the OLWC. Even though they came forward voluntarily because they knew they needed to retire their irrigation wells, that didn't mean it was easy. They still doubted themselves. My heart goes out to them because they're relying on us—the OLWC, the DOD, and all our partners—being committed and true to our word. We are. We've never failed to make a payment, and we won't. The trust, camaraderie, and mutual respect in this relationship have grown over time. I love that part of the work. We share the same purpose and the same goal.

Something else that's important to emphasize is that we've made sure every conservation easement is tailored to the individual landowner. It was never a one-size-fits-all approach. I think some people thought it would be, but it's not. Every easement will look different based on what the landowner wants. For example, do they want to build a barn or a house in a specific location? We can include that. Do they want to allow hunting on their land? That's up to them. Do they want to lease some acreage for dryland farming? They can do that too. The key is working with each individual farmer to make the best possible decisions for their land, their future, and their families.

Irrigation Leader: Would you tell us about the results you have achieved?

Ladona Clayton: We have retired 56 irrigation wells that account for 7,964 gallons per minute, and we've protected 12,846 acre-feet of groundwater. We're continuing to work to gain more wells. On a yearly basis, that equals 4.19 billion gallons of water per year that would have gone toward agricultural irrigation that is no longer being expended. Every year, the OLWC administers about $1.673 million in payouts. Multiply that by 4 years—that's significant federal and state funding that has come forward to ensure that the farmers have been paid competitively or at least kept whole.

We've been successful so far in moving toward dryland crop production. We're also looking at enhancing cattle grazing, and we're learning more about regenerative agriculture.

The network of partners we've built in this short period of time—state, federal, and local government agencies; conservation leaders; and New Mexico Tech, specifically the Bureau of Geology and Mineral Resources—has also been critical to the successes we've seen.

We updated our aquifer mapping in 2023–2024 and monitored the levels of the wells under agreement. In the northwest end, we had wells come up almost 13 feet—in one case, 12.53 feet. Every well in the northwest in that monitoring report had come up by no less than 3.5 feet after retiring those irrigation wells. This has really excited the participating landowners, because they believe the project is working. They're seeing that wells that had no water now have water again, and livestock wells that were no longer usable are back in business.

Irrigation Leader: When will you feel that the conservancy has succeeded in reaching its aim, and how long do you believe it will take to reach that point?

Ladona Clayton: The goal is to put everyone in that paleochannel area, that entire 34,071-acre footprint, under some form of agreement so that no one returns to irrigated farming, which we can't sustain. If people return to irrigation after 10 or even 20 years, it would put the aquifer at risk. Eventually, we aim to have all the easements placed in a land trust. Currently, the plan is for TALT to hold the easements; we would like them to be transferred to the OLWC once we become accredited. At that point, our responsibility would be to steward the lands, take care of the landowners, and continue to support their success.

Landowners celebrate 1 year in the WRLA program.

PHOTO COURTESY OF THE OLWC.

When we started, there were only about 11,000 acres available for enrollment. Then, the DOD said it was open to irrigation farmers enrolling dryland as well as irrigated acres, so we allowed that, too. We want to work with the dryland farmers in the paleochannel, too, to avoid the possibility of them returning to irrigation or selling their water rights. With the addition of the dryland acres, our footprint is 34,071 acres, and we've gathered up about 71–72 percent of the irrigation water in that area.

We've been at this since October 2021. Fiscal year 2025 marked the last year of the initial REPI project. We submitted a new 5-year proposal in September, and if approved, we will qualify for additional funding for the next 5 years. That will be important, since the conservation easements didn't happen as quickly as expected. From this point forward, I'd estimate it will take at least another 5 years to fully cover our 34,071-acre footprint, and after that, we intend to extend our work even further.

Irrigation Leader: How does this all relate to environmental protection?

Ladona Clayton: We understand the importance of our grasslands and playa wetlands and the urgent need to restore, or in some cases, revive them. Regenerative land use practices are essential for environmental health. We're prioritizing cover crops and ensuring compliance with the Highly Erodible Land Act, acre by acre, property by property, as we do our best to protect the wildlife that relies on these lands. Many bird species migrate through this region, while others live here year-round. In partnership with Playa Lakes Joint Venture, one of our key goals is to ensure that eastern New Mexico's native grasslands and wetlands continue to support bird populations and other wildlife, from deer to monarch butterflies. We are deeply mindful of this ecosystem's diversity.

Irrigation Leader: What is next for the OLWC?

Ladona Clayton: What's next is to fund the remaining easements. We have filed for seven conservation easements, with five being funded to date. I just worked with TALT to apply for another conservation easement, so we are now at eight. None of the easements have been closed. Three are slated to close no later than September 2026. The funds from the NRCS's Regional Conservation Partnership Program paid for three conservation easements; all the other easements will be funded under the NRCS's Agricultural Conservation Easement Program.

Another priority is building out the stewardship program with TALT. As we finalize these easements, it's possible that TALT will contract with the OLWC to steward the lands by conducting annual checks to ensure that they are meeting the requirements under the easement.

We also know we need to acquire more acres. I've calculated a baseline of 1.19 acre-feet of water per irrigated acre, which tells me that we'll need to include about 9,500 additional irrigated acres within our existing footprint or acquire some acres outside it to reach our goal of 50 years of groundwater security.

At the same time, a local water authority is working on bringing surface water for municipal and industrial use to Clovis and four other communities by building 130 miles of water conveyance pipelines from the Ute Reservoir in Logan, New Mexico. But surface water will always need to be supplemented with groundwater, especially since the surface water won't arrive until 2031 or 2032. We'll be working closely with EPCOR, the water utility, to determine how much of our landowners' groundwater will be needed to supplement this new water source during times of extreme drought. However, it's important to remember that the OLWC doesn't sell the water. The landowner makes that call. The OLWC focuses on protecting water for future potable use.

Finally, our work isn't just about eastern New Mexico—it's a model for how drought-stricken regions across the West can act now to conserve water, protect agriculture, and strengthen national security. We have a responsibility to keep sharing our model with other communities across New Mexico and with other states.

Irrigation Leader: Is there anything you would like to add?

Ladona Clayton: It really does come down to the people, the land, and their legacy. I was born and raised here, and my family and friends are still across this region. I've heard their voices and seen their tears—fearing they'd have to leave their homeland and the communities that raised them because there was no water left. They love this place and have poured their blood, sweat, and tears into it for a lifetime—this is their legacy. These landowners are courageous people, and those of us who work with them must have the courage to do what's necessary. What more can we do to save, respect, and honor the sacredness of our water and land going forward? We may not have all the answers today. This has not been an easy journey, but this pursuit is about people, their legacy, their land, and the water that makes it possible. So, we will press on. IL

Ladona Clayton is the executive director of the Ogallala Land and Water Conservancy. She can be contacted at ladona.clayton@ogalwc.org.

PHOTO COURTESY OF THE OLWC.

Honoring the Past – Ensuring Our Future

The water of the Rio Grande is the very life blood of the Middle Rio Grande Valley. For 100 years, the Middle Rio Grande Conservancy District has faithfully operated, maintained, and managed irrigation, drainage, and river flood control throughout the district.

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About the MRGCD

The Middle Rio Grande Conservancy District (MRGCD) was established in 1925. MRGCD operates, maintains and manages irrigation, drainage and river flood control in the middle valley. Serving approximately 11,000 irrigators, six pueblos and 100,000 parcels of land throughout the Middle Rio Grande, MRGCD is essential to maintaining the facilities required to upkeep the agricultural production in this area. The MRGCD owns and manages 30,000 acres of bosque, and has helped to establish Tingley Beach, the Rio Grande Nature Center, Los Lunas Bosque Open Space, Corrales Bosque Preserve, Escondido Lake State Park, among several more and all of which are open for recreational use by the public. The MRGCD also works in cooperation with other local, state, and federal agencies to protect the environment, wildlife, and endangered species. To learn more about the MRGCD visit www.mrgcd.com.

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MRGCD's riverside levees and drains protect communities along the Rio Grande in Sandoval, Bernalillo, Valencia and Socorro Counties. The estimated value of property protected by MRGCD's riverside levees is approximately $13 billion.

Natasha Rankin: Making the Irrigation Association a Hub for Policy, Innovation, and Workforce Development Across the Industry

Attendees at the 2024 Irrigation Show in Long Beach, California.


New technology on display at the Irrigation Show.

The Irrigation Association (IA) connects, represents, and advocates for the irrigation industry nationwide, including both agricultural and landscape irrigation. In addition to hosting the yearly Irrigation Show, which will be held December 8–11, 2025, in New Orleans, it provides irrigators with training and certification programs; establishes industry standards; highlights and promotes new technologies; makes connections across industries; and makes sure policymakers and legislators know that irrigation is a "technology-driven, sustainability-focused industry that's essential to addressing today's water and climate challenges." In this interview, we speak with Natasha Rankin, the CEO of the IA, about all of these initiatives and how she plans to forge forward in 2026 to ensure that the IA is "the hub that connects workforce, policy, innovation, and best practices across the irrigation industry."

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

Natasha Rankin: When I stepped into the role of CEO at the IA in 2022, I wasn't looking to manage the status quo—I came to lead transformation. My career has focused on building high-impact associations that deliver measurable value to members and stakeholders, often by sharpening the relevance and reach of professional standards, workforce pathways, and industry advocacy.

What drew me to irrigation was both its urgency and its promise. This industry has a powerful story to tell about the essential role irrigation plays in sustaining green spaces; strengthening communities; and securing the future of food, fiber, and fuel production. Water is the common denominator in how we grow, design, and steward our world, and irrigation sits at the intersection of sustainability, science, and practical solutions.

Irrigation Leader: Please introduce the IA.

Natasha Rankin: At its core, the IA exists to support the people and companies who make efficient irrigation possible and to elevate the critical role we play in ensuring global food security, designing and supporting healthy communities, and stewarding water.

We're focused on building a skilled, professional workforce; shaping policy grounded in the realities of water management needs; and accelerating the adoption of smart, science- and practice-based irrigation solutions. Whether it's through credentials that help someone land their first job or advance their career; programs that connect education providers with employers; or advocacy that ensures the industry's voice is heard in Washington, DC, and statehouses, we're helping our members do what they do best.

Our role is to connect the dots between employers and job seekers, between research and real-world application, between technical knowledge and public understanding, and between local projects and national conversations. When we do that well, we're not just supporting irrigation—we're creating the conditions for the entire industry to grow, lead, and thrive.

PHOTOS COURTESY OF THE IA.

Irrigation Leader: How does the IA support its members across the agricultural irrigation sector?

Natasha Rankin: For agricultural members, the IA is both an advocate and a partner. We help growers and suppliers navigate evolving regulations, align with conservation programs, and demonstrate the value of efficient irrigation practices to policymakers and the public.

We provide tools and training that strengthen their workforce, certification programs that validate expertise, and standards that ensure credibility in the marketplace. We also bring the agricultural community into direct conversation with manufacturers, dealers, researchers, and educators, ensuring that solutions developed in one part of the value chain are connected to real-world needs in the field. In short, we create a platform where agricultural irrigation professionals can access resources, influence policy, and connect to a broader ecosystem of innovation and support.

Irrigation Leader: What are the top issues or challenges currently facing the irrigation industry, and how is the IA responding to them?

Natasha Rankin: The top issues are labor, regulation, data, and the accelerating pace of change. Whether you're talking about a contractor in Florida, a grower in California, or a dealer or distributor serving customers nationwide, the themes are strikingly similar: It's harder than ever to find and keep skilled workers. Regulatory demands are increasing. Customers expect more, faster. And businesses are trying to keep up while still delivering quality, sustainable outcomes.

The talent pipeline is a major concern. Companies are struggling not just to hire, but to upskill employees fast enough to meet today's standards. At the same time, environmental pressures are mounting, and the digital transformation of agriculture and landscape systems is accelerating.

That's where the IA is stepping in, more directly than ever. We're focused on practical solutions: helping companies train their teams, meet certification requirements, stay ahead of policy shifts, and tell a stronger story about the value of what they do. We're not just hosting a trade show. We're creating tools, credentials, and programs that help irrigation businesses grow their people, meet rising expectations, and thrive in a changing landscape.

Irrigation Leader: What is the IA doing to support workforce recruitment, training, and certification in irrigation?

Natasha Rankin: We're fundamentally rethinking what it means to be a certified irrigation professional and how training connects to real jobs, real skills, and real opportunity. Instead of offering standalone certifications, we're moving toward a core credential that defines

Irrigation leaders gathered in Washington, DC, in March 2025 for the IA's Advocacy Summit to meet with decisionmakers and affect water policies that are important to members and the industry.

IA staff and industry leaders, including Natasha Rankin (fourth from right), gather in the Nebraska State Capitol building to commemorate the governor's designation of July as Smart Irrigation Month.

the foundational knowledge and skills every irrigation professional should have, with specializations that provide flexibility and reflect different sectors, roles, and levels of expertise. Whether someone works in agriculture or landscape, whether they are just getting started or are advancing into smart irrigation systems and water management, this structure allows them and their employers to build clear, flexible career paths. This approach is about more than testing knowledge. It's about equipping people to do the work, helping companies train their teams, and making it easier for public entities, licensing bodies, and workforce boards to understand and recognize irrigation credentials.

We're also piloting a revamped program that allows companies, educational institutions, and trainers to deliver IA-aligned education using either our content or theirs, mapped to IA competencies, and recognized for IA continuing education units. Our goal is to be a partner, not a gatekeeper, aligning with employers' needs while ensuring quality, credibility, and consistency in the training and recognition of irrigation professionals.

Irrigation Leader: How is the IA helping advance innovation and technology adoption?

Natasha Rankin: Innovation is happening across irrigation in labs, fields, and communities. What's often missing is a hub to connect those breakthroughs to practice. That's where the IA comes in. We spotlight new technologies through platforms such as the New Product Contest and Startup Showcase at the Irrigation Show. We also drive adoption by sharing real-world performance data, supporting standards that ensure quality, and advocating for policies that incentivize uptake. Our role is to bridge research, technology, and practice so that smart solutions move from the shelf into the field, where they deliver measurable results in water savings, productivity, and sustainability.

Irrigation Leader: What overlap or cross-pollination is there between agricultural and landscape irrigation in terms of technology innovation and adoption?

Natasha Rankin: There's far more overlap between agricultural and landscape irrigation than many realize. Both sectors share the same fundamental goal: applying water precisely and efficiently. They often use similar tools, such as soil moisture sensors, weather-based controllers, automation, and remote monitoring, to achieve it.

Where it gets exciting is in the cross-pollination. A technology proven in almond orchards may translate to turfgrass or sports fields; innovations in commercial landscapes may spark new practices on farms. By creating spaces for these sectors to learn from each other through certification competencies, best practices, standards development, and education, the IA helps accelerate adoption and elevate performance across the entire industry.

Irrigation Leader: One of the IA's strategic goals is to raise awareness of the impact and value of irrigation. What are the main challenges in terms of awareness and perception, and how is the IA working to tell the irrigation industry's story to policymakers and the public?

Natasha Rankin: One of our biggest challenges is invisibility. Too often, irrigation is overlooked in policy conversations or misunderstood by the public. People don't see the role it plays in food security, community resilience, and water stewardship, or they view it through an outdated lens.

We're working to change that. We're telling the story of irrigation as a solutions provider: a technology-driven, sustainability-focused industry that's essential to addressing today's water and climate challenges. We're bringing that message directly to policymakers and stakeholders, backed by real-world examples of how irrigation professionals are using data, automation, and innovation to deliver results. By reframing the irrigation sector not as a water user but as a leader in water management, we're elevating its role in one of the most critical conversations of our time.

Irrigation Leader: How is the IA engaging with federal policy issues important to irrigated agriculture, such as the Farm Bill or water infrastructure funding?

Natasha Rankin: We're actively engaged in the federal policy conversations to shape the future of irrigated agriculture, from conversations about the Farm Bill to ones about water infrastructure investment. Our focus is making sure those policies are practical, forward-looking, and grounded in the realities growers face every day.

That includes advocating for practical improvements at the U.S. Department of Agriculture's Natural Resources Conservation Service—such as reducing red tape, strengthening technical support, and ensuring conservation dollars truly benefit and reach growers. It also means advancing policies that support smart technology adoption, infrastructure upgrades, and long-term resilience. Through coalitions and partnerships, we're amplifying the voice of irrigated agriculture so that federal programs don't just exist on paper but also deliver in the field.

Irrigation Leader: What are your top priorities in the year ahead and your vision for the future of the IA and the industry it represents?

Natasha Rankin: Our top priority is making the IA the hub that connects workforce, policy, innovation, and best practices across the irrigation industry. That means launching a core credentialing system, expanding education through partners, strengthening our advocacy footprint, and ensuring members see measurable value in every engagement.

Looking further ahead, my vision is one of an industry recognized not just for delivering efficient irrigation but for leading on sustainability, resilience, and stewardship. I see irrigation professionals valued as essential to solving water and food security challenges. I see companies aligned through shared standards and workforce pathways. And I see the IA at the center, convening, connecting, and amplifying an industry that's a unifying force for innovation and stewardship. IL

Natasha Rankin is the CEO of the Irrigation Association. She can be contacted at natasharankin@irrigation.org.
For more on the IA, visit irrigation.org.

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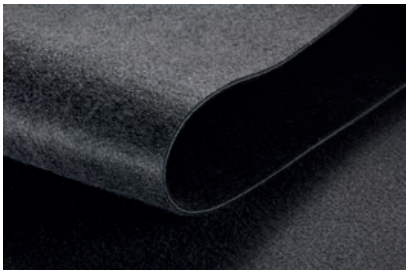

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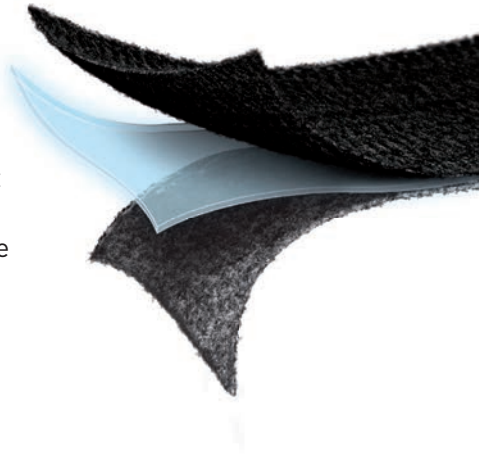

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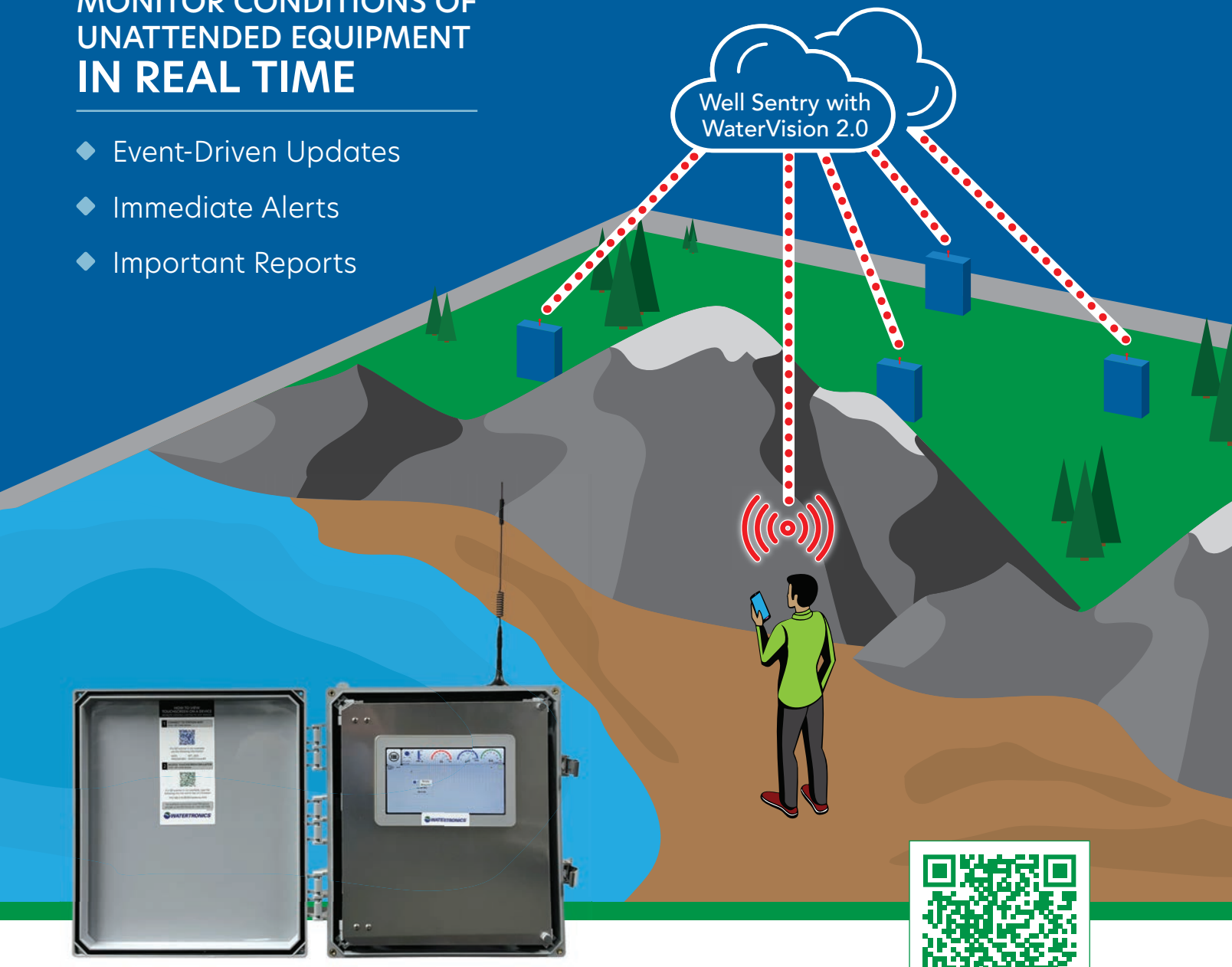

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Dr. Padinare Unnikrishna: Chief, Engineering Services Division of the U.S. Section of International Boundary and Water Commission

Two photos from the Rio Grande Canalization Project show the channel before and after sediment removal.

The Engineering Services Division (ESD) of the U.S. Section of the International Boundary and Water Commission (USIBWC) has big jobs to tackle along the 2,000-mile U.S.-Mexico border: responding to design needs for flood protection levees and drainage structures, carrying out hydrologic and hydraulic modeling, handling dam safety issues, managing sediment, and doing sanitation projects, among others. In this interview, we speak with Padinare Unnikrishna, the chief of ESD, about the division's work and its importance.

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

Padinare Unnikrishna: My background is in civil engineering, and I've been in the field of water for over 40 years. After finishing my bachelor's in civil engineering and master's in water resources engineering in India, I got my PhD from Utah State University in civil and environmental engineering. As a postdoc and research assistant professor, I conducted research and taught courses at the University of New Mexico. I spent 12 years in private engineering consulting, doing work related to storm water management, modeling, and design and other water resources issues. I worked on projects in the Southwest, on which I coordinated closely with flood control districts, municipalities, and the Federal Emergency Management Agency (FEMA). I've been with the USIBWC for the past 14 years. I consider myself fortunate to have experienced a mix of academics, engineering consulting, and federal service over the years.

Irrigation Leader: Please introduce the International Boundary and Water Commission (IBWC).

Padinare Unnikrishna: The IBWC is an old federal agency established as the International Boundary Commission in 1889. Its name was changed to the IBWC with the signing of the Water Treaty of 1944. IBWC has a U.S. Section and a Mexican Section. The USIBWC is headquartered in El Paso, Texas, and the Mexican Section is headquartered across the Rio Grande in Ciudad Juárez. There are field offices at locations along the entire border. The mission of the USIBWC is to provide binational solutions to issues that arise in the application of the U.S.-Mexico treaties. We focus on issues such as flood control, boundary demarcation, national ownership of water, sanitation, and water quality in the border region. The USIBWC manages two storage dams, Amistad Dam near Del Rio and Falcon Dam near Roma; diversion dams along the Rio Grande in Texas; and two wastewater treatment plants, Nogales International Wastewater Treatment Plant in Nogales, Arizona, and South Bay International Wastewater Treatment Plant (SBIWTP) in San Ysidro, California. The USIBWC has a staff of around 250 people. In addition to those based at headquarters, there are staff located at 11 field offices from San Diego, California, to Mercedes, Texas.

Irrigation Leader: Please tell us about ESD.

Padinare Unnikrishna: ESD conducts some in-house modeling and analysis and works with outside contractors to develop designs for our projects. Engineers in ESD review the design submittals and administer the contracts. The submittals are also reviewed by other divisions. After design, the projects go into the construction phase. The work is a joint effort, with inputs from USIBWC's master planning office, construction management division,

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environmental management division, and operations and maintenance division, among others. All divisions contribute to the success of our projects.

At ESD, we work on a range of projects, including the rehabilitation of the flood control levees along the Rio Grande and the Tijuana River. We're currently in the process of rehabilitating levee segments within the Rio Grande Canalization Project (RGCP) and the Rectification Project in the El Paso area (both of which are part of USIBWC's Upper Rio Grande Projects) and the Lower Rio Grande Flood Control Project (LRGFCP), which extends from Peñitas to Brownsville, Texas, and includes U.S. interior floodways. The RGCP includes 105.4 miles of levees from Percha Dam to American Dam, and the Rectification Project includes another 91 miles from American Dam to Little Box Canyon.

The RGCP, authorized by a 1936 act of Congress, was constructed from 1938 to 1943 to facilitate compliance with a 1906 convention between the United States and Mexico that provided for the equitable division of the waters of the Rio Grande and to properly regulate and control, to the fullest extent possible, the water supply for use in the two countries. The RGCP is not a continuous levee system. When the levees get old, they need to be redesigned for geotechnical strength and structural stability and to ensure that they are the proper height to protect against 100-year or design floods. Our construction management division will be working on the rehabilitation of the 8-mile Sunland East Levee in the RGCP, which extends from Borderland Road Bridge to Racetrack Drive Bridge.

We also work on projects dealing with drainage structures. We've been rehabilitating parts of the American Canal, which conveys water to municipal users in El Paso and farmers in the area. Other projects relate to dam safety and rehabilitation, hydrologic analysis, hydraulic modeling, sediment management, erosion protection, sanitation, and water conservation.

We also review applications for proposed projects in floodplains to make sure that they do not cause any adverse hydraulic impacts and are consistent with the 1970 Boundary Treaty. If a big structure is built in the floodplain, it has the potential to increase the water surface elevations and push flood waters toward either Mexico or the United States, increasing flood risk. We check for adverse hydraulic impacts and other effects on our infrastructure. These proposed projects are also reviewed by other divisions in the agency.

We work on projects in which the international boundary line between the United States and Mexico needs to be delineated. The survey group, which is within my division, works with our Mexican partners to jointly delineate and demarcate the boundary. For example, when a structure is being built near the international boundary line, a clear delineation of the boundary is required to prevent structures of one country from encroaching on the territory of the other. Port of entry projects and international bridge projects that cross the Rio Grande require our review. The survey group performs the boundary delineations and demarcations for these port of entry and bridge projects in coordination with the Mexican Section. There is a line of international boundary monuments along the land boundary between the two countries from American Dam all the way to the Pacific Ocean. Whenever the monuments are damaged, we work with the Mexican Section to rehabilitate these historic structures.

Irrigation Leader: What other infrastructure upgrades or modernizations do you currently have underway or planned?

Padinare Unnikrishna: We're working with our Mexican partners to rehabilitate Amistad Dam, a large, multipurpose international dam that spans the Rio Grande near Del Rio, Texas, and Ciudad Acuña, Mexico, and is jointly operated by the U.S. and Mexican Sections of the IBWC. The foundation of the dam is karstic limestone, and the dam is experiencing seepage on the Mexican side. We've been studying this problem for over a decade. The Mexican Section has been working on a design for the construction of a composite cutoff wall to mitigate the risk of failure with technical experts from both countries. The dam provides many benefits to downstream irrigators and communities, including flood risk management, hydropower generation, and water supply. The flood control and water supply missions are achieved along with another large international storage dam, Falcon Dam, located further downstream, near Roma, Texas.

Another large ongoing project involves addressing wastewater discharge into the Tijuana River in San Diego and the release of untreated water into the Pacific Ocean. The Tijuana River enters the United States from Mexico, then turns west and flows about 6 miles to the Pacific Ocean. The agency has an ongoing project to rehabilitate and expand the SBIWTP, which treats the wastewater from Tijuana and discharges the effluent into the Pacific Ocean. Because of infrastructure problems and rapid development in Tijuana, sewer lines frequently break, and sewage water escapes into the river. This is a challenging problem. After a facility assessment and predesign project conducted from October 2022 to November 2023, the agency awarded a progressive design-build contract to rehabilitate the SBIWTP and expand it from 25 to 50 million gallons a day in December 2023.

We also awarded a design project for the dredging of the Arroyo Colorado, part of the LRGFCP. The project, which got underway in May 2025, aims to remove sediment from the arroyo and reestablish its design capacity of 21,000 cubic feet per second. We are also working on an ongoing hydraulic modeling project for the U.S. interior floodways in the LRGFCP.

The Thurman Arroyo II sediment interception basin, located along the Rio Grande near Hatch, New Mexico.

Finally, we are identifying sediment removal projects as part of the RGCP Sediment Management Program.

Irrigation Leader: How is the USIBWC leveraging data modeling and other new technologies to improve water management and flood control?

Padinare Unnikrishna: Working with our Mexican Section partners, we are using data from previous projects to develop hydraulic models along the mainstem of the Rio Grande, which runs from El Paso to the Gulf of Mexico. Along the RGCP, we worked with our stakeholders, including irrigators, to identify nine problem locations for sediment and explore nonstructural and structural solutions. We also get input from personnel in our field offices, who are on site each day and see where sediment is accumulating and where problems such as erosion and deposition are occurring. The stakeholders are concerned about sediment because it can form island plugs, decreasing the efficiency of water deliveries; bury irrigation drains, preventing the discharge of landside waters into the Rio Grande during a flood; and erode banks.

In 2024, we completed a hydraulic modeling, sediment accumulation, and flow capacity analysis study for the RGCP. The existing condition hydraulic model needs more calibration, which we will complete in the future. We compared lidar mapping from 2020 with lidar mapping from 2011, survey data from previous years, and the 1943 design geometry of the RGCP to study the pattern and volume of sediment accumulation over time. That's valuable information, because it tells us where to focus sediment removal efforts. The results show that the majority of the sediment is between Percha Dam and the head of Selden Canyon and in the Picacho Bridge–to–Mesilla Diversion Dam reach. We know which arroyos are the major contributors of sediment, such as Rincon Arroyo and Placitas Arroyo, and we're working with our stakeholders to address that problem. Based on the results of the studies we have conducted, we've designed sediment interception basins, including the Thurman Arroyo I and Thurman Arroyo II basins, located upstream of the confluence of Placitas Arroyo and the Rio Grande. The construction of those basins was completed in May 2019, and my understanding is that our stakeholders are happy with the way they are functioning.

Irrigation Leader: How do you approach collaboration with stakeholders and with other federal, state, local agencies?

Padinare Unnikrishna: Collaboration is important. Our funding is limited and varies depending on how much Congress gives us each year. Working together with other agencies, we can avoid duplicating projects and make our limited funding and resources go further. Our stakeholders also bring knowledge about problems that we can use. For example, we participate in RGCP working groups on drought resilience, sediment and storm water capture, and ecosystem restoration that are headed by the Bureau of Reclamation and include several stakeholders. We also work closely with the Doña Ana County Flood Commission, El Paso Water, Elephant Butte Irrigation District, FEMA, Reclamation, and other stakeholders. We are working on the sediment projects through our sediment management program.

We are currently reaching out to other agencies to identify nearby locations to deposit the sediment that we remove to maintain the river channel and floodplain along the RGCP and Rectification Projects. We get inputs on potential sediment disposal sites from our field offices, and we discuss the possibilities with municipalities and agencies, such as the Bureau of Land Management. Once

PHOTOS COURTESY OF THE USIBWC.

a disposal area is identified, we estimate the volume of sediment that can be placed there using drones and surveys.

Irrigation Leader: How are the changes in the Rio Grande's hydrology caused by climate change and drought affecting your work?

Padinare Unnikrishna: We're seeing lots of extreme climate events these days. There's less water in the Rio Grande, which means that there's less water available for irrigation. When it rains, it rains a lot. After an extended drought that affected cities and agriculture in South Texas and reduced water levels in Amistad and Falcon Reservoirs to record lows, we had large-scale flooding in March 2025 that inundated large areas of the Rio Grande Valley. There were similar large flooding events in June 2018 and June 2019.

We need to work to address both flooding and drought. The way to address the flooding problem is to make sure that levees are rehabilitated and are built to the required height. We also have to monitor sediment and vegetation growth along the RGCP and in other areas, because as the sediment builds up and forms islands, it obstructs flow and causes increases in water elevation. If that occurs, a system that was supposed to convey a 100-year flood will no longer be able to do so. The main channel has to be maintained to guarantee the efficient conveyance of irrigation water, and no-mow areas have to be maintained as part of our ecosystem restoration efforts along the RGCP. It's a complicated and expensive problem. Drought can be addressed by following sound water conservation practices.

Irrigation Leader: What do you see as the biggest opportunities for future collaboration with Mexico on water infrastructure?

Padinare Unnikrishna: Along the international reach of the Rio Grande, downstream of American Dam all the way to the Gulf of Mexico, we are collaborating with Mexico to develop hydrological and hydraulic models. For example, we have models for Laredo/Nuevo Laredo and the twin cities of Del Rio/Ciudad Acuña and Eagle Pass/Piedras Negras. We've also modeled a levee system that begins at Peñitas and extends downstream all the way to Brownsville. Some of these models were developed more than 15 years ago, so we want to work with the Mexican Section to develop binational models with the new generation of software, then use those models to more accurately map the floodplains and better evaluate proposals for construction there.

Our levee rehabilitation work in the mainstem of the lower Rio Grande is mostly complete. There are some sections remaining to be rehabilitated as well as levee gaps where irrigation canals draw water from the Rio Grande. There is still levee rehabilitation work to be done in the El Paso area, from Riverside to Fabens and from Fabens to Fort Hancock on the U.S. side. We meet with our Mexican counterparts on an annual basis for our flood workshop. Staff from both sections visit Amistad and Falcon Dams, then gather at the Mercedes field office. At each location, the attendees do a practice run of emergency response activities based on various flood scenarios. We're also continuing to work with the Mexican Section on many of the projects I've mentioned.

A view of Amistad Dam across the Rio Grande near Del Rio, Texas.

Irrigation Leader: What is your vision for the future?

Padinare Unnikrishna: The new hydrologic and hydraulic models have to be developed in the international reach in coordination with Mexico. They'll be of great use to both sections of the commission and to proponents who plan to build in the Rio Grande floodplain. Our water accounting division maintains a system of gauges and data, and the data can be used to periodically calibrate these models. The models are expensive to develop, and once you develop them, they need to be maintained. That means that when a flood comes, for example, we need to see that the water surface elevation reported matches what we're seeing in the field. We also have to periodically collect lidar data, drone data, and survey measurements in different reaches, especially in areas where we have sediment problems. That can give us an idea about whether we are winning the battle or are still in the same situation. We plan to complete the rehabilitation of Amistad Dam and reduce the risk of failure. We will work to complete the rehabilitation and expansion of the SBIWTP to control the sewage problem and our remaining levee rehabilitation projects. IL

Padinare Unnikrishna is the chief of the Engineering Services Division in the U.S. Section of the International Boundary and Water Commission. He can be contacted at padinare.unnikrishna@ibwc.gov.

Jordon Navarrot on Using AquaLastic to Repair and Maintain Concrete-Lined Canals in California's Reclamation District 108

A concrete-lined canal sealed with AquaLastic.

Through unprecedented drought, continuous regulatory changes, and shifting agriculture demands, Northern California's Reclamation District 108 (RD108) has provided innovative service to its water users. In this interview, Deputy Manager Jordon Navarrot tells Irrigation Leader *about how the district has faced these challenges and updates us on a highly successful recent project in which it used AquaLastic to repair concrete-lined canals, saving impressive amounts of water with no disruption in irrigation.*

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

Jordon Navarrot: I grew up around farming in Yuba City. In 2014, I started my career with RD108 while I was working toward a bachelor's degree in accounting at California State University, Chico. I worked part time on RD108's maintenance crew for a couple of years. After I graduated, I moved into an RD108 house and progressed through the ranks at the district, serving in positions including watermaster and operations superintendent. A year ago, I was promoted to deputy manager.

Irrigation Leader: Please introduce RD108.

Jordon Navarrot: RD108 irrigates about 45,000 acres. The predominant crop is rice. There are about 90 landowning entities within our footprint; they are a tight-knit group. RD108 provides irrigation service through a system of about 400 miles of canals and drains, 80 miles of which are lined with concrete. The district is the second largest of the Sacramento River Settlement contractors, which is a group of diverters with water rights that predate the construction of Shasta Dam.

Irrigation Leader: What challenges does RD108 face in terms of water delivery and infrastructure maintenance?

Jordon Navarrot: As a result of unprecedented droughts and endangered species protections, we've had to shift our focus toward grappling with new water shortages while a holistic approach to water security and species protection is being developed. Water conservation efforts have helped us maximize available supplies, while in-channel salmon habitat restoration projects and floodplain reactivation efforts form a long-term solution for species recovery in the Sacramento River.

Irrigation Leader: How has RD108 evolved over the years to meet these changing demands?

Jordon Navarrot: RD108 has been innovative over the years. We are often at the forefront of new technologies. We've gone through an extensive effort to automate our canal system, reducing labor and improving service. We do quite a bit of rice tailwater recirculation, and we're also seeing crop patterns shift, reaching record rice acreage over the past couple of years. We're now facing a demand for more water when our supplies are already lean, so we're having to figure out how to do more with less.

Irrigation Leader: How has the district's approach to water efficiency and system modernization evolved in recent years?

Jordon Navarrot: We had a major system overhaul in 2008. We took several unscreened points of diversion off the Sacramento River and consolidated them into one central pump station with a positive fish screen barrier. On the land side of that point of diversion, we convey irrigation water through 80 miles of entirely concrete-lined canals. In 2023, we automated the majority of the canal headgates on our earthen-lined channels. We retrofitted the existing headgates with electronic drives, batteries, and solar panels. We gather field turnout–level measurements and provide them to our growers via a personalized dashboard. We

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measure every drop of water coming into and out of the district and recycled within it, and we analyze the data, looking for ways to improve efficiency.

Irrigation Leader: What issues have you had with cracking in concrete-lined canals?

Jordon Navarrot: It's pretty typical to see cracking in the concrete lining of canals. However, in RD108's consolidated system, a lot of the concrete-lined canals are raised compared to the adjacent lands, so when we have leaks, the water we lose can lead to inadvertent flooding. The leaks often cause washouts of the adjacent farm roads. Our biggest concern was the risk of catastrophic bank failure, which would render the entire canal inoperable.

Irrigation Leader: How did you decide to use AquaLastic to address the problem?

Jordon Navarrot: We had thrown the kitchen sink at this problem in the past. We tried manually caulking the cracks and spreading mortar over them. We tried digging within the roads and recompacting the dirt to try to hold the water in. We even attempted to place tarps over the cracks. In all cases, we were neither able to completely block the leaks nor find a solution that would last an entire irrigation season. We decided to give AquaLastic a try after some conversations with the company at the Mid-Pacific Water Users Conference. We started with a 2,000-foot-long section of canal that had plagued the district for nearly a decade. We drained it out in the winter according to our routine maintenance schedule and cleaned it up well. Then, Pacific Coatings, the certified installer of AquaLastic, came in, sandblasted the cracks, and applied the AquaLastic product. When we filled the canal back up, there was not a single drop of water leaking out of the canal. It was a total game-changer for us.

Irrigation Leader: How did the district fund this lining project? How much is lined now?

Jordon Navarrot: We entirely self-funded the AquaLastic applications. The threat of having to shut the canal down because of bank failure, which would interrupt irrigation and potentially cause the loss of some crops, outweighed concerns over cost. After we completed the initial project in the worst spot, we started to look at other canals that presented similar conditions. We selected another section, maybe closer to 2,500 feet in length. Another success! We were so happy with the product that we also took a look at a raised metal flume that spans a 75-foot-wide drain. The metal was starting to develop pitting, and when we tried to patch it, water would seep underneath the new layers of sheet metal and continue to corrode the metal underneath. The owner of AquaLastic showed us some examples of

AquaLastic is applied to an RD108 canal.

applications they had done over metal surfaces, so we gave it a try. There is no longer any water leaking from the metal flume, and the remaining life of the flume has likely gone from 1–2 years to more than 10 years.

Irrigation Leader: Do you see AquaLastic playing a broader role in your long-term infrastructure preservation strategy?

Jordon Navarrot: Absolutely. The board of directors is very happy with it. Our staff is very happy with it. These problems were causing us to lose sleep at night. We are ecstatic about finding a solution that can repair leaks across a wide range of applications. We're definitely looking for more opportunities to put it to use.

Irrigation Leader: Has AquaLastic affected your canal maintenance program?

Jordon Navarrot: Historically, in order to clean a canal and reduce the buildup of silt at the bottom of the channel, we excavate the canal and brush it with a tractor-mounted rotary metal bristled brush. We've continued to do those same practices over the AquaLastic, and it's not showing any signs of wear. It's holding up really well.

Irrigation Leader: What other results have you seen?

Jordon Navarrot: We estimate that the three applications save around 1,800 acre-feet per year. Further, not only does the product appear to have sealed the cracks, preventing water from escaping, but we're not seeing new cracks develop. We believe that AquaLastic, to a certain extent, is actually holding the concrete together in one piece, preventing it from cracking further. IL

Jordon Navarrot is the deputy manager of Reclamation District 108. He can be reached at jnavarrot@rd108.org.

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Todd Feenstra of Tritium and Midwest Water Stewards: Helping Farmers Use Groundwater Responsibly

Farmers in Michigan and Indiana contribute nearly $47 billion a year to the economy and are among the nation's leading producers of asparagus, cherries, corn, soybeans, and squash. To preserve a positive future and perhaps expand their role in growing the world's food, the 100 farms and commodity groups that make up Midwest Water Stewards closely monitor their most precious commodity: water. To do so, members have funded the installation of about 250 monitoring wells and 450 stream gauges across Michigan and northern Indiana. In this interview, Todd Feenstra, the group's director and the president of the hydrogeologic consulting firm Tritium, explains why it's critical for agricultural irrigators, especially those with high-capacity wells, to monitor their effects on surface water and groundwater. To most effectively steward the water they depend on, he argues, that monitoring should be based not just on modeling but on real-world data collected in the field.

Midwest Water Stewards intern Gloria Haines downloads monitoring well data.

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

Todd Feenstra: I started working as a hydrogeologist about 26 years ago in Grand Rapids, Michigan. I worked for three consulting firms that focused on the development of sustainable high-capacity wells, primarily for industrial and municipal use. I worked with some good drillers and learned how to install water wells and do sampling. In 2006, my wife and I decided to start our own hydrogeologic consulting firm, Tritium Incorporated, with an emphasis on getting the science right. It was just the two of us for several years, but now we are up to four full-time staff plus interns that we bring in each summer to help with our fieldwork.

Irrigation Leader: Please tell us more about Tritium and the role it played in the establishment of Midwest Water Stewards.

Todd Feenstra: Tritium can meet almost any need related to hydrogeologic investigations, well installations, and impact studies. We look at the effects of high-capacity wells on streams and aquifers; we also examine other effects, such as groundwater recharge. We serve a wide range of industrial, agricultural, and municipal clients in Michigan and the northern half of Indiana, including a couple of river basin commissions.

Tritium did a lot of work for a group of agricultural irrigators with high-capacity wells, and in January 2020, we brought them together under the name Midwest Water Stewards. That group is now a coalition of nearly 100 farms plus several commodity groups. I am the director of Midwest Water Stewards. Tritium does the consulting and hydrogeologic work for the group. The group's goal is to measure, monitor, and model irrigation's effects on the area's groundwater and surface water. The agricultural industry is saying, "We know that water is seasonal and weather dependent, but what are our effects on it?" Agricultural producers want to make sure that they are using water responsibly and can pass on that resource to those who come after them.

Irrigation Leader: What was the gap in the market that Tritium's services aim to fill?

Todd Feenstra: There was a huge data gap. Everybody wants to model, and we tend to draw references from literature values or prepublished reports, but little actual data collection is going on. There is a huge need for data on streams and lakes but particularly on groundwater systems.

Tritium looks for seasonal and year-over-year changes. We monitor what is going on in the environment over wet

PHOTOS COURTESY OF MIDWEST WATER STEWARDS.

seasons and dry seasons. We run aquifer tests, which involve measuring how fast water moves through an aquifer and how much water is stored there. There is a huge lack of those data. It is interesting that 85 percent of the high-capacity wells in Michigan are agricultural, yet regulators do not have active monitoring wells in those agricultural fields. We put monitoring wells in near the irrigation wells, right there in the fields where the water is being used, so we get lots of valuable data, not just on water levels but on how fast the water is flowing through and how much water is stored in those aquifer systems. We combine those data with stream data. Virtually every model has an estimate of streambed connectivity, but we also do physical measurements of connectivity in streams to ground-truth the models.

Irrigation Leader: What does Tritium monitor, and how does your technology work?

Todd Feenstra: Tritium monitors both surface water and groundwater. We have about 250 monitoring wells that are spread across Indianapolis and Michigan, including the Upper Peninsula. The technology we use to do that has advanced over the years. There are pressure transducers now that stand alone, and we can hang them in the well off the end of a cable. They record water level and temperature every 15 minutes. Our wells have given us 8–10 years of continuous data. Those long-term records are an incredible resource to help us create reasonable and representative models to predict the potential effects of pumping on aquifers and streams and manage the water resources wisely.

Similarly, with our stream gauges, we install standpipes in streams and equip those with transducers to measure and monitor water levels and temperatures. The transducers measure water level and temperature. We use vertical tube seepage meters to test streambed connectivity in the field. We also use the latest equipment for stream discharge measurements: the FlowTracker 2, an acoustic instrument that can measure the actual flow in streams. We also install lake gauges to measure the hydraulic connection between the lakes and the groundwater system.

We try to stay on top of the most current and most accurate technology. The transducers are accurate down to about one-eighth of an inch, which is highly accurate, especially when you are looking at effects over a square mile. Back at the office, we process those data and use the latest software to do the modeling. Our telemetry systems upload data live to the internet so that people can monitor stream water levels on a real-time basis.

Irrigation Leader: How is your technology installed, and can it be retrofitted to preexisting irrigation systems?

Todd Feenstra: It can't be retrofitted, and there is a reason for that. What we do is unique. We work with growers who install dedicated monitoring wells. We install those in particular because we are not just interested in water levels. If we put a dedicated monitoring well near an irrigation well, we can run aquifer performance tests, which give us a tremendous amount of information. In several cases, we have had an irrigation well near a residential well—say, 2,000 feet away. We will put a monitoring well between the irrigation well and the residential well. If we are measuring drawdown in the monitoring well, we can then easily extrapolate the drawdown at the residential well. We are measuring the drawdown, the interference effects, and how fast the aquifer is recovering. We can tell them the effects the irrigation well is having on the residential well. That is incredible information for a grower.

Irrigation Leader: What are some examples of how Tritium's technology has helped farmers save water and produce higher and healthier yields?

Todd Feenstra: It is critical to know the effects of one's irrigation. There are a tremendous number of irrigation wells nationwide—nearly 6,000 registered in Michigan alone. Our growers are regularly asked how their wells affect other wells and streams. When they pump water, how long does it take for the system to recover so they can pump it again? It is crucial for them to learn how closely they can space their irrigation cycles and how water is transferred from the pivot into the soil.

Maria Young Swearingen, a project hydrogeologist at Midwest Water Stewards, conducts a stream discharge and streambed conductivity test.

Tritium also does flow checks—on-site active measurements conducted while the pivot is running. Those give farmers important information. For example, one grower thought he was running his pivot at 450 gallons a minute, but we found out that it was running at 550 gallons a minute. He went out to the field, and sure enough, the O-ring had blown out of the end gun, and it was shooting water like crazy. We were able to troubleshoot his system just based on the data we collected.

Tritium is participating in a couple of projects with partners that correlate soil moisture with irrigation to improve the efficiency of water use and maximize crops. We want to know if we are pumping so much water that it is flowing over the ground and not being absorbed by the soils or if the soil is getting so dry that the crop cannot retain moisture.

Irrigation Leader: Would you tell us about some of the recent data collection and analysis for management? What findings have you discovered for your customers?

Todd Feenstra: People often view groundwater as remaining absolutely flat, like a quiet lake, but it isn't like that. It responds to rainfall. In this area, we often see a three-layer geologic system, with an upper aquifer, a middle confining unit, and a lower aquifer. Over the course of a year, the upper aquifer levels change 3–5 feet just based on rainfall. There is a dynamic equilibrium in which water levels fluctuate naturally within narrow limits, but the level is stable year over year and is not undergoing ongoing depletion caused by crop irrigation.

The aquifer in this area is distinctive in how fast it recharges. If we pump for 2 or 3 days, once we stop, the aquifer fully recovers in the same amount of time. So, if we pump for 2 days, 2 days after the pump shuts off, the aquifer has fully recovered. We have also found that both the streams and the groundwater here are quite stable year to year, with small, predictable seasonal trends over the course of each year.

Lastly, we've found huge variability in the streambeds, just as we find in the aquifer systems. Not to measure that variability in the field would be a huge lapse. We have measured streambed conductivities across the region and have found massive variability, which, as you can imagine, can significantly limit the effect that wells would have on the streams.

Those are three of our major findings: the natural variation, the quick recharge, and the stable groundwater and surface water levels. We found that these high-capacity wells had extremely limited effects on the natural systems in this region, which is not the case in other heavily irrigated areas, such as Arizona, Colorado, Idaho, and Texas. That is good news. It means that this is a great place for farmers to grow food for the world.

Irrigation Leader: How does Midwest Water Stewards educate farmers about the need for water monitoring?

Todd Feenstra: Education is a big part of what Midwest Water Stewards does. We subscribe to a pyramid structure: the foundation is data collection, the middle section is the modeling based on the data, and the top is education. I am not a big social media guy, but we have hired someone to do that for us. He maintains a presence for us on Facebook and LinkedIn, which is one way that we educate. I do a lot of presentations to large groups, such as the Irrigation Association, soil conservation districts, county farm bureaus, and commodity meetings. We try to host our members on site once a year. We also host field days for legislators, regulators, growers, and local high school and college students. The student field days are very popular. We let the students run a pivot and a well and use our equipment.

Irrigation Leader: Who are some of the partners Midwest Water Stewards works with?

Todd Feenstra: Several agricultural commodity groups connect Midwest Water Stewards with growers and help fund some of our work. When state regulatory issues that affect them come up, such as water use rights and restrictions, we need good outreach to growers. We also need more grower buy-in for this measuring and monitoring concept. If you are using the water resource, you need to know what effects you are having. The commodity groups are incredibly helpful in spreading the information we're collecting. They also help us connect with and serve on state committees so that we can provide growers with a voice in policy, planning, and legislation.

Irrigation Leader: What is your vision for the future?

Todd Feenstra: Many parts of the world are facing water scarcity. Aquifers are being depleted, and rivers and lakes are drying up. We need to protect and steward our critical water resources. To do that effectively, we need to understand our hydrogeology based on real-world data rather than just on modeling. There's a huge lack of data because data are expensive to collect. And as technology has advanced, it seems like more hydrogeologists practice from desks rather than from the field. We need the pendulum to shift back to the middle. IL

Todd Feenstra is the president of Tritium Inc. and the director of Midwest Water Stewards. For more on Tritium, visit tritiuminc.net. For more on Midwest Water Stewards, visit midwestwaterstewards.com.

PHOTO COURTESY OF MIDWEST WATER STEWARDS.

The California Agricultural Irrigation Association: Advocating and Sharing Information in a Quickly Changing Landscape

The California Agricultural Irrigation Association (CAIA) promotes conservation and industry standards, advocates before the state legislature, and offers educational opportunities to its 82 manufacturer and dealer members. One benefit of membership is regular updates on regulatory and funding changes. In this interview, Curtis Lutje, the president of the CAIA's board, talks about the organization's activities and how low commodity prices and water restrictions have reduced acreage in California, increasing competition among irrigation manufacturers and dealers.

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

Curtis Lutje: I serve as president of the board of the CAIA. In my day-to-day job, I am the vice president of sales for Laurel Ag & Water. I have spent my entire career in agricultural irrigation, and I got involved in the CAIA several years ago with the goal of helping improve the industry. That's what the CAIA tries to do, and that's why I decided to become a part of it.

Irrigation Leader: Please introduce the CAIA.

Curtis Lutje: The CAIA was originally founded as the California Agricultural Irrigation Dealers Association. Initially, it only included dealership-level organizations as members. Since then, it has become more inclusive and extends membership to all ag irrigation industry companies and organizations in California. Today, we have 82 members: 16 dealers, 36 manufacturers, and 30 associate members. We are an industry-focused group that promotes water and soil conservation, supports and promotes industry standards, advocates in the legislature, and encourages ethical business practices across the industry. We host spring and fall events and provide educational seminars, legislative updates, and general industry insights. We're members of the Western Agriculture and Conservation Coalition, which includes a mix of stakeholders in western water, including agricultural irrigation groups, environmentalist organizations, and fish and recreational interests and advocates for policies supporting western water and natural resources. Through member sponsorship, we offer scholarships to California college students studying ag water–related fields.

Irrigation Leader: Would you tell us more about your members and where they are located?

Curtis Lutje: All our members are in California or have at least part of their business here. They include 16 dealers—the guys who have boots on the ground, designing and building on-farm irrigation systems. We also have 36 manufacturers that make things such as large drip tubing, PVC pipe, and pivots. We also have 30 associate members, which include academics, students, consultants, and water districts. Dealers and manufacturers are full voting members. Associates get the member price at our events but do not have voting rights.

Irrigation Leader: What forms of irrigation are typically practiced in your region?

Curtis Lutje: California is a big state, and irrigation practices run the gamut from flood irrigation to the most high-tech, controlled-environment systems. I would say that most of our members are focused on pressurized systems, including drip, micro, sprinklers, pivots, and linear systems.

Irrigation Leader: What are the top issues that the CAIA is currently focused on?

Curtis Lutje: The ag industry is facing some challenges right now. Across the state, we've seen the market contract for a couple of reasons. Low commodity prices at the grower level have put a damper on new development. We've also seen water restrictions, whether because of pressure on the Colorado River system, the Sustainable Groundwater Management Act, or the curtailment of allotments from the state and federal systems. Water restrictions have cut down on the acreage being grown. This reduction in demand results in overcapacity in the ag irrigation industry. Manufacturers end up with too much capacity to produce things such as drip tubing, and dealers have too much design-and-build capacity for the demand that's out there. That creates a competitive environment that makes it tough for the CAIA to do some of the things it is focused on, such as promoting industry standards. When the demand for business declines, the competitive situation heightens, and maintaining standards becomes more and more difficult. Folks are incentivized to cut corners. One of the things the CAIA wants to do is promote the industry and make sure that it stays at the forefront of the irrigation space in general. California has an advanced irrigation industry in terms of the systems and level of efficiencies we can achieve. We as an industry have to come together and make sure that we continue to promote efficiency and good, ethical business practices.

PHOTOS COURTESY OF THE CAIA.

Participants at CAIA's 2024 Fall Meeting.

Irrigation Leader: Would you tell us about your various governmental advocacy efforts?

Curtis Lutje: Historically, the CAIA has represented the interests of agricultural irrigation in the state capital, Sacramento. We have registered lobbyists, and we closely monitor legislation and the actions taken by regulatory agencies that may affect our members. Our team also educates legislators and regulators to influence policy decisions. In 2002, the CAIA played a big role in shaping the U.S. Department of Agriculture's Environmental Quality Incentives Program (EQIP) in the Farm Bill. That influence has continued to be represented in subsequent bills. Our representatives currently serve on California's State Technical Advisory Committee, which helps organize the delivery of EQIP and other Farm Bill–related programs. The CAIA is recognized by the Irrigation Association, legislators, the U.S. Department of Agriculture, and the California Department of Food and Agriculture as a professional organization serving the interests of irrigation in California agriculture. The Western Agriculture and Conservation Coalition, of which we form part, advocates for smart policies on water rights, stewardship, transfers, infrastructure, and storage.

Irrigation Leader: In what ways do you promote water conservation among your members and in your region?

Curtis Lutje: The first pillar of our mission is to "promote water and soil conservation to increase yields and improve crop quality through efficient design and economic use of irrigation systems." Nearly all our efforts tie back to this principle in some form. Our political advocacy supports funding for on-farm irrigation improvements, helping bring advanced technologies to growers for more efficient water use. Through technical sessions and educational seminars, we equip designers and installers with the knowledge they need to implement these technologies effectively. Additionally, our scholarship programs are designed to attract top talent into the industry, further strengthening our collective capacity to drive meaningful conservation outcomes.

Irrigation Leader: What opportunities do you offer for students?

Curtis Lutje: Promoting education has always been a pillar of the CAIA. Every year, we allow our membership to award scholarships. Typically, we give out five scholarships each year. We also provide a place on our website where students who are looking for agricultural jobs can post their resumes. Any of our members can post job openings, including internships, on our website. Students are welcome to attend our events as well. Students can find a range of opportunities on our website: calagirrigation.com/student-opportunities.

Irrigation Leader: How can someone become a member of the CAIA, and what are the benefits of membership?

Curtis Lutje: The easiest way to join is to go to the website, calagirrigation.com. There, you'll find the details of the three types of memberships available—dealerships, manufacturers, and associate members. The biggest benefit of membership is that we help people keep up with industry developments across the entire state, including changing regulations and funding programs. We bring all of that together, keep our members up to speed, and advocate for people to continue conducting business and designing and installing systems in the right way.

Irrigation Leader: What is your vision for the future?

Curtis Lutje: Given the current industry dynamics and the challenging economic environment for California growers, I believe the agricultural irrigation sector must evolve into a more sophisticated and resilient industry. California has not been particularly friendly to agricultural water users, and that's unlikely to change in the near future. My vision is an industry that is technically advanced; takes a long-term, strategic view; and is fully prepared to navigate the increasing regulatory scrutiny we're bound to face. I believe the CAIA will play a key role in helping the industry rise to the challenge. IL

Curtis Lutje is the president of the board of the California Agricultural Irrigation Association. He can be contacted at clutje@laurel-ag.com.

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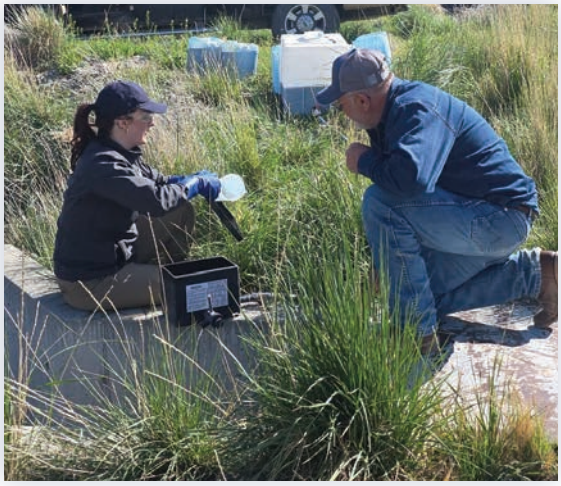

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The Idaho Irrigation Equipment Association: Joining Together to Advocate for and Support the Industry

Participants at IIEA's 2024 summer meeting.

The Idaho Irrigation Equipment Association (IIEA) boasts more than 75 members, including product manufacturers, wholesalers, retailers, water utilities, and financial institutions that support and supply the state's irrigators. While IIEA plays an important role as the industry's voice in legislative affairs, the association also offers a wide range of benefits to its members. Executive Director Cassidey Plum explains how IIEA supports its members by advocating for them and providing resources and opportunities to connect and grow within the irrigation equipment industry.

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

Cassidey Plum: In 2023, I stepped into the world of association management by joining Association Management Group, a team of private consultants with mostly agricultural clients. In 2024, I was approached to be the executive director of IIEA and have been in that position since then.

Irrigation Leader: Please introduce IIEA.

Cassidey Plum: IIEA was established in 1971. We have about 75 members. They include wholesalers, suppliers, dealers, and manufacturers of irrigation equipment, the majority of them here in Idaho. Most are in southern Idaho because there is less irrigated land up north. We do, however, have some members from northern Idaho as well as some from Oregon, Utah, and Washington.

Historically, the association's main focus was an annual trade show. Trade shows were popular, and the IIEA trade show was an opportunity to gather together as an industry and a time for camaraderie. At the show, IIEA presented its Hall of Fame Award, celebrating the achievements of those in the industry. In recent years, trade shows have become less and less popular because of new technologies and the effect of things such as the COVID-19 pandemic. The need for in-person trade shows has decreased. In 2023, we held our last in-person trade show for the foreseeable future.

We have tried to find new benefits to offer to the members of our organization. Last year, we hired Roger Batt to serve as our legislative affairs director. We have stepped into the arena of lobbying and politics, advocating for all irrigation, agriculture, and water-related matters here in Idaho.

Irrigation Leader: What are the common crops grown and types of irrigation practiced by your members and the people in your area?

Cassidey Plum: Here in Idaho, potatoes, of course, as well as barley, mint, onions, sugar beets, and wheat. We are one of the five growing regions for seed crops for the entire world. We live in a high mountain desert with a unique ability to access water within our latitude and climate zone, which is ideal for all these crops.

Most irrigation in the state is sprinkler irrigation, though drip irrigation is becoming increasingly popular with the introduction of new technologies. While flood irrigation

PHOTOS COURTESY OF IIEA.

is still in use, many growers are gradually transitioning to sprinkler systems.

Irrigation Leader: What benefits do IIEA members derive from their membership?

Cassidey Plum: We've had to rethink what membership benefits can look like. Now more than ever, it's important to be engaged in legislative policy, since we have fewer and fewer representatives with an agricultural background in the Idaho State Legislature. We must come forward and educate them about the irrigation equipment industry and advocate for programs and policies that would benefit our industry.

Our legislative affairs director has over 25 years of experience at the capitol, so he has relationships with legislators and can advocate successfully for the industry. Through the dues they pay, our members make it possible for the irrigation equipment industry in Idaho to have a decisionmaking seat at the table. Our government relations work also gives members of IIEA access to relevant political information through updates about legislative developments.

Through our online membership portal, members can consult a membership directory and a list of grant and funding resources. There are a lot of different federal, state, and private programs that offer money to growers to improve their irrigation operations. Those include the Natural Resources Conservation Service's Environmental Quality Incentive Program and the Idaho Department of Environmental Quality's Agricultural Best Management Practices Grant Program. We highlight those opportunities to make sure that our member companies know what is out there. They can also direct their customers to that resource.

Last, we hold events throughout the year for the irrigation equipment industry to mix, mingle, and come together. That is an opportunity to network and build a community with those who share similar interests and values. Our members get discounts on those events.

Irrigation Leader: What successes have you seen in your legislative advocacy?

Cassidey Plum: During the past state legislative session, we advocated for water funding. IIEA advocated for a big piece of legislation that allotted $30 million of ongoing funding for water infrastructure projects. Of that, $1 million went to the Water Quality Program for Agriculture, which provides money for conservation efforts, including irrigation efficiency.

Irrigation Leader: Please tell us about IIEA's board of directors.

Cassidey Plum: Our board is made up of six voting members and three nonvoting members, all elected by the members themselves. We meet quarterly, if not more often. Our board of directors is involved in planning all our events. As we transition to new member benefits and

Participants at IIEA's 2023 winter event.

Participants in IIEA's Bernie Fischer Memorial H2Open Golf Tournament in 2024.

different types of events than we have done in the past, the board members are the ones leading the charge and making those big decisions. Our directors are awesome, and they put a great amount of time into their work. We appreciate all the time and effort that they put in.

Irrigation Leader: Please tell us about your scholarship program.

Irrigation Leader: The scholarship program is a big part of IIEA. Since the establishment of the program in 1980, IIEA has given out 916 scholarships totaling over $567,560. Those funds come straight from member contributions, whether through the golf tournament or via direct donations. Previously, the money came solely from the trade show, individual donations, and corporate donations. The scholarship program focuses on IIEA members and their family members. Applicants get more points during the scholarship sifting process if they are family members of an IIEA member. The program benefits those who are interested in agriculture, and more specifically, irrigation. It is focused on creating the next generation of people to work in this industry. This year, we gave out 16 scholarships totaling over $14,000.

Irrigation Leader: Why should readers consider becoming a member of IIEA?

Cassidey Plum: A unified voice for the water and irrigation industry is so important. That is what our association is here for, especially as we step into the political arena. Members now have a voice and a seat at the table. Association membership also provides a framework and a time to come together as an industry. The camaraderie at the events and the opportunity to network with others is awesome and truly irreplaceable.

Readers who are interested in membership should go to our website. Under the *About* tab, there is a membership tab. They can become a member by filling out the application online.

Irrigation Leader: Are there any upcoming events you would like to highlight?

Cassidey Plum: We will hold our Bernie Fischer Memorial H2Open Golf Tournament in August 2026. It's a great opportunity to enjoy a day on the course, fun games, networking, and plenty of interaction with our hole sponsors.

Irrigation Leader: What is your vision for the future?

Cassidey Plum: We are looking ahead to build IIEA up as an organization that is not only for camaraderie, although we love that part, but is a place to come together to talk about innovation, new technology, and policy and to share new and upcoming trends in the irrigation equipment world. We're excited to be at the forefront of progress in this space and look forward to expanding our reach and impact as an organization. Our commitment to advocacy remains strong, and we will continue to represent the industry in the legislative discussions that shape its future. IL

Cassidey Plum is the executive director of the Idaho Irrigation Equipment Association. She can be reached at cassidey@amgidaho.com.

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Upcoming Events

November 2–5 Nebraska Water Center and Central Nebraska Public Power and Irrigation District, Water and Natural Resources Tour, Phoenix, AZ

November 5–7 Ditch and Reservoir Company Alliance, 2025 Conference, Pueblo, CO

November 5–7 National Water Resources Association, Annual Conference and Leadership Forum, Tucson, AZ

November 6–7 Wyoming Association of Irrigation Districts Annual Conference, Casper, WY

November 10–11 American Water Resources Association, Annual Water Resources Conference, Westminster, CO

November 12–13 Kansas Water Office, Governor's Conference on the Future of Water in Kansas, Manhattan, KS

November 13 Columbia Basin Development League, Conference and Annual Meeting, Moses Lake, WA

November 13 Water Strategies, Leaders Training Webinar: Successful ESA Collaboration Leading to Endangered Species Downlistings

November 23–25 Nebraska Water Resources Association, Annual Meeting and Convention, Kearney, NE

December 1–3 Oregon Water Resources Congress, Annual Conference, Hood River, OR

December 2–4 Association of California Water Agencies, Fall Conference and Expo, San Diego, CA

December 3 Arizona Association of Women in Water and Agriculture, Annual Meeting, Phoenix, AZ

December 3–5 Washington State Water Resources Association, Annual Conference, Spokane, WA

December 8–11 Irrigation Association, Irrigation Show and Education Week, New Orleans, LA

December 9–12 North Dakota Water and Upper Missouri Water Association, Joint Convention and Irrigation Workshop, Bismarck, ND

December 16–18 Colorado River Water Users Association, Las Vegas, NV

January 14–15 Four States Irrigation Council, Annual Meeting, Northglenn, CO

January 19–22 Idaho Water Users Association, Annual Convention, Boise, ID

January 20–22 *Irrigation Leader,* Irrigation Leaders Workshop, Phoenix/Chandler, AZ

January 27–28 California Irrigation Institute, Annual Conference, Sacramento, CA

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