DWR

SUMMER/FALL 2017

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Oroville Spillway Construction Underway

During my first month as DWR's 11th Director, several observations have become apparent to me. We have some of the very best and brightest employees in the State. We have a tremendous scope and stewardship responsibility entrusted in us, and we have a significant amount of work ahead – the Oroville spillways recovery, Sustainable Groundwater Management Act, WaterFix, flood management, ecosystem enhancement projects, dam safety, and climate change preparedness, to name just a few.

No doubt these are challenging times for DWR, but they also present significant opportunities. I truly look forward to problem-solving with you, leveraging our resources, and maximizing our unique capabilities.

Before my DWR appointment in August by Governor Brown, I worked for the Sonoma County Water Agency (SCWA) as General Manager. For nearly a decade, I was responsible for SCWA's core functions of maintaining nearly 100 miles of streams and detention basins for flood protection, restoring habitat for three federally listed endangered fish species in the Russian River, delivering drinking water to more than 600,000 residents of Sonoma and Marin counties, and providing wastewater management through eight different independent zones and districts. In cooperation with the U.S. Army Corps of Engineers, I was also responsible for the operation of Lake Mendocino and Coyote Valley Dam and Lake Sonoma and Warm Springs Dam. Prior to joining the SCWA, I worked for The Bay Institute as Executive Director from 1997 to 2007.

As we begin this journey together at DWR, I want to take the opportunity to share three thoughts about my approach and what I hope we can achieve together.

First – We are a team. Whether you are a deputy director, operator, manager, engineer, mechanic, scientist or administrative officer, you are part of the DWR team. A strong team is rooted in healthy, collaborative, and honest supervisor-employee relationships. It is the responsibility of supervisors and managers to inspire and model teamwork and knowledge-sharing and to be proactive about succession and workforce planning.

Second – Communication is a top priority. DWR's work is complex and important: We manage and protect the State's water resources. The success of our work is often a function of how well we communicate both internally and externally. External messaging is the responsibility of each employee. Please keep in mind that we are each ambassadors of the Department's achievements through our day-to-day interactions with our friends, family, and neighbors. I know that DWR is one of the best places in the State to work, and I want others to know that as well. Internal communication is equally important to our success; that means collaboration across divisions, programs, and branches is important and enriches all of our work.

Third and perhaps most importantly – Employee satisfaction is critical to our mission. We achieve job satisfaction by working as a team, communicating clearly, asking for support when needed, and by maintaining a healthy work and life balance. We are public servants and we work hard. But we are better and more productive when we take enough time to recharge our batteries.

It's a privilege working with you. Please continue to keep up the good work, and do not hesitate to let me know what you think. My door will always be open to you.

***Grant Davis**, Director*
California Department of Water Resources

WHAT'S INSIDE

A controlled blast takes place on the lower chute of the Lake Oroville main spillway on June 7.

On the cover

Pumped concrete is poured on lower chute of Lake Oroville's new main spillway on July 12.

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A Century of Service

The century-old Sacramento Weir was opened for the first time in more than a decade on January 10, 2017 to protect the City of Sacramento by diverting high flows on the Sacramento River into the Yolo Bypass and eventually on to the Delta.

The weir on Old River Road along the west levee of the Sacramento River was built in 1916 by the City of Sacramento after a major flood event in 1915. The 1,920-foot-long weir has 48 gates; when opened, each allows up to 2,300 cubic feet per second of water to flow into the Bypass from the Sacramento and American rivers.

This year during the second of two times opening the weir's gates, DWR opened 46 of 48 gates per U.S. Army Corps of Engineers guidelines when the Sacramento River rose to 29.87 feet at the Sacramento I Street Bridge.

The Sacramento Weir, operated by DWR's Sacramento Maintenance Yard, is the only manually operated weir in California. It's been opened 32 times since its construction, most recently on December 31, 2005, after which the weir flowed for about 11 days.

The weir is part of the Sacramento River Flood Control Project created by the U.S. Army Corps of Engineers. The four other weirs in Northern California – the Moulton, Colusa, Tisdale, and Fremont weirs – are called "passive" weirs because they have no gates that require opening. Floodwaters begin to flow through them into the Butte Basin, Sutter Bypass and Yolo Bypass when the Sacramento River rises to the weirs' spillover height.

A major component in Sacramento's flood control system, the Sacramento Weir is the city's primary defense against urban flooding.

The Sacramento Weir under construction since 1916 shows moving forms and concrete bridge piers on May 2, 1917.

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A Time of Change

Visitation Increases at Lake Oroville Visitors Center in Wake of Spillway Incident

By Kristen Perry

Left to right: At the Lake Oroville Visitors Center, visitors are briefed after evacuation on February 12. DWR Tour Guide Jana Frazier stands near live video of the Lake Oroville's spillways construction.

After Oroville Dam's eroding emergency spillway caused the evacuation of downstream residents on February 12, the Lake Oroville Visitors Center became a beehive of activity with people connecting, seeking answers, and looking more closely at what makes up the State Water Project's Oroville-Thermalito Complex. Visitation spiked from 6,500 in January to nearly 25,000 in February.

"To respond to visitors' questions, we gathered images of the spillway incident to put on a fold-out board and created a video of emergency spillway drone footage to show people who were having such a difficult time understanding what was going on," said DWR Guide II Jana Frazier of the Oroville Visitors Center. "DWR upgraded the visitors center's theater to offer live streaming of construction and repairs of the main spillway as part of a public viewing option."

The Public Affairs Office graphics team adapted and installed a spillway timeline in April to help the community better understand the situation.

"I took many, many groups to that display to walk them through the timeline so that they understood what happened during the February incident and what was currently happening," said Frazier. "Most left completely reassured that the dam was not falling apart."

"We have had visitors from all over the state and the United States as well as from around the world," said Frazier. "People came from India, Japan, the United Kingdom, Middle East, and China to see for themselves that the dam is still safe and to get up-to-date information."

The Center, jointly operated and staffed by DWR and the California Department of Parks and Recreation, offers various exhibits and videos on the construction of Oroville Dam, the Feather River Fish Hatchery, the Hyatt Powerplant, and a diorama illustrating aspects of the culture of Maidu Indians. Also featured is a display highlighting the life of pioneer James Beckwourth.

In January, two digital touch-screen survey stations were installed at the center, and with more than 1,700 surveys completed, DWR is gaining a better understanding of the needs of its audience.

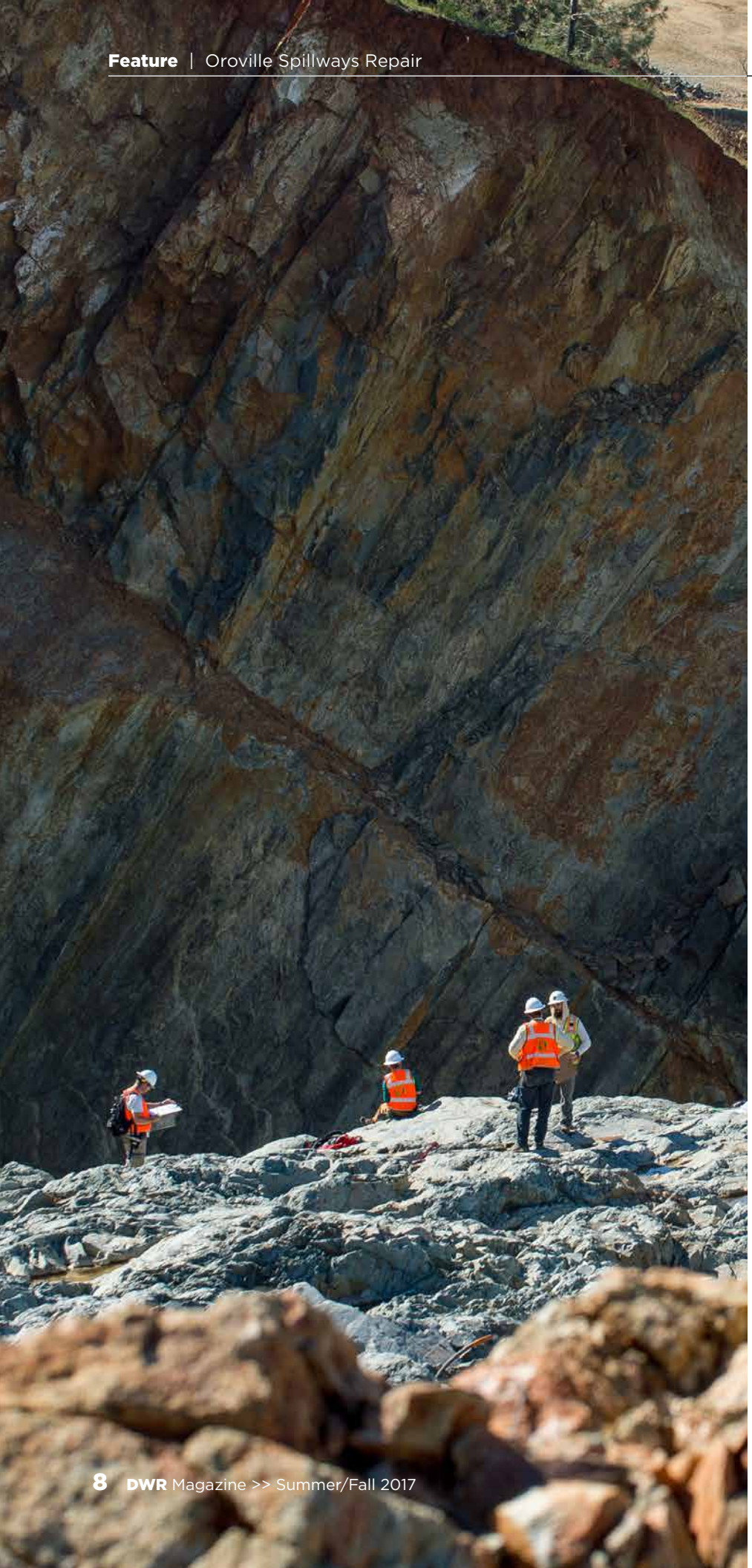
The spillway incident provides an opportunity to form a new connection with the Oroville community.

"When the dam was first being constructed, the whole world watched as that seemingly impossible engineering feat played out," said Frazier. "Once again, the whole world is watching as we move forward in re-engineering, repairing, and rebuilding the spillways. The spillway incident will live on in memory and has become an integral piece of the State Water Project's history as much as the building of the dam has."

Construction Kicks Off

A controlled blast on May 24 breaks up rock and dirt on a hillside east of the Lake Oroville main spillway. There have been 90 blasts on the spillway.

DWR races to complete Lake Oroville spillways construction for rainy season



By Maggie Macias

May of 2017 launched a new chapter in State Water Project (SWP) history. Lake Oroville's flood control (main) spillway and emergency spillway, constructed 50 years ago to release water from the SWP's largest reservoir, are under construction after severe erosion occurred in February.

More than 1,000 DWR employees were mobilized to make emergency repairs to the dam's main and emergency spillways, remove debris washed into the Feather River, and move electrical lines and other infrastructure out of harm's way.

On May 19 – after releasing more than five million cubic feet of water per second down the damaged spillway, about 250 percent more water than any other year in the spillway's 49-year history – DWR closed the main spillway gates for the last time of the season, kicking off the Lake Oroville spillways recovery effort.

DWR awarded a $275 million recovery contract to Kiewit Infrastructure West Co. to reconstruct the main and emergency spillways in two phases over the course of two years. This year, the main spillway will be constructed to withstand an outflow of 100,000 cubic feet per second (cfs) for the 2017/2018 winter. A cut-off wall downhill of the emergency spillway is targeted for completion in December 17 or January 2018 to prevent head-cutting erosion. Next year's work will complete the main spillway's construction to withstand 270,000 cfs of outflow, built according to modern standards and design. Kiewit has up to 500 employees working around-the-clock on the main and emergency spillways.

Left: DWR geologists and contractors map the erosion area between the upper and lower chute of the Lake Oroville main spillway on June 2.

Clockwise from left: Before construction kicks off, a contractor checks an air monitoring station along Burma Road at the Lake Oroville spillway on July 17. DWR Geologist John Curless examines the exposed rock of Lake Oroville's main spillway. DWR Geologist Bradley Von Dessonneck (right) explains erosion area to a contractor's geologist on June 2. Gary Hage and Chris Williams, DWR Utility Craftworkers, prepare a section of Lake Oroville's main spillway for survey marking on March 31.

Top to bottom: A contractor inspects the lower chute of Lake Oroville's main spillway on May 22. Drilling rig drills holes at the 1,450-foot cutoff wall, below the Lake Oroville emergency spillway on August 24. The wall is to prevent erosion at the base of the concrete weir. Division of Engineering Chief Jeanne Kuttel responds to public questions during the Lake Oroville Spillways Recovery Project community meeting in Marysville on July 19.

The Recovery

Engineers, geologists, construction inspectors, operators, and mechanics are just a few of the 200 DWR employees currently working on the Oroville emergency recovery effort.

DWR's Design Team – consisting of employees from the divisions of Engineering, Safety of Dams, and Operations and Maintenance as well as contractors and consultants – incorporated suggestions on the spillway design from the Federal Energy Regulatory Commission and the Independent Board of Consultants (BOC). The BOC approved DWR's design plans of the new main spillway on June 3.

To investigate the cause(s) of the Lake Oroville Spillways incident, an independent forensic team (IFT) was formed. The Association of State Dams Safety Officials and the United States Society of Dams selected six engineers with a range of expertise. The IFT released a preliminary list of potential findings on May 5 and published a summary of their findings to date on September 5, and is expected to release

their final report later this fall. Information is available at **water.ca.gov/oroville-spillway/index.cfm**

Demolition of the main spillway began on May 22 and was completed on August 23. Eight drilling crews conducted 90 controlled blasts to demolish the lower 2,270 feet of the main spillway. After excavating debris and cleaning rocks, crews began placing concrete on the spillway.

Reinforced, structural concrete is being placed on the lower chute and parts of the upper chute along with new drainage, while roller-compacted concrete is filling in the middle section of the spillway and scour holes. The 730-foot section of the upper chute deemed structurally sound, will receive minor repairs this year then removed and replaced in 2018.

Spillway recovery construction can be viewed via three live-feed video cameras operated by the California Department of Parks and Recreation: **www.parks.ca.gov/?page_id=29480**. People can also view a live feed at the Lake Oroville Visitors Center.

Since the discovery of erosion to the main spillway on February 7, DWR has updated the public with numerous press briefings, news releases, and social media postings. In late April and early May, DWR leaders and experts hosted seven public meetings to answer questions about the spillway incident and recovery effort. The meetings were held in Gridley, Oroville, Marysville, Yuba City, Chico, and Sacramento. Three additional community meetings were held in the Oroville region in mid-July.

You can follow updates on the recovery effort by joining us on social media: **facebook.com/CADWR** and **twitter.com/ca_dwr**.

Above: DWR Director Grant Davis (right) meets with DWR employees Renee Mostert and Michael Steinbacher at Lake Oroville's main spillway on August 3. **Right:** Crews place rebar panels for the new side walls and structural concrete on the lower chute of Lake Oroville's main spillway on September 20.

Oroville Spillways Timeline

February 7 Main spillway shut off after discovery of damage.

February 8 DWR tests water releases through damaged main spillway at 20,000 cubic feet per second (cfs) and later increases to 35,000 cfs on February 9 and 65,000 cfs on February 10.

February 11 As Lake Oroville water surface elevation reaches 901 feet at 8 a.m., the emergency spillway begins spilling water for the first time since it was completed in 1968.

February 12 Lake Oroville peaks at 902.59 at 3 a.m. Erosion on the hillside downstream of the emergency spillway triggers Butte County Sheriff to declare mandatory evacuation of nearly 200,000 residents downstream of the lake at 5 p.m. Governor Edmund G. Brown Jr. issues an emergency order to bolster the state's response to Oroville Dam's emergency spillway and support local evacuations.

February 14 Butte County Sheriff reduces mandatory evacuation order to evacuation warning.

February 27 Flows from the main spillway shut off and removal of spillway debris begins.

March 27 Butte County Sheriff lifts evacuation warning.

April 6 Governor Edmund G. Brown Jr. issues Executive Order B-39-17 to further expedite the effort to repair the spillways at Oroville Dam before next winter.

April 17 DWR awards $275 million contract to Kiewit Infrastructure West Co. to repair spillways.

April 22 Demolition begins with controlled blasting and clearing of spillway.

April 27 First of ten community meetings about the Oroville spillway recovery effort held in Gridley.

May 5 Independent Forensic Team releases preliminary findings on potential physical factors contributing to Lake Oroville's main spillway erosion on February 7.

May 17 The first live, around-the-clock video stream of construction area available via Parks and Recreation website at **parks.ca.gov/?page_id=29480**

May 19 Main spillway shut off and construction mobilizes.

June 1 Crews begin construction of new main spillway.

August 23 Main spillway's lower chute demolition completed.

Beyond the Call

DWR Employees Help with Oroville Evacuation

By Bill Collins, *Associate Safety Engineer with San Luis Field Division*

Above: Butte County Sheriff Kory Honea speaks during a press conference following evacuation orders in Oroville on February 12.

What began on February 12, 2017 as a day of cleaning up debris for 29 Utility Craftworkers (UCW) and a contractor at the Thermalito Diversion Dam ended with a long night of assisting with the Oroville evacuation.

The UCW crews were pulling trees and shrubs from the bottom of the river at 4:32 p.m. when I got a call from Incident Command Safety Officer Michael Pereira to evacuate because of concern that the emergency spillway could fail within the hour. I was told to take the crew to the Chico Fairgrounds where the UCW crew and I noticed cars entering the same area.

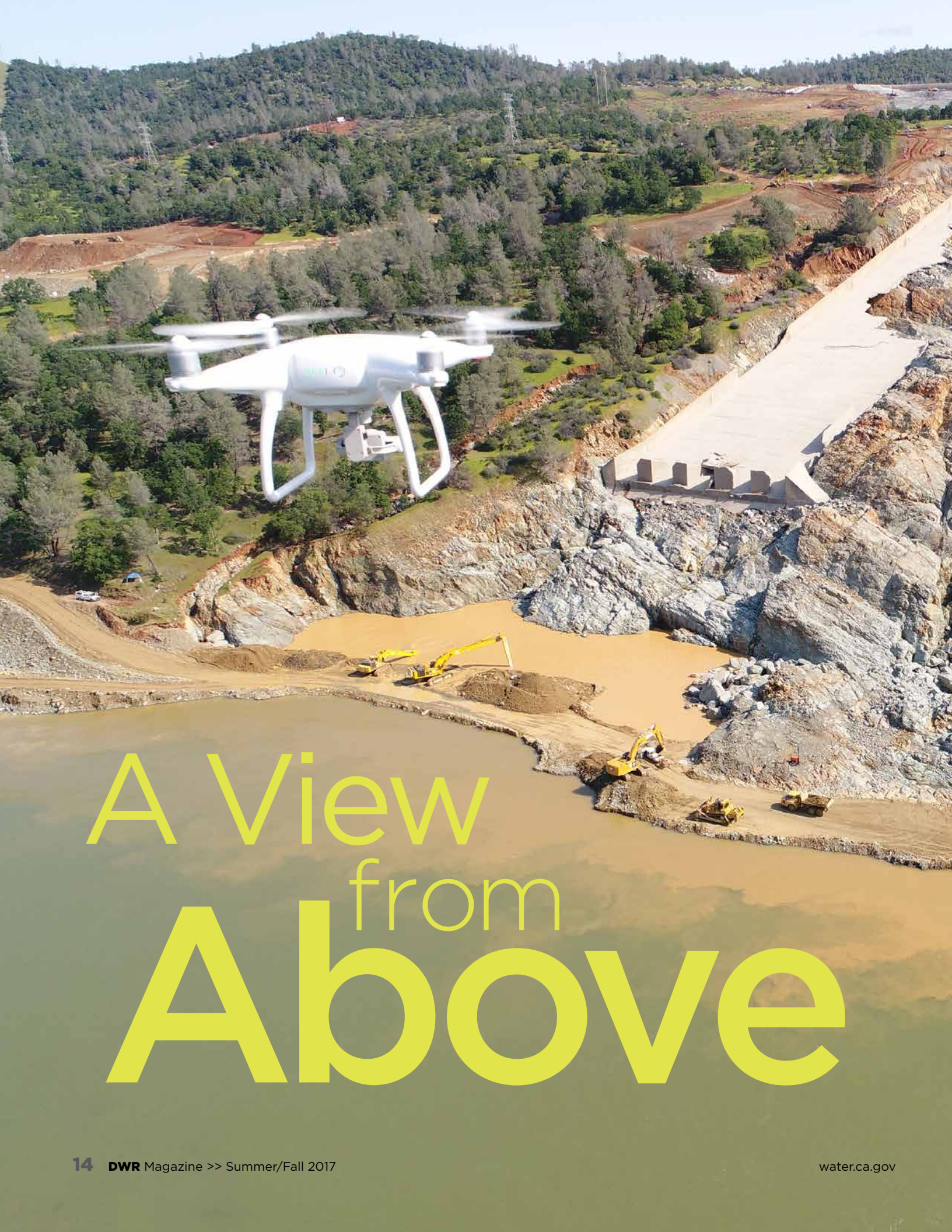
The crew heard on the radio that the fairgrounds had been declared an Oroville evacuation center, explaining why cars were flooding in.

With safety in mind, I explained to the crew that we were going to have a mess if they didn't do traffic control.

After donning vests and securing flashlights, crew members directed motorists to appropriately designated parking areas. The DWR crew parked more than 1,000 vehicles and assisted thousands of people into the fairgrounds shelter.

When the Police Department and the California Highway Patrol arrived, they asked if DWR could continue helping with the evacuation. I asked each DWR employee if they wanted to stay and help. Each one stayed and helped.

DWR's Management thanks all of its employees who stepped up to help with the Lake Oroville Spillways incident.



A View from Above

DWR Employees Use Drones for Images of Oroville Spillways Incident

By Maggie Macias

To capture images of the Lake Oroville Spillways incident, DWR employees flew unmanned aerial vehicles, also known as drones, for the first time above Oroville facilities.

These images, shared with the worldwide media and public, gave DWR employees and others a tool to assess the initial damage to the main spillway on February 7, the erosion on the hillside of the emergency spillway on February 12, and the reconstruction efforts that have been underway since.

DWR's remote pilots – leader Mike Burns of the Bay-Delta Office, Tim Case of the Division of Engineering, and a contractor – flew drones daily, coordinating around helicopter operations for the first two months of the spillway incident. Dan Mardock, Chief of DWR's Geodetic Branch, supervised the team while scheduling staff and providing incident updates. Mardock alerted the pilots when the main spillway gate operators were increasing or decreasing the flows.

"Mike Burns became the 'father' of the drone flights for the Oroville Incident," said Mardock. "On February 7, he flew the first drone above the damaged Oroville flood control spillway for video footage. These first drone missions in Oroville were not easy due to the strong winds."

Burns, a water resources engineer in DWR's Bay-Delta Office, has been building and flying drones as a hobby since 2012. Burns learned how to fly drones by using a flight simulator program and became certified by the Federal Aviation Administration.

When the emergency spillway was used for the first time on February 11, Burns flew the DJI Inspire 1 Pro drone over the site. After his drone flights on February 12, the video of the erosion on the emergency spillway helped provide information that led to the downstream emergency evacuation order.

On the day following the emergency evacuation, Burns flew a drone at day break to document the erosion conditions at the base of the spillway and the foundations of the high voltage towers.

After February 27 when the main spillway's flows reduced to zero to allow for debris removal, drone flights focused more on inspections of the remaining upper spillway and the damage to the lower spillway, including monitoring the massive construction effort by trucks, excavators and barges to remove material at the base of the spillway.

Left: Drone flies towards damaged spillway on April 9 to capture a closer view of it. **Above:** Zack Cunningham (left) spots drone location while Mike Burns (right) flies drone to document the progress of the Lake Oroville spillways recovery efforts on August 21.

"Since we've entered the recovery and rebuilding phase of the project, I've been working closely with the Public Affairs Office (PAO) videographers and photographers to document the daily construction activities," said Burns. PAO prepares and posts videos on the California DWR YouTube website and photos to DWR's digital photo library at **pixel.water.ca.gov**.

"We were flying drones above trucks and next to excavators as work was being performed," said Burns. "The drones also allowed everyone to see the scale of the damage. When engineers and geologists hiked out onto the spillway, the drone images showed how tiny they were compared to the size of the spillway and the magnitude of the destruction."

Images covered debris removal, drilling operations, aerial mapping, construction monitoring, shotcrete application on the flood control spillway, blasting around the spillway and rock placement on the emergency spillway.

"The benefit that our drones and drone operators provided during the Oroville Spillway emergency was invaluable," said Randy Fessler, Supervising Engineer in DWR Executive Division's Security and Emergency Management Program. "They provided us with real-time high-quality intel without having to put our employees in potentially hazardous situations."

DWR is using the images for several purposes, including construction monitoring. To help bridge images together to make exact photo scale in georeference, 400 targets were placed throughout the spillways.

"The orthomosaic were created from 5,000 images," said Mardock, who worked 37 years as a surveyor on projects, such as the Trans-Alaska Pipeline. "It's been a lot of work to keep up with, but I am proud to be able to help others, such as engineers and construction inspectors, to do their work."

Gathering drone images is not an easy task. The pilot and spotter not only work in windy and rainy conditions, but must be prepared for rattlesnakes, poison oak, high voltage power lines, helicopter operations, heavy equipment and clouds of mist from the spillway that can impact drone missions.

"It's fun and interesting work," said Burns. "You're like a bird. It's amazing to be able to monitor activities on one side of the spillway and then hop over to the other side to see what's going on over there."

Drone Policy

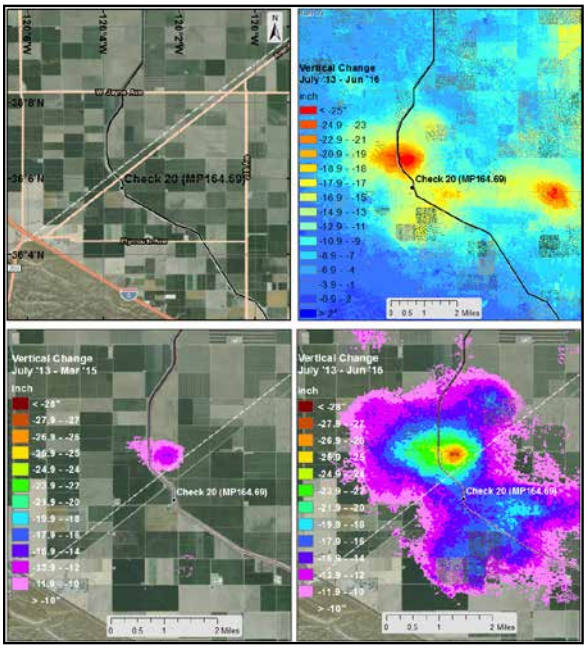
DWR's Drone Working Group (a subcommittee of the Remote Sensing Committee), consisting of Chair Gary Darling, Burns of the Bay-Delta Office, Kate Killeen, and Jim Openshaw of the Office of the Chief Counsel, and Dan Mardock of the Division of Engineering, created DWR's drone policy and operations manual in 2016. After a green light from DWR's governance group, they coordinated with the Management Analysis Office to finalize the documents.

The use of drones at DWR began when Darling and Burns, both of whom have an interest in drones as a hobby, presented how drones could be an important contribution in the workplace and formed the Drone Working Group in 2015.

DWR drones are being used by the Bay-Delta Office, Division of Engineering and Public Affairs Office.

"I think drones being used at DWR are going to change everything," said Darling, who remembers seeing his grandfather featured in Life Magazine for using drones. "We've always seen how they can be used to monitor infrastructure. Employees see drones as a huge safety enhancement.

Left to right: Mike Burns, DWR drone pilot, Shem Hawkins, CALFIRE Battalion Chief and Air Traffic Control for the Oroville Spillway Incident, and Tim Case DWR drone pilot. **Above:** Lake Oroville main spillway image taken by drone on March 27.



Imagery of land subsidence in the Central Valley by Cathleen Jones of NASA Jet Propulsion Laboratory.

Sinking Hotspots

DWR Monitors Land Subsidence in the San Joaquin Valley

By Jeanine Jones

DWR's work with NASA to assess impacts of the recent drought on subsidence in the San Joaquin Valley has shown dramatic results.

Instruments aboard satellites and aircraft show that drought-related subsidence continued and expanded in the dry years of 2015 and 2016.

Increased pumping of groundwater during drought is a major cause of subsidence, particularly in the San Joaquin Valley where sinking ground levels can damage infrastructure, including the California Aqueduct and San Joaquin River system flood management facilities.

Subsidence affects water infrastructure by reducing the conveyance capacity of canals, aqueducts, and flood control channels, and by causing differential settlement and structural damage to canals and associated features (bridge and pipeline crossings, pump stations, and turnouts).

Subsidence also damages well casings and sewer lines, and can result in loss of a portion of an aquifer's water storage capacity. The magnitude of long-term historical subsidence in the San Joaquin Valley is illustrated by maps developed by the Division of Engineering's Geodetics Branch using data from land surveying sources. More recent subsidence stemming from droughts adds to these historical amounts; eight of the 10 years prior to Water Year 2017 were dry, upping the subsidence risk.

The satellite monitoring's subsidence hotspot detection capability was demonstrated by discovery of a new hotspot emerging near Tranquillity in western Fresno County, joining two previously identified regional-scale hotspots at El Nido in Merced County and Corcoran in Kings County. The largest subsidence occurred in the Corcoran area, which sank as much as 22 inches from May 2015 to September 2016. The expectation of a large snowmelt runoff volume in spring 2017 prompted the Cross Creek Flood Control District to raise its Corcoran levee by four feet to compensate for subsidence impacts.

NASA's aircraft data along the California Aqueduct demonstrated the ability to provide high-resolution tracking of growth of a hotspot adjacent to the Aqueduct at Avenal Cutoff Road that sank more than 27 inches from July 2013 to June 2016. DWR estimates that long-term subsidence since Aqueduct construction has resulted in a 20 percent loss in the canal's conveyance capacity in this area.

DWR partnered with the Water Education Foundation in an August subsidence monitoring workshop in Fresno where further information on monitoring was provided.

DWR's contract with NASA's Jet Propulsion Laboratory covers the use of satellite-based interferometric synthetic aperture radar (InSAR) imagery to assess relative ground surface displacement over large areas and high-resolution aircraft-based InSAR flown over selected reaches of the California Aqueduct.

A major advantage of InSAR is its ability to rapidly measure displacement over large geographic areas such as the valley, making it uniquely suited as a screening tool for detecting subsidence hotspots.

Water Conservation – A Way of Life

DWR Partners with State Agencies to Create Long-Term Water Conservation Plan

By Akiela Moses

As California's drought emergency ended for most counties on April 7 due to record levels of rain, a deep snowpack, and water conservation efforts by Californians, DWR and four State agencies released a plan to make water conservation a California way of life.

The plan recommendations require legislation to establish long-term water conservation measures and improved planning for more frequent and severe droughts.

Governor Edmund G. Brown Jr.'s Executive Order B-40-17 lifted the drought emergency in all California counties, except Fresno, Kings, Tulare, and Tuolumne. To help these four counties that have a limited groundwater supply, DWR has been working on several emergency water supply projects, including Quartz/Stent in Tuolumne County, Okieville, Monson, and East Porterville in Tulare County; Hardwick in Kings County; and Orange Center/Daleville and Cantua Creek/El Porvenir in Fresno County. The Order maintains water reporting requirements and prohibitions on wasteful practices, such as hosing off sidewalks and watering lawns during or after rainfall.

"This drought emergency is over, but the next drought could be around the corner," said Governor Brown in an April news release. "Conservation must remain a way of life."

Water conservation has been a top priority of Governor Brown. In May 2016, he issued Executive Order B-37-16, directing DWR, the State Water Resources Control Board, California Public Utilities Commission, California Department of Food and Agriculture, and California Energy Commission to develop a long-term water conservation framework that builds on the successes and lessons learned from California's five-year historic drought and on the implementation of the Governor's Water Action Plan. These agencies employed a robust and intensive stakeholder engagement process over a period of eight months to develop the new plan.

By converting outdoor landscapes to water-efficient landscapes, Californians reduced their water use by more than 25 percent during the drought. Californians should not use hoses for cleaning sidewalks as part of Executive Order B-40-17.

"This framework is about converting Californians' response to the drought into an abiding ethic," said DWR Acting Director Bill Croyle, who retired in June. "Technically, the drought is over, but this framework extends and expands our dry-year habits. Careful, sparing use of water from backyards to businesses and farm fields will help us endure the next, inevitable drought."

The plan addresses four inter-related objectives, including using water more wisely, eliminating water waste, strengthening local drought resilience, and improving agricultural water use efficiency and drought planning.

"Californians stepped up and reduced their water use by more than 25 percent during the drought," said Peter Brostrom, the Program Manager with DWR's Water Use Efficiency Section. "The goal now is to build on those achievements and turn these short-term savings into long-term water use efficiency. The most significant progress, though, is in terms of people's mindset as more and more people see water as a scarce commodity, a resource we need to value and use carefully."

A centerpiece of the April plan is a recommendation that the state's 409 urban water suppliers meet new water use targets that reflect the state's diverse climate, landscape, and demographics. Each supplier would calculate a unique water use target based on water use standards and local conditions.

"The water budget targets proposed in the new Executive Order framework for urban water suppliers are very significant," said Brostrom. "The new targets would implement a fair and equitable way to water use efficiency across the state, recognizing the diversity of California urban landscape and climate."

Other key elements of the plan include more robust water shortage contingency planning and measures to reduce system leaks for urban water suppliers; improved drought planning for smaller water suppliers and rural communities; and strengthened agricultural water management planning that quantifies measures to increase water use efficiency.

With consolidated efforts and new direction, greater conservation has become an attainable goal.

To learn more about the plan, visit: www.water.ca.gov/wateruseefficiency/conservation/

One year since the first East Porterville home (left) in Tulare County was connected to the City of Porterville's water supply project, 321 homes are now receiving water and an additional 446 homes are scheduled to be connected to the project by end of 2017. A contractor (right) installs a water service line.

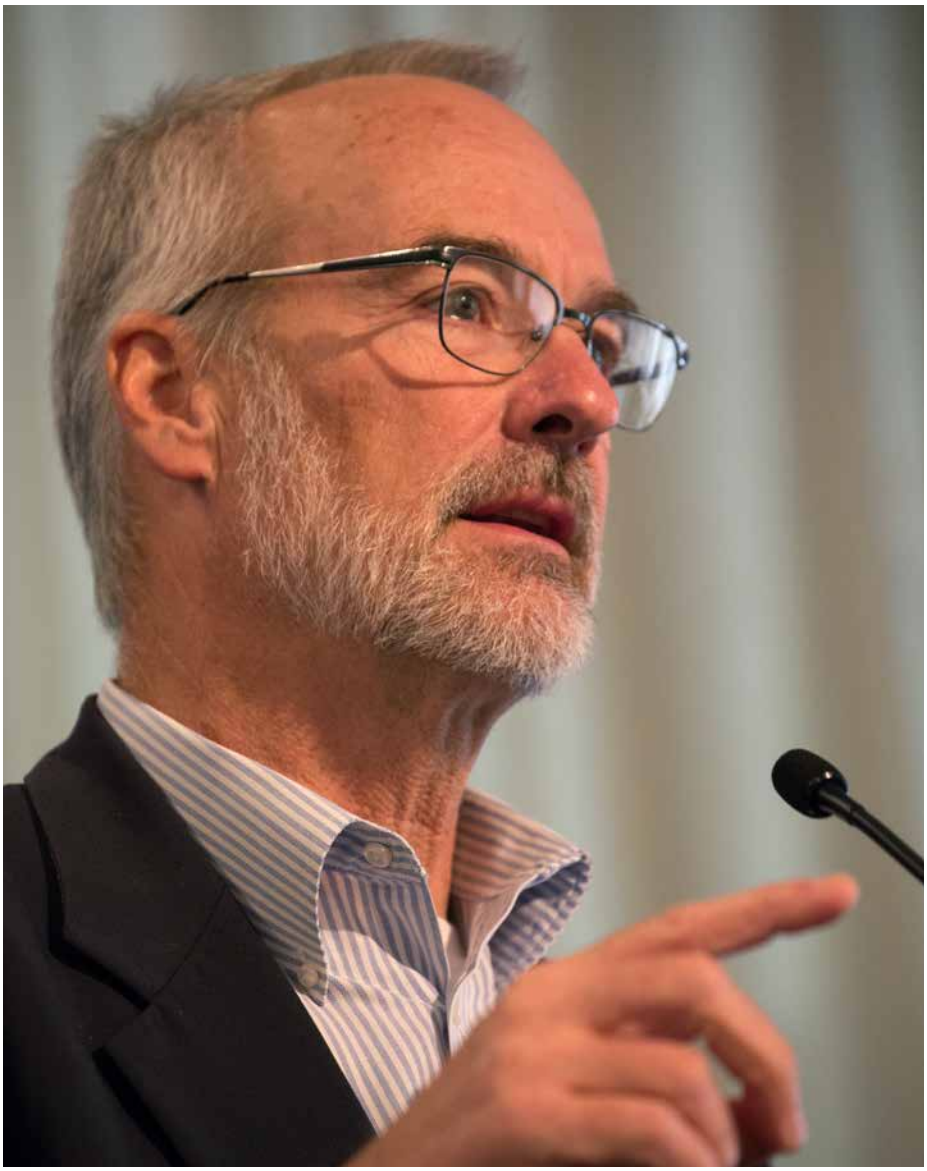
Building Capacity for Regional Sustainability in California

By Carmel Brown and Hong Lin

DWR's Arthur Hinojosa **(top left)** and Water Education Foundation's Beth Stern **(bottom)** welcome more than 200 attendees at the April Water Summit. **Middle:** Celeste Cantu, Tim O'Halloran, Maria Herrera and Thomas Harter, speakers at the Summit, provide diverse perspectives on the future of integrated regional water management.

It has been 15 years since passage of the Regional Water Management Planning Act, which initiated Integrated Regional Water Management (IRWM) in California. A collaborative effort to identify and implement water management solutions on a regional scale, IRWM has helped foster regional self-reliance and reduce conflict among cities, counties, water districts, community groups, and others across the state.

In partnership with the Water Education Foundation, DWR hosted a Water Summit titled "Building Capacity for Regional Sustainability" in April of this year. The Water Summit brought together about 200 people from around the state to discuss challenges and opportunities to achieving sustainable water balance regionally. The event attracted

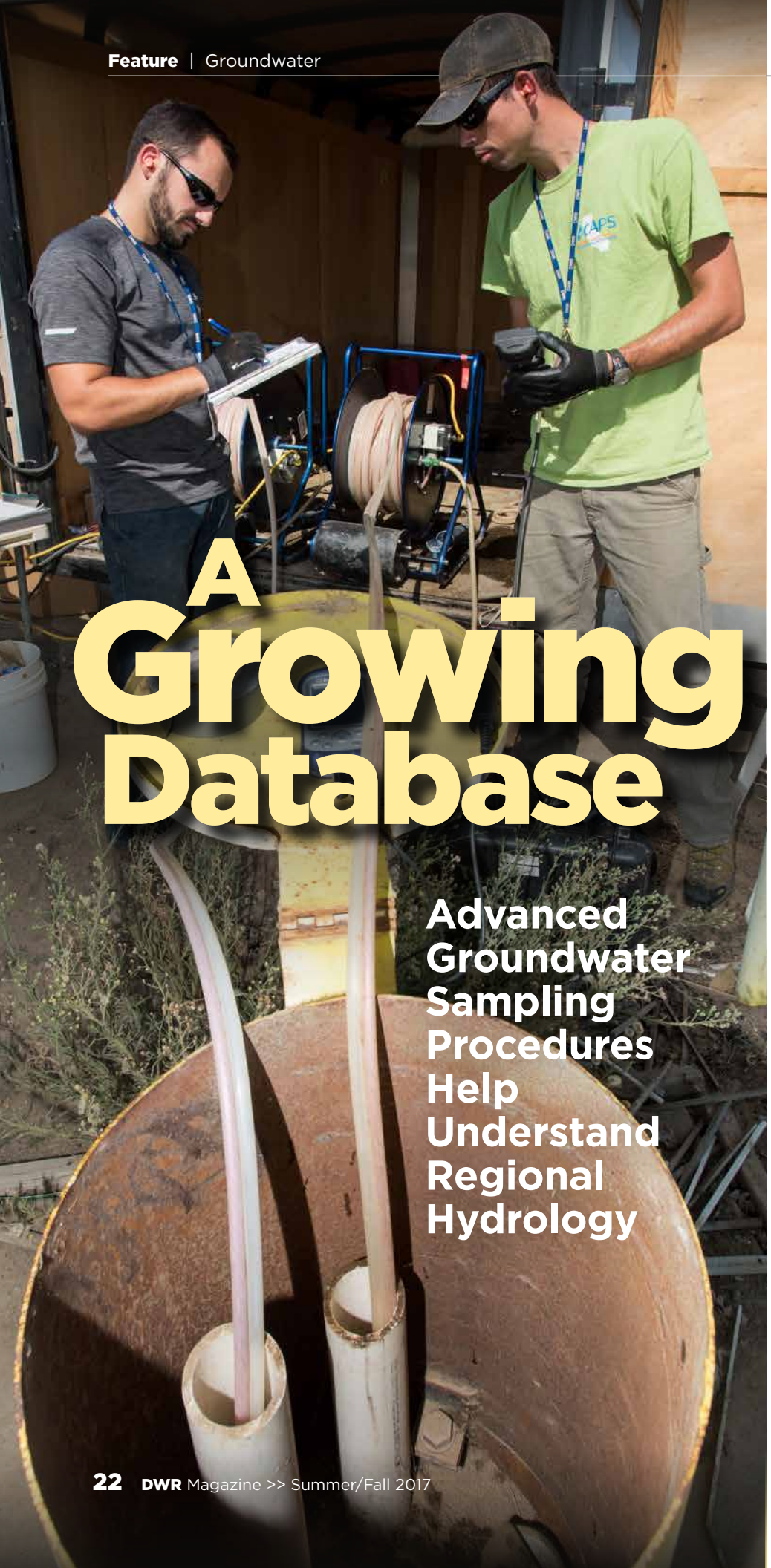


Clockwise from left: David Orth, an IRWM leader, delivers keynote speech. DWR's Emily Alejandrino (left) works with disadvantaged community and Tribal advocates at the Tools Pavilion that included 11 resource tables. DWR's Mike Floyd shows his appreciation for the collaborative work of an IRWM participant.

a diverse audience representing all water sectors, urban, and agriculture land uses, environmental interests, and more. Experienced water leaders participated in two panel discussions, and David Orth, a well-known regional sustainability proponent, delivered an impactful closing keynote presentation that tied common themes together.

Speakers echoed what many regional stakeholders have expressed, that among the many challenges for IRWM, the demands of complying with the new groundwater legislation have stretched limited regional resources, and in some cases have created a distraction from the 15-year old incentive-based IRWM efforts. They are looking to the State, and in particular, DWR to provide leadership and guidance on how to reconcile these two efforts moving forward.

DWR has a critical role to play in helping regional stakeholders realize success. It will take a tremendous amount of data, monitoring, modeling, coordination, and cooperation to get there. But most importantly, success requires one essential ingredient: trust. Building trust and agreeing to a shared vision of what success looks like takes time, particularly when the stakeholders' interests are so diverse. Fortunately, DWR has a lot of experience in this area, having worked with IRWM groups and other regional interests for over a decade to build a solid integrated planning foundation and to provide trusted local assistance.



A Growing Database

Advanced Groundwater Sampling Procedures Help Understand Regional Hydrology

By Evan MacKinnon, Bill Ehorn and Pat Vellines

Northern Region Office (NRO) of the Division of Integrated Regional Water Management is using state-of-the-art groundwater sampling techniques to help develop an updated groundwater database for Northern California.

Groundwater quality data has become increasingly important as a foundation for aquifer characterization, analysis, and management. These data provide information about the age of groundwater, how fast it recharged, and how it is interconnected with other aquifers and surface water.

According to Bill Ehorn, NRO's Regional Planning Branch Chief and leader of this sampling effort, "This water quality data set can be used to assess future water supplies and is a necessary component of groundwater sustainability plans."

Data collection is a multi-disciplined endeavor involving staff from Northern Region's Water Quality, Data Collection and Management, and Groundwater and Geologic Investigations sections.

NRO is assisting California State University, East Bay, with a project involving dissolved noble gasses (non-reactive elements) and isotopes (versions of elements that differ in atomic mass) to assess historic temperatures and groundwater age and recharge source areas. The NRO team is sampling a radioactive isotope, tritium, an artifact of the 1950s and 60s nuclear era, to age groundwater on a finer timescale.

Left to right: Fish and Wildlife Scientific Aid Brian Bettencourt records data while Environmental Scientist Evan MacKinnon reads water quality parameters from a water quality meter in Sutter County on August 11.

Right: Brian Bettencourt holds a device used to capture groundwater flowing through a copper tube. This unique container holds a tiny sample of water used for dissolved noble gas analysis.

Together, these data can be used to promote sustainable groundwater use and are integral in implementing California's Sustainable Groundwater Management Act and Future Water Supply program.

Dozens of monitoring locations have been sampled, completing the field data collection portion of the project. NRO's focus is on the Northern Sacramento Valley that includes Butte, Colusa, Glenn, Shasta, and Tehama counties. Groundwater sampling is at least a two-person job, and an interdisciplinary field team usually consists of Engineering Geologist Glen Gordon or Water Resources Technician II April Scholzen, combined with Environmental Scientist Evan MacKinnon and Scientific Aide Brian Bettencourt.

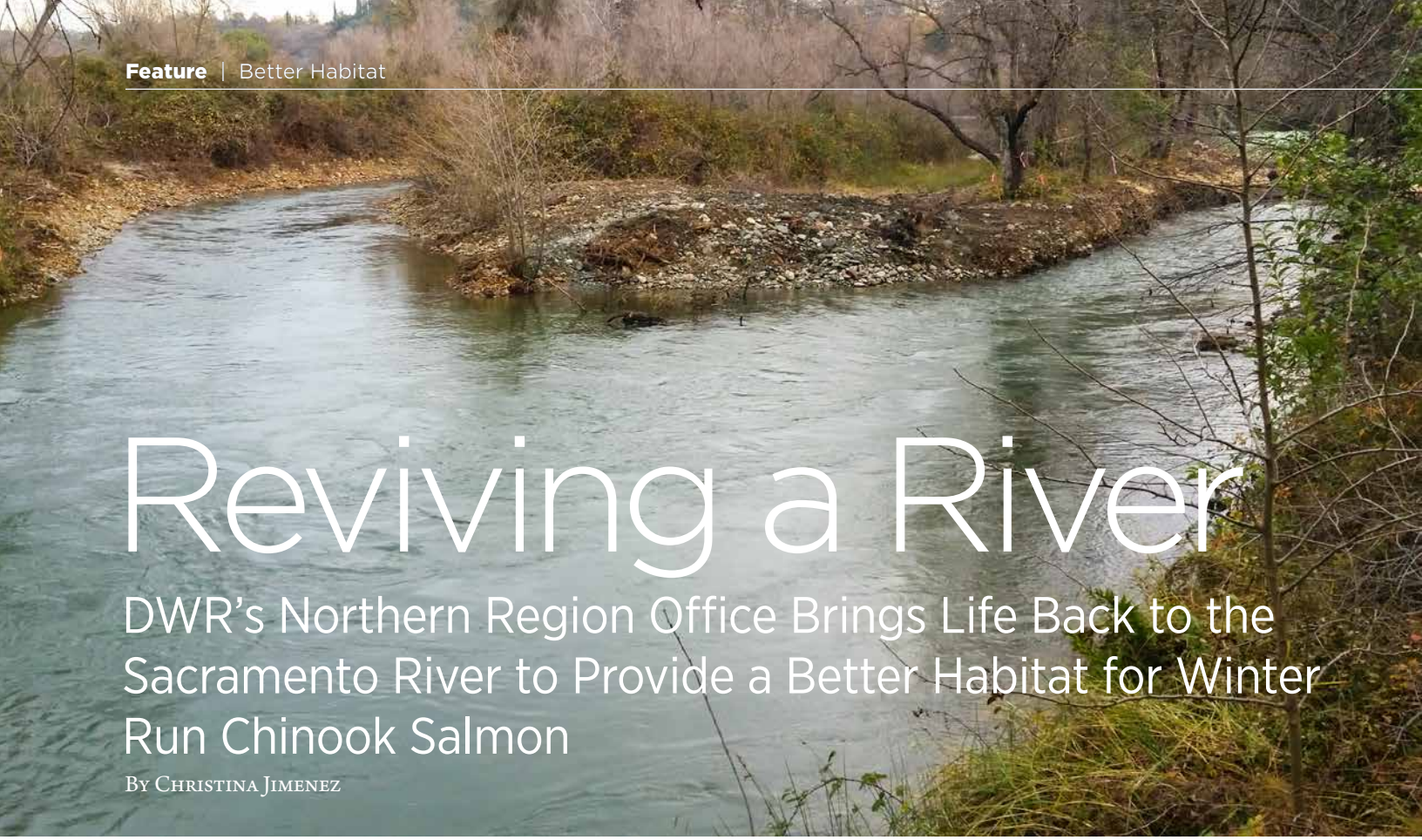
Using an innovative no-purge sampling device (Hydrasleeve), the NRO groundwater team can sample monitoring wells much faster than by traditional approaches. This is a tube of flexible plastic with a pressure-valve that allows sampling a specific depth. The sampler is attached to a tether and lowered often more than 1,000 feet into a well. After an equilibration period, the team retrieves the sampler and divides its contents using an Environmental Protection Agency (EPA) approved "clean hands/dirty hands" procedure (EPA Method 1669). Although the sampler is single-use, the tether is reusable, so we developed a three-stage decontamination process involving pulleys to prevent the transfer of contaminants between wells.

For dissolved noble gases, NRO staff uses a unique system to trap a tiny sample of groundwater that has not interacted with the atmosphere since just before it entered the ground, potentially thousands of years ago. Stagnant water is first purged from a well using a submersible pump to ensure the sample represents water from the aquifer. The pump discharge is then redirected through a copper tube sample container. Clamps are used to crimp the copper tube at both ends, forming a cold-weld that secures the sample.

NRO's multi-method approach to groundwater data collection continues to provide a clearer understanding of Northern California's groundwater. Data are quality-controlled and collection methods are standardized before data are made available to the public via DWR's Water Data Library (**water.ca.gov/waterdatalibrary/**), usually within a month or two from the date of the sampling effort.

Although it is too early in the process to suggest trends, the NRO team is looking more closely at its continuously growing database that spans conditions prior to California's recent drought, during record low groundwater elevations, and as groundwater levels appear to be recovering in some areas. The team will continue to develop a comprehensive groundwater database which will be used to ask and answer a range of hydrological and hydrogeological questions.

The no-purge sampling device is punctured with a straw in order to divide its contents into aliquots used for various water quality analyses. The container being filled is used for ultra-low level element analysis of groundwater.



Reviving a River

DWR's Northern Region Office Brings Life Back to the Sacramento River to Provide a Better Habitat for Winter Run Chinook Salmon

By Christina Jimenez

News about the survival prospects of migrating salmon all too often is discouraging news, but DWR is doing its part to change that.

The Northern Region Office (NRO) of DWR's Division of Integrated Regional Water Management spent two years designing, surveying, modeling, and overseeing construction of a new rearing habitat for winter run Chinook salmon traveling through Shasta County.

The first test of the North Cypress fish restoration site near the Cypress Bridge in Redding will be this fall when the salmon return to the region. Instead of side channels where the water was low or non-existent, they'll now find an inviting shallow habitat with slow-flowing water spread over about 2.5 acres.

"The winter run Chinook salmon reach the North Cypress restoration sites about the time river flows are at their lowest," said Senior Engineer Seth Lawrence, the Chief of the Engineering Studies Section in NRO. "We built these new fish rearing sites to maximize their habitat. We are trying to make the river a better place for them."

The habitat was completed last fall, with two upper side channels and one lower side channel.

Photos by Northern Region Office **Top to bottom:** Upstream view of the two upper side channels after construction completion. Scott Kennedy surveys existing ponds during the project's design phase. DWR staff Mike Berry and Scott Kennedy assisted by Glenn-Colusa Irrigation District Engineering Technician place large woody debris in the side channels during construction.

Mapping the Ground

NRO engineers worked side-by-side with surveyors to design functioning side channels for fall and early winter when flows are at their lowest.

"Topographic and bathometric surveys were conducted first to determine the contours of the land and streambed," according to NRO's Jim West, Transportation Land Surveyor.

Topographic surveys helped create a map of the ground above the water level, and underwater bathometric surveys were used to create a map of the riverbed.

Based on the surveys' data, a design engineer used the velocity and depths of the river to determine the total volume of excavation needed to create a slow and shallow stream.

"A two-dimensional model was created to verify proper function," said NRO Engineer Scott Kennedy, who did the modeling and design for this project.

The design had to incorporate several key factors, such as boating safety, the effects of flood flows, and the necessity to keep the channel entrances open and free of sediment.

"We don't want any adverse impacts to the side channels," Lawrence said.

Creating a design for the new habitat took a few months to run models and craft an optimal plan.

A New Habitat

"We set out to create a habitat that's approximately two feet deep with a water flow of two feet per second," Lawrence said. "This is prime habitat for the winter run Chinook salmon."

The three passages were all existing high-flow channels of the Sacramento River, but stagnant ponds also were present.

Aside from surveying and designing, NRO also placed the construction stakes for the construction crews from the Glenn-Colusa Irrigation District to dig out the side channels, creating what looks like small streams.

"Our goal was to take the areas where water was not flowing and create moving water," said Lawrence, who's been with DWR for 15 years.

Kennedy added, "We don't want the water to be too deep or too swift for the juvenile fish, as they'll just be swept away. We want them to stay and increase in size before they enter the bigger river. The side channels give them that opportunity."

Dirt was excavated from the channels, and gravel was added in sandy areas. Root wads from removed trees were anchored into banks to help fish hide from predators, and branches, tree matter, and limbs were also strategically placed in the river.

"This project and the other fish habitat restoration projects are good for water supply reliability," said Lawrence. "If we can make the winter run Chinook salmon less endangered or more abundant, people's water rights are more secure, too."

The North Cypress restoration site is one of 10 sites that will receive habitat improvements as part of the U.S. Bureau of Reclamation's Upper Sacramento River Anadromous Fish Habitat Restoration Program.

DWR and numerous other agencies comprise the Sacramento River Restoration Team that provides technical support to the Reclamation.

"This type of restoration work is a relatively new field – about 20 to 30 years old, compared to road or dam construction, which has been around much longer," Lawrence said. "Our team of engineers and surveyors is a valuable asset, with about 20 years of similar experience working on Trinity River restoration projects."

Above at left: Jim West surveys job site. Scott Kennedy (above) oversees construction and surveys site prior to construction (right) during the design phase.

Creating a Bridge of Information

DWR's Hydrology Branch Helps with California's Water Management

By Akiela Moses

To help manage California's waterways and facilities during floods, DWR's Hydrology Branch team of experts collects, manages, maintains, monitors, and exchanges hydrologic information for federal, State, and local agencies.

During the flood season, between October and April, the Branch provides other support and services including weather and hydrology briefings. In 2017, these briefings extended into the spring and early summer months to support the forecasted high snowmelt runoff in the San Joaquin basin.

The Division of Flood Management's Hydrology Branch consists of 32 employees in four sections. It produces information critical for river stage and reservoir inflow forecasting (in partnership with the California-Nevada River Forecast Center), and for snow surveys, reservoir operations, and other programs.

Above: Frank Gehrke of DWR's snow survey team measures water content at Phillips Station. **Left:** David Rizzardo, Chief, Snow Surveys and Water Supply Forecasting, explains snowmelt runoff forecasts at operations conference.

During the January and February 2017 storms and as a part of its Intelligence Section role within the Standardized Emergency Management System (SEMS), the Hydrology Branch provided around-the-clock forecast updates of reservoir inflows, river stages, and other hydrologic information to help with emergency response. To support the SEMS structure and the Flood Operations Center (FOC) during the storm events of 2017, one of the Branch's key functions was to help coordinate reservoir releases, to reduce flood risk to downstream communities.

"The Hydrology Branch really is an unsung hero for all of DWR's emergency response activities, relied upon by the State Water Project (SWP), various statewide reservoir operators, levee maintaining agencies and even the Governor," said Response and Security Section Chief Delia McGrath with the FOC.

Snow measurement information is provided to DWR's California Data Exchange Center (CDEC). CDEC maintains a centralized database and is a clearinghouse for the state's meteorological and hydrologic information, including readings from real-time snow sensors and snow course measurements for the California Cooperative Snow Surveys Program and precipitation and river stage sensors for flood forecasting. The snow surveys program provides monthly, seasonal, and water year runoff forecasts. CDEC provides a vital flow of data for California's water management, whether it is for flood, drought, or the environment.

"Data from CDEC, especially in real-time, helps modelers adjust input to their computer models that monitor and forecast not only river and reservoir stages, but also water quality conditions," said Sudhakar Talanki, Chief of the Hydrology Branch. "The same data is essential for emergency response activities, including flood preparedness and response."

These hydrologic forecasts are used for operations by the State Water Project, the Central Valley Project, the State Water Resources Control Board, and others to determine water supply allocations, management of Sacramento-San Joaquin Delta water, and general operations of major reservoirs throughout California.

Army Corps of Engineers General Visits Flood Operations Center

By George Qualley

On June 7, 2017, the Commanding General of the U.S. Army Corps of Engineers, accompanied by the Commander of the South Pacific Division paid a visit to the Flood Operations Center (FOC).

Lieutenant General Todd Semonite, Chief of Engineers from Washington, D.C., was in California and requested to see the FOC and learn about the work DWR and our partners do to prepare for and respond to flood emergencies.

General Semonite was particularly interested in learning more about the 2016-2017 wet season following on the heels of a prolonged drought, the Oroville spillway incident, and flood operations in response to high water conditions this year.

DWR executive management was appreciative of the opportunity to demonstrate value for continuing federal investment by showcasing federal-State partnership and cooperation for planning and implementing integrated water management programs and projects in California. Division of Flood Management (DFM) managers discussed examples of cooperative initiatives, including the Memorandum of Understanding with the Sacramento District of the Corps, key elements of the 2017 Update of the Central Valley Flood Protection Plan, and the DWR-led Yolo Bypass/Lower Elkhorn Basin Levee Setback Project.

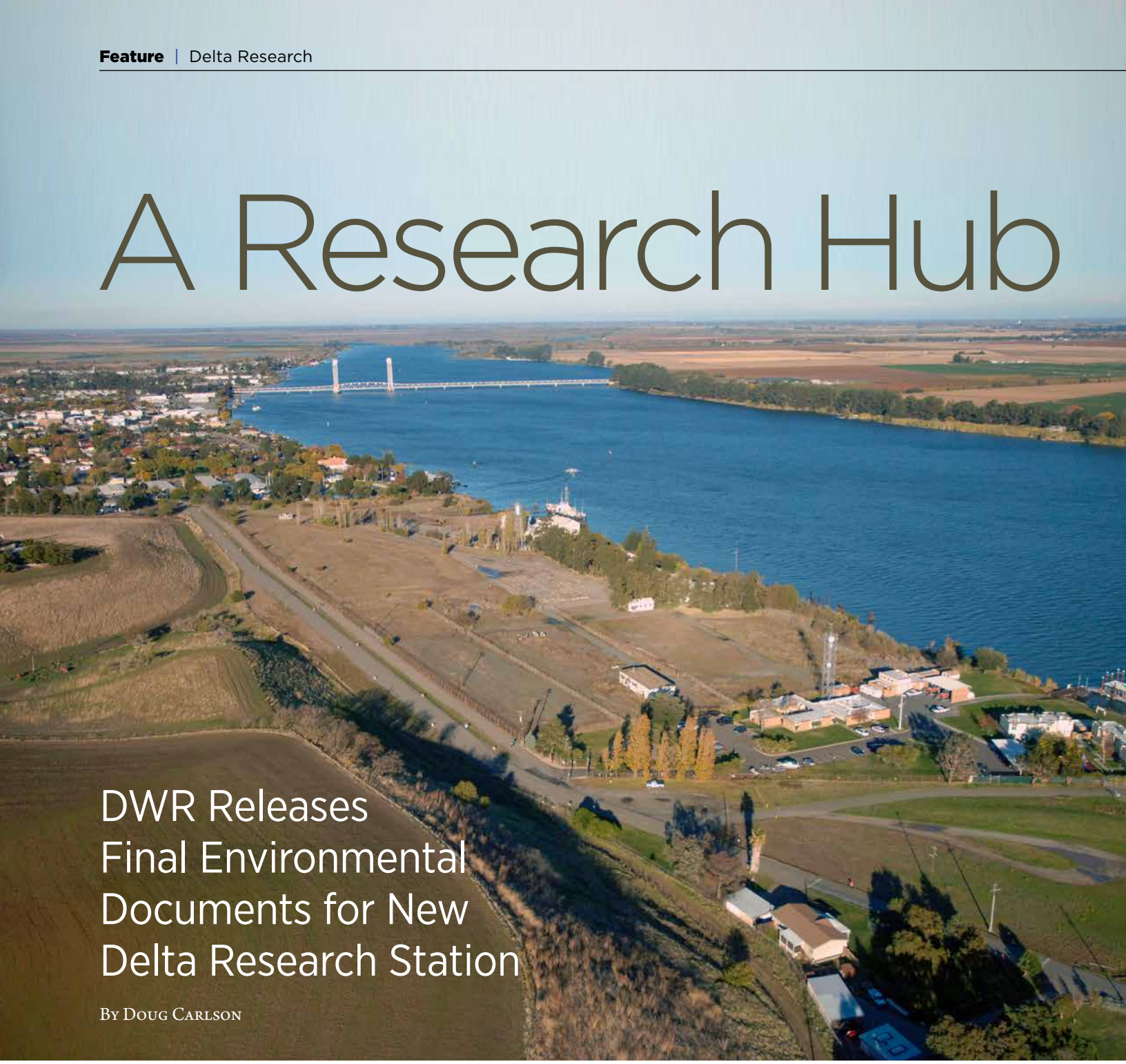
DFM described how the level and nature of State-federal coordination for water management in California is unique to the nation.

Since 1965, DWR's Flood Operations Center has been co-located with the National Weather Service (NWS) and the California-Nevada River Forecast Center (CNRFC), with state and federal hydrologists and engineers preparing and issuing joint river stage forecasts during high water periods. In 1995, DWR's Division of Flood Management, the NWS, and the CNRFC moved to the new Joint Operations Center. The State Water Project Operations Center (which also was co-located with the FOC, NWS, and CNRFC since SWP operations began in the mid-1960's) also moved to the new JOC and was joined by the U.S. Bureau of Reclamation's Central Valley Project Operations Center.

The co-location and close coordination among the major State and federal flood and water supply operational entities – along with accurate and timely forecasting, coordinated operation of major reservoir releases, and rapid communication of information to dozens of local and regional emergency managers -- has greatly enhanced the capability to better manage high water flows through the Sacramento and San Joaquin river flood management systems.

Right: Former Acting DWR Director Bill Croyle (left front) and Flood Operations Center staff brief Lieutenant General Todd Semonite, Chief of Engineers from Washington, D.C. (center) on 2017 emergency flood operations and DWR's response to the Oroville Spillway incident.

A Research Hub



DWR Releases Final Environmental Documents for New Delta Research Station

By Doug Carlson

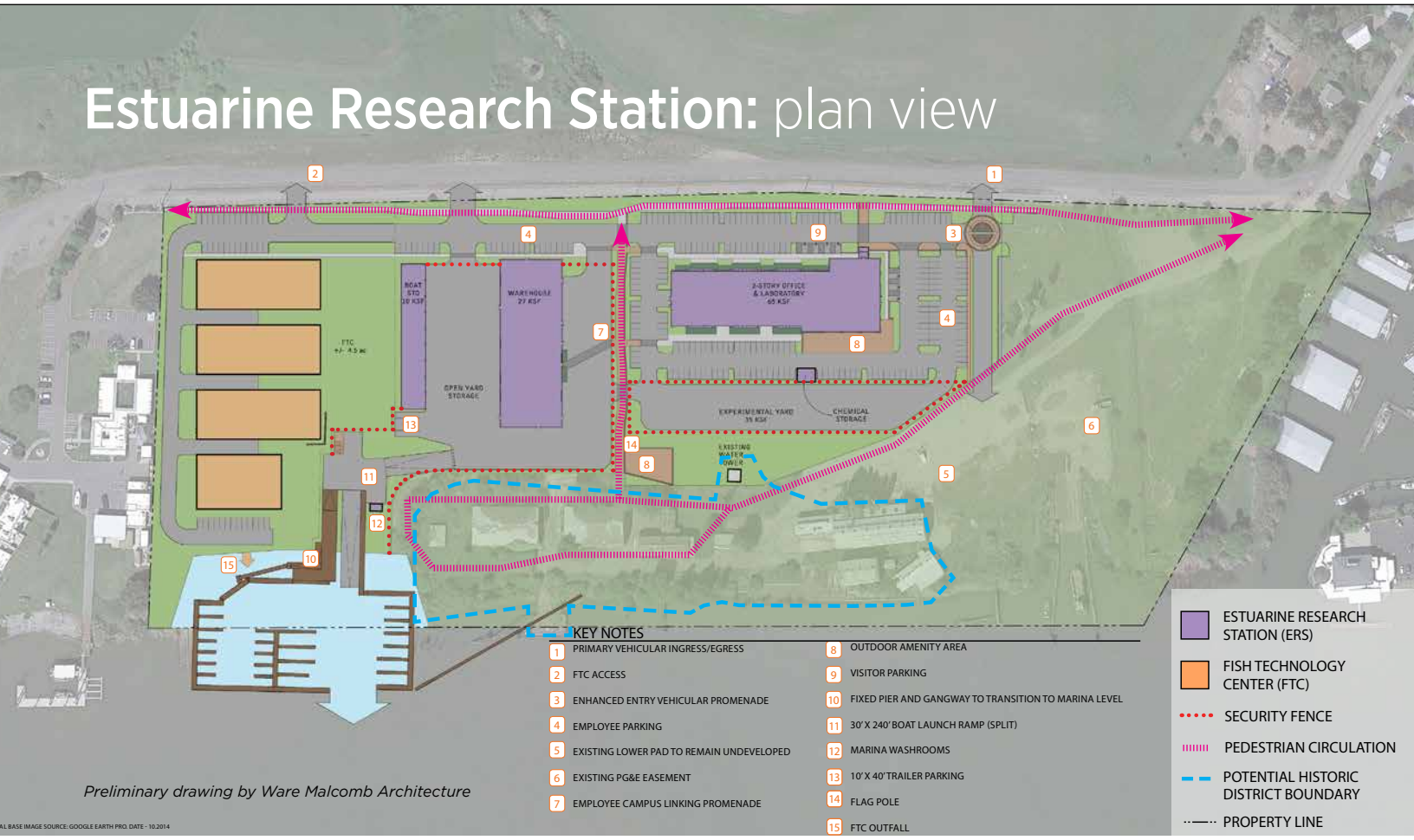
Nothing happens overnight in the Sacramento-San Joaquin Delta, which is a good operating principal for an important and critical California ecosystem.

Even so, supporters of a scientific field station that's been planned for the Delta since the 1990s can't be faulted for asking, "Are we there yet?"

The good news after all that time is that "there" is closer today after submission of the Estuarine Research Station's Environmental Impact documents in May.

The new field station is proposed on the 28-acre site of the former Rio Vista Army Base and would consolidate the activities of State and federal agencies involved with enhancing the region's environmental health, including the ongoing battle for survival of the Delta smelt and other endangered fish species.

The agencies' scientists, engineers, technicians, computer scientists, and office staff are now scattered throughout the Delta and even beyond. Consolidating their work in one location right on the Sacramento River



The proposed scientific field station on five-acres of the former Rio Vista Army Base in the Delta will house populations of fish species including Delta smelt.

would reduce operational costs and enhance scientific collaboration between DWR, the California Department of Fish and Wildlife, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the U.S. Bureau of Reclamation.

John Engstrom, DWR's Supervising Architect on the project, said it's long been recognized that bringing the agencies together in one location made sense. "It seemed fairly obvious that if you had them in one Delta location, there'd be more opportunity for collaboration and coordination among the agencies," he said.

Dr. Ted Sommer, DWR's Lead Scientist, enthusiastically seconds that view. "Having scientists work together side by side rather than talking to each other on the phone will promote creativity and efficiencies that will free up resources to tackle more projects," he said.

A high-powered hub for scientific advancement in one central Delta location should help with recruiting and retaining the best and brightest talent to do the research, Sommer said.

All that added efficiency should benefit the fish, he said, because instead of spending time and money traveling to spread-out locations in the Delta, scientists will be able to focus on new areas of research.

The cost savings of the new center should be considerable. Sommer noted that for years, every agency has needed one of each major component – its own boat, its own dock, its own laboratories. Many of their existing locations were never designed to be scientific facilities in the first place.

The station, which is estimated to cost between $90 and $100 million, will be based on a cost share between the State and the federal government. Although there is support from the State Water Project contractors to cover the State's share, securing the station's federal funding is the next major hurdle.

Congressman John Garamendi represents the area and is working on it.

"Protection of our Delta, the most important estuary on the West Coast of the western hemisphere, depends on science," he told DWR. "The Rio Vista Estuarine Research Station will advance our understanding of the ecology of the region and provide critical information to direct policy."

Both Engstrom and Sommer are well aware that nothing happens overnight in the Delta, but both are optimistic the federal funding eventually will come through.

People

Cindy Messer Appointed Chief Deputy Director

Cindy Messer had been working as Deputy Executive Officer, at the Delta Stewardship Council – an important role with a relatively low profile.

How quickly things can change.

In late December 2015, Governor Edmund G. Brown Jr. appointed Messer DWR's Assistant Chief Deputy Director. On February 7 of this year, the Oroville Dam Flood Control Spillway Incident began, and "Assistant" was soon dropped from her title.

With Acting DWR Director Bill Croyle spending so much time in Oroville managing the Department's response to the unparalleled emergency, Messer filled in for Croyle as needed.

By late April, she began leading a series of community meetings to explain the spillway's incident and apologize for the disruption the incident had caused in the region.

The winds of change wouldn't stop blowing Messer's way. Croyle announced his long-delayed retirement in late June, and the Governor named her to replace him as Acting Director in July.

Before beginning her new role on July 1 as leader of the Department with arguably the highest public profile in State government, Messer and husband Dean, Chief of DWR's Division of Environmental Services, and daughter Olivia took a one-week "breather" at Irish Beach in Mendocino County in late June.

"This is a great honor, and I'm committed to stepping into the role and keeping things moving," she said, noting how tumultuous Water Year 2017 has been, including the retirement of DWR Director Mark W. Cowin in December.

"This has been one of the most amazing years here – first in terms of coming out of a long drought, then a winter that in some areas of the state was the wettest on record. That's not to say we haven't had other difficult periods, but we find ourselves in truly challenging times."

Messer said she was "thrilled" to return to DWR for the opportunity to work with a great team, "There's a reason people come here and stay for their entire careers," she said.

Messer grew up in the Antioch and Pittsburg area and said she's always had an interest in the science of the Delta. She began her DWR career as a scientific aide in 1997, later moved up to environmental scientist and worked on major DWR projects.

Messer did fishery studies in the Yolo Bypass, was lead scientist on benthic invertebrate monitoring, performed invasive species studies on Zebra mussels and Chinese mitten crabs, and was lead for the Municipal Water Quality Investigations Program. She also worked on implementing the 2008 U.S. Fish and Wildlife Service's Biological Opinion for long-term operations of the State Water Project and the Central Valley Project.

After associating with colleagues who had advanced degrees, she concluded having one herself would be wise, so she worked at DWR during the day and on a master's degree at Sacramento State at night. "DWR was supportive, as long as my work was getting done," she said.

Messer had earned her Bachelor of Arts degree in Environmental Policy Analysis and Planning at the University of California, Davis. Her Master of Science degree from Sacramento State University is in Conservation Biology.

After 13 years with DWR, Messer spent two years as Assistant Executive Officer at the Sacramento-San Joaquin Delta Conservancy and helped launch the organization toward its goal of supporting environmental, economic, and social benefits in the estuary.

In 2012, Messer joined the Delta Stewardship Council and worked on The Delta Plan, the Delta's long-term management plan. She said her participation in numerous public meetings leading to the Plan's creation was good preparation for her leadership of the Oroville Spillway public meetings.

"The Spillway community meetings were emotional and very intense," she said. "I wanted the local folks who had to evacuate to know that we were very sorry. It was draining, but it was important to make the effort and assure people we're committed to fixing the problems and moving forward with them."

That's Messer's primary goal as DWR's Chief Deputy Director – no matter which way the winds blow. One thing about the winds of change: They never stop blowing. Messer returned to her Chief Deputy Director post when new DWR Director Grant Davis arrived in August.

Ledesma Appointed Deputy Director

Joel Ledesma, DWR's newly appointed Deputy Director of the State Water Project, has worked with the Department of Water Resources as an electrical engineer for more than three decades and brings expertise in water, energy, and project management.

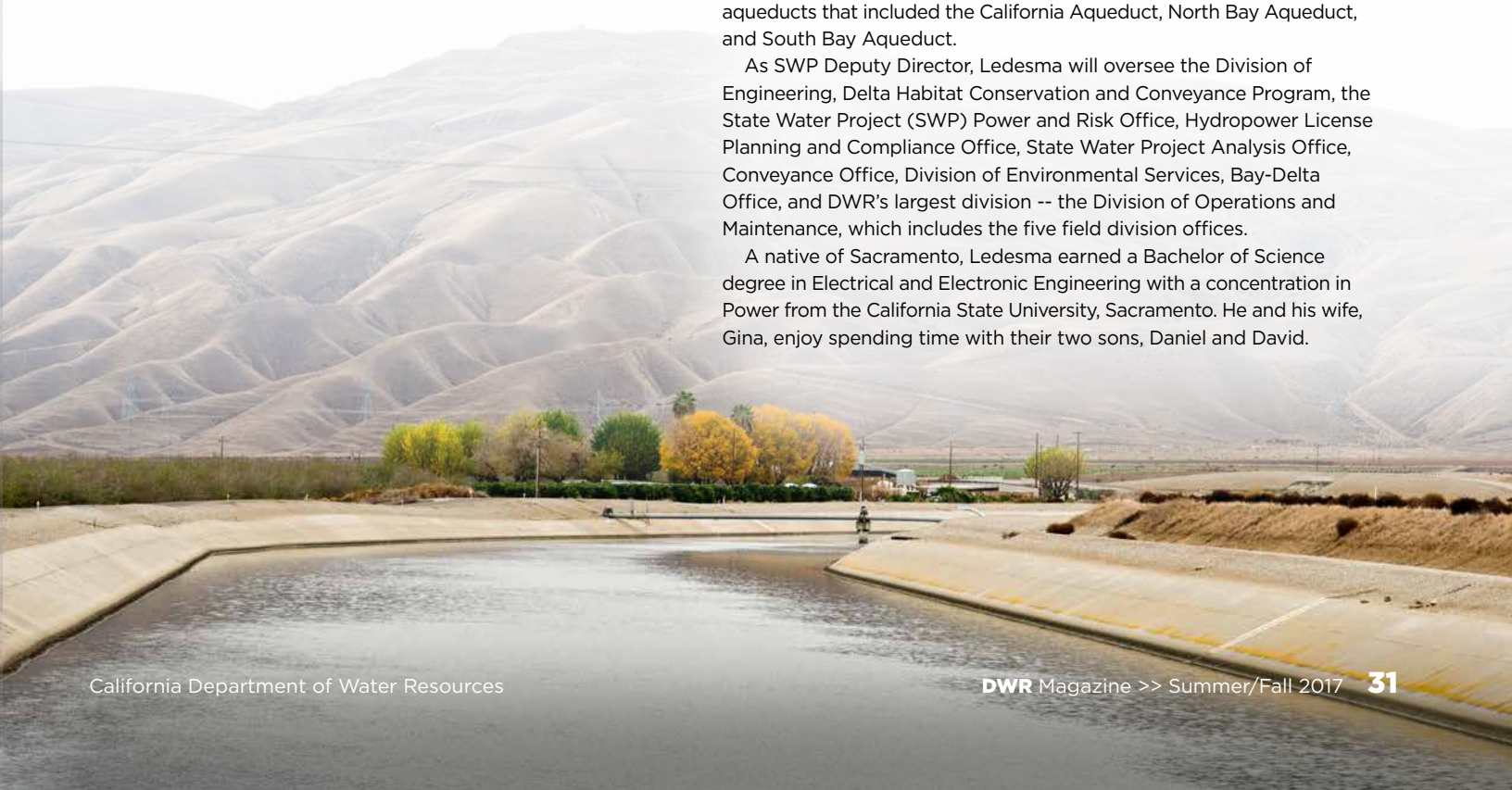
He has served as Assistant Division Chief of Operations and Maintenance, Chief of Plant Asset Management Branch, Chief of the Delta Field Division, Chief of Systems Support Office, and Chief of Energy Management Systems Branch.

He has led several DWR projects, including the Department's preparation of the initial startup of the California Independent System Operator (ISO) Corporation, Business 2000- Phase 2B, implementation of Cyber Infrastructure Protection Program for SWP, and Market Redesign Technical Upgrade project in compliance with Federal Energy Regulatory Commission and ISO regulatory and energy market requirements.

From January 4, 2016 until his appointment to Deputy Director in July 2017 by Governor Edmund G. Brown Jr., Ledesma was Assistant Division Chief 2, Chief of Utility Operations for Operations and Maintenance where he oversaw the SWP Operations Control Office, Oroville Field Division, and Delta Field Division with over 350 employees. This included overseeing SWP Water Supply, ensuring coordination of statewide SWP operations and maintenance, and coordinating water delivery with SWP contractors. Prior to that role, he managed more than 130 employees as Delta Field Division Chief, overseeing the operation and maintenance of five pumping plants, four reservoirs, four dams, two major environmental projects, and 115.6 miles of three aqueducts that included the California Aqueduct, North Bay Aqueduct, and South Bay Aqueduct.

As SWP Deputy Director, Ledesma will oversee the Division of Engineering, Delta Habitat Conservation and Conveyance Program, the State Water Project (SWP) Power and Risk Office, Hydropower License Planning and Compliance Office, State Water Project Analysis Office, Conveyance Office, Division of Environmental Services, Bay-Delta Office, and DWR's largest division -- the Division of Operations and Maintenance, which includes the five field division offices.

A native of Sacramento, Ledesma earned a Bachelor of Science degree in Electrical and Electronic Engineering with a concentration in Power from the California State University, Sacramento. He and his wife, Gina, enjoy spending time with their two sons, Daniel and David.



Public Affairs Office Has New Chief

Erin Mellon, who was appointed Assistant Director of Public Affairs by Governor Edmund G. Brown Jr, joined DWR in August.

Mellon was appointed as communications and outreach advisor for the Natural Resources Agency in 2016. Since April, Mellon has been acting as the communications manager for the Oroville Spillways Emergency Response and Recovery efforts.

"It's an interesting and challenging time to work on water in California and there's no where better to do it than DWR," said Mellon. "Communications is transforming and I'm excited to work with my colleagues to evolve our work and ensure the Department keeps pace."

As Assistant Director for the Public Affairs Office, Mellon oversees 40 employees responsible for media relations, public outreach and education, web content, social media, visitors centers, and graphic, photography and videography services.

From 2014 to 2016, Mellon was the communications director at ChargePoint, the world's largest electric vehicle charging network. Previously, she worked as a director at Mercury Public Affairs, a communications consultant for the California State Assembly Speaker's Office of Member Services, a deputy media and political specialist at the Dewey Square Group, and a deputy campaign manager for a Las Vegas mayoral election.

Mellon has a Bachelor of Arts degree in Political Science with a minor in English from California Polytechnic State University, San Luis Obispo.

NEW HIRES

Craig Altare
Integrated Regional Water Management
Engineering Geologist

Michelle Banonis
Executive
Assistant Chief Deputy Director

Daniel Bernardi
Safety of Dams
Engineer

Caitlin Boyer
San Luis Field Division
Guide I

Daniel Bremerman
Flood Management
Engineer

Alex Brown
Flood Management
Engineer

Eric Brown
Southern Field Division
Utility Craftsworker

Chelsea Bull
Business Services
Office Technician (Typing)

Vance Cave
Flood Management
Engineer

Phillip Chan
Technology Services
Systems Software Specialist II

Diana Chen
State Water Project Analysis Office
Engineer

James Choi
Operations and Maintenance
Mechanical Engineer

Matthew Clayton
Southern Field Division
Hydroelectric Plant Electrician I

Katie Conant
Engineering
Construction Supervisor I

Jennifer Cummings
Flood Management
Office Technician (Typing)

Christopher Cyr
Delta Field Division
Utility Craftsworker

Steven Dalton
Safety of Dams
Engineering Geologist

Ruben Duran
San Joaquin Field Division
Materials and Stores Specialist

Brett Ewing
Operations and Maintenance
Associate Governmental Program Analyst

Leon Fredette
Operations and Maintenance
Assistant Information Systems Analyst

Jaspreet Gill
South Central Region Office
Engineer

Jake Grace
San Luis Field Division
Utility Craftsworker

Brooke Harter
Southern Field Division
Management Services Technician

Lillian Hayden
North Central Region Office
Environmental Scientist

Behl Appointed Chief Financial Officer

Being good with numbers is only part of what it takes to be a Chief Financial Officer. DWR's newly appointed Chief Financial Officer (CFO) **Vinay Behl**, who has 23 years of public sector and multi-national experience in financial management, knows it takes much more.

"It's important to have a diverse skill set with a strong grasp on technical accounting, systems, enterprise risk management and compliance," said Behl, who joined DWR as CFO on April 3, 2017. "I grew in my career while auditing healthcare institutions, nonprofit organizations, military facilities, and IT companies in India and throughout the world."

Behl worked as Chief Financial Officer of a healthcare subsidiary of Guardian Life Insurance Company of America, and the United States Department of Health and Human Services' Indian Health Service in the California Area Office overseeing California and Hawaii budgets of a $6 billion agency.

He worked as Vice President of Finance for an international software firm from 1998 to 2010. He implemented financial governance in the United States, Europe and Asia.

Being DWR's Comptroller and CFO, Behl manages and directs a team of 100 plus employees in the Budget Office, General Accounting Branch, Enterprise Accounting Branch, Financial Analysis and Risk Management Office and Administration/Out of State Travel and Master Data Office.

Behl oversees the financial management of DWR's $3.5 billion budget. He directs the long-term financial planning of the State Water Project, one of the largest water supply projects undertaken in the history of water development that encompasses a complex of dams, reservoirs, pumping facilities, power plants, aqueducts, and pipelines owned and managed by the State.

"At DWR, I have three key priority areas," said Behl. "I want to focus on business analysis and insight, a reactive to more collaborative environment, and leveraging automation for efficiency and economy of business transactions."

A summa cum laude graduate of the University of Kurukshetra, India, Behl obtained a Bachelor's degree in Business Studies and a Master's degree in International Financial Management. In 2007, Behl received his Masters of Business Administration in Finance and Corporate Strategy from the University of California, Davis.

Behl, a Chartered Accountant and Certified Public Accountant, was named "CFO of the Year" by the Sacramento Business Journal in 2014. He was presented the United States Government Agency National Award for Contribution to Finance and holds professional credentials in areas of accounting, finance, and audit. He is a graduate of the leadership program from Cornell University.

Behl has traveled to countries across the globe, with Scotland being his favorite. An avid golfer, he is coaching his two daughters to golf and enjoys playing percussion instruments.

Having worked across diverse industries consulting for Boeing to UC Davis Health System, when we asked Vinay what he would view as his success, he simply says " My ability to set direction and instill a learning and collaborative environment in the large teams I lead, where all share the same vision and efficiency and value creation permeates everything we do."

NEW HIRES

Eduardo Hernandez
San Joaquin Field Division
Hydroelectric Plant Mechanic I

Michael Hoffman
San Luis Field Division
Utility Craftsworker

Sean Impeartrice
San Luis Field Division
Utility Craftsworker

Afshin Jalalian
Operations and Maintenance
Systems Software Specialist I

Matthew Krueger
Engineering
Transportation Surveyor

Devinder Kumar
Technology Services
Senior Programmer Analyst

Ryan Lamera
Operations and Maintenance
Mechanical Engineer

Daniel Larribas
Delta Field Division
Hydroelectric Plant Mechanic I

Jessica Leach
Engineering
Office Assistant (Typing)

David Moore
Business Services
Business Service Officer I

Olga Onate
Fiscal Services
Accounting Officer

Deborah Pearson
Engineering
Associate Governmental Program Analyst

Anthony Poindexter
Engineering
Office Assistant (Typing)

Timothy Rabun
San Joaquin Field Division
Utility Craftsworker

Deepthi Rajsekhar
Bay-Delta Office
Engineer

Nicholas Rasmussen
Environmental Services
Environmental Scientist

Jennifer Ruffolo
Executive
Program Manager I

Toni Salas
Executive
Executive Assistant

Christopher Smith
Business Services
Staff Services Analyst

Richard Spanfelner
Technology Services
Systems Software Specialist III

Brian Sutliff
Engineering
Office Assistant (Typing)

Garrett Sweaney
San Joaquin Field Division
Utility Craftsworker

Jodi Tennis
San Joaquin Field Division
Staff Services Analyst

Peter Van Alstein
San Joaquin Field Division
Hydroelectric Plant Operator

Lippner Leads North Central Region Office

With an interest in water management and the environment, **Gary Lippner** looks forward to working with the locals in his new assignment as Chief of the North Central Region Office (NCRO).

"My vision for NCRO is to have passionate, well-trained, and hard-working people who provide good value to locals and DWR by advancing regional sustainability," said Lippner, who became NCRO Chief in February. Staff are very passionate about water management and operate as a team to accomplish any action they are tasked with executing.

As part of the Division of Integrated Regional Water Management (IRWM), the staff of 75 NCRO geologists, engineers, scientists, research analysts, and others work on a wide variety of projects related to flood, water supply, environment, and recreation in 27 counties. The five hydrologic regions in NCRO include the North Coast, North Lahontan, Sacramento River, San Francisco Bay, and San Joaquin River.

NCRO's mission includes providing data and analysis to key DWR programs that are in charge of operating the State Water Project, maintaining DWR's statewide flood alert system, and enhancing environmental conditions.

Lippner's State career began at DWR nine years ago at NCRO where he worked on IRWM, the California Water Plan, the Truckee River Operating Agreement, State Administration of the Davis-Grunsky Grants, and Recreation Planning and Implementation programs. In addition, he served as the NCRO Regional Coordinator and later led NCRO's Regional Planning and Coordination Branch. He was part of NCRO's Incident Command Team and was the Drought Emergency Response Team Director.

Lippner worked eight years in the private sector supervising, motivating, and leading staff to deliver successful infrastructure projects across North America. He also worked four years in academia as a Staff Research Engineer for California State University, Sacramento's Office of Water Program.

A native of Sacramento, Lippner has a Bachelor's of Science degree in Civil Engineering from California State University, Chico and a Master's degree in Civil Engineering from California State University, Sacramento.

Raised around farming and sporting activities in the Yolo Bypass, Lippner became captivated by water management infrastructure and the environment. His passion is being outdoors enjoying nature by farming, fishing, and camping.

NEW HIRES

John Vogelsang
Southern Field Division
Utility Craftsworker

Dan Dam Khanh Vu
Operations and Maintenance
Electrical Engineer

Choua Vue
Fiscal Services
Staff Services Analyst

Paul Wells
North Central Region Office
Senior Engineer

Alyse Werlich
Business Services
Office Assistant (Typing)

Darion Williams
San Joaquin Field Division
Hydroelectric Plant Operator Apprentice

Patrick Wonderly
San Joaquin Field Division
Utility Craftsworker

Maigia Yang
Fiscal Services
Accountant Trainee

An Honor

Rich Juricich Wins Hugo B. Fischer Award

For **Rich Juricich's** leadership in the implementation of a modeling system used to assess water management challenges while considering environmental factors, he was awarded the 2017 Hugo B. Fischer Award at the California Water and Environmental Modeling Forum's (CWEMF) 23rd Annual Meeting on March 20 in Folsom.

Juricich, a Principal Engineer of the Division of Integrated Regional Water Management, was recognized for his contributions to the Water Evaluation and Planning system (WEAP) that was also used for the 2009 and 2013 updates of the California Water Plan.

"It's a great honor to be recognized by CWEMF for this award, which is really a reflection of the hard work by a team of DWR Staff and consultants who supported the Future Scenarios project over 10 years for the California Water Plan," said Juricich.

Juricich took on the key role of advancing the team's progress, acquiring the resources, helping stay on budget, and maintaining team morale in the face of various challenges.

He joins previous DWR award recipients, including Eli Ateljevich, Emin C. Dogrul, Armin Munevar, Kamyar Guivetchi, Dwight Russell and Francis Chung.

With a Master of Science Degree in Hydrologic Sciences from the University of California at Davis and a Bachelor of Science Degree in Environmental Resources Engineering from Humboldt State University, Juricich is also a registered Professional Civil Engineer for California and a certified Envision Sustainability Professional with the Institute for Sustainable Infrastructure. He has worked with DWR for more than 22 years.

The award was established by CWEMF in 1995 in honor of Professor Hugo B. Fischer, who was pioneered water quality modeling for the San Francisco Bay-Delta. This award is granted annually to one recipient who demonstrates leadership in the innovative development, refinement or application of a computer model, or use of such models for water resources or water quality management and regulations. Formed in 1994, CWEMF is a non-profit organization that aims to increase the efficient use of models to assist in evaluating California's water-related issues.

PROMOTIONS

Erdom Abraham
Delta Field Division
Senior Engineer

Mary Adams
Southern Field Division
Guide II

Mary Akens
Office of the Chief Counsel
Attorney IV

Ghassan Alqaser
SWP Power and Risk Office
C.E.A.

Monica Alvarez
Engineering
Staff Services Analyst

Kim Andregg
Technology Services
Systems Software Specialist III

Kevin Backes
Southern Field Division
Hydroelectric Plant Electrician II

Veronica Banuelos
Statewide Integrated Water Management
Staff Services Manager I

Jennifer Blackmon
South Central Region Office
Staff Services Analyst

Mandeep Bling
San Luis Field Division
Chief

Jeffrey Bowen
Technology Services
Systems Software Specialist II

Erin Brehmer
Flood Management
Senior Environmental Scientist

Lori Brock
Office of the Chief Counsel
Attorney IV

Edward Brown
Human Resources
Staff Services Analyst

Zambia Cain
Human Resources
Associate Personnel Analyst

Alex Caputo
Fiscal Services
Senior Accounting Officer

Suzanne Carlson
San Joaquin Field Division
Associate Governmental Program Analyst

Marilyn Carroll
Oroville Field Division
Water Resources Technician II

Neil Carter
San Joaquin Field Division
Hydroelectric Plant Mechanic II

Raymont Carter
San Luis Field Division
Hydroelectric Plant Technician II

Catherine Cavanaugh
Office of the Chief Counsel
Attorney IV

Joey Cavazos
Oroville Field Division
Utility Craftsworker Supervisor

Anesh Chandra
Fiscal Services
Accountant Trainee

Jose Chavez
Delta Field Division
Hydroelectric Plant Electrician I

Improving Communication

Technical Publications and Communication Media Unit Guides DWR Employees By Doug Carlson

Who among us hasn't been thankful for a "help desk" after it solved a problem we were having with a balky computer, program, or telephone?

A fixture of modern electronic life, the help desk often is our last resort after we've given up trying to fix or work around a problem ourselves.

But what if that help were available before you ran into trouble – before you even began a project?

DWR has exactly that kind of help desk for authors of the many publications the department publishes each year.

DWR's Technical Publications and Communication Media unit exists to help authors communicate effectively about issues that are highly technical and complicated.

If you're the author of such a publication, having a helpful staff to guide you right from the start can be the difference between an excruciating assignment and smooth sailing throughout the process.

William O'Daly, who supervises the Publications unit, said its mission is to serve all of DWR with writing and editing services and anything related to creating a technical document.

"We're most effective when a project manager gets us involved before a word of copy is written," O'Daly said. "Not enough people know we even exist, and when they find out, they're over the moon!"

If the Publications website had arms, they'd be wide open and inviting. It begins:

"When you have a report or other document that needs organizing, editing, or formatting, the Technical Publications and

PROMOTIONS

Semyon Chernozubov
Operations and Maintenance
Associate HEP* Utility Engineer

Joseph Cirigliano
Southern Field Division
Hydroelectric Plant Electrician II

Holly Cox
Business Services
Staff Services Analyst

Ranita Dalton
Human Resources
Personnel Specialist

Molly Daniels
Executive
Associate Governmental Program Analyst

Shervin Danque
Fiscal Services
Senior Accounting Officer

Rebecca Delaney
Business Services
Associate Governmental Program Analyst

Simarjit Dhanota
Integrated Regional Water Management
Senior Engineer

Amritpal Dhillon
Fiscal Services
Senior Accounting Officer

Robert Dunlop
San Luis Field Division
Supervising HEP* Utility Engineer

James Edwards
State Water Project Analysis Office
Senior Engineer

Shane Emerson
South Central Region Office
Environmental Scientist

John Everroad
Southern Field Division
Senior Hydroelectric Plant Operator

Randy Fessler
Executive
Supervising Engineer

Ruben Flores
Engineering
Water Resources Technician II

Donald Foley
Technology Services
Data Processing Manager III

Corey Fong
SWP Power & Risk Office
Associate HEP* Utility Engineer

Jared Frantzich
Environmental Services
Senior Environmental Scientist

Scott Goebl
Executive
Program Manager III

Adam Goldsmith
Fiscal Services
Associate Budget Analyst

Soufiana Haidara
Operations and Maintenance
Water Resources Engineering Associate

Greg Harvey
Central Valley Flood Protection Board
Senior Engineer

Tyler Hatch
Integrated Regional Water Management
Senior Engineer

Melanie Holman
Engineering
Staff Services Analyst

Left: DWR's Technical Publications Team Charlie Olivares, Chief William O'Daly, Jeff Woled, Carole Rains, and Frank Keeley meet to assign the editing of several technical publications. **Right:** Jeff Woled (left) and Frank Keeley review technical publications to be edited.

Communication Media unit is here to help you accomplish your goals."

Rare is the author who'd ignore such an invitation. O'Daly said DWR's authors are usually all too happy to sign up for the help. Anyone can do so by initiating a Publications Service Request using a form that's linked at the unit's home page, where they can also sign up for the team's monthly e-news.

"Most of the scientists and technical people here at DWR realize they're not professional communicators," he said. "They want their reports to be as clear and accurate as possible."

The unit, which is within the Project Services Office of the Division of Statewide Integrated Water Management, assists with all manner of publications – bulletins, divisional and regional reports, environmental impact reports, memorandum reports, white papers, technical information records, project closeout reports, manuals, user guides, annual reports, newsletters and brochures, and more.

Recent publications guided by the unit include the California Water Plan Update 2018, Policy Advisory Committee Meeting Summary; Native American Day 2016: Building Tomorrow through Teachings Today; Bay-Delta Annual Report 2016, and the Clifton Court Forebay Transit Time Modeling Analysis.

O'Daly said his staff begins an assignment by reviewing the specifications of a project, then proceeds with the project's development – organizing and scoping it, working on how best to structure the authoring team, and creating authoring guidelines based on the publication's intended audience. Helping authors communicate clearly and consistently with that audience is the essence of the unit's mission.

O'Daly's career path to supervisor of the Publications office has been long, broad, and deep, including years as the editor of literary journals, creator of manuals, tutorials and instructional videos on the Microsoft Windows Operating System, fine arts professor at Eastern Washington University and Antioch University in Seattle, poet, author, and translator of nine books of poems by Chilean Nobel laureate Pablo Neruda.

Others on the Publications staff include Research Writer Charlie Olivares, whose background in television news production helps keep the focus of DWR publications on the audiences they're intended to serve. He is Editor of the California Water Plan eNews, with a readership of 5,300. Jeff Woled, another Research Writer, draws on his experience as a regulations and legislative analyst for the California Department of Toxic Substances Control, as well as experience with the University of California, Davis in water resources and community development, and as a Technical Writer for Aerojet. Woled is Editor of the Delta eNews, with a readership of 2,500.

Carole Rains, in her 25th year with the department, is a trained Graphic Artist who enhances visual elements in reports, layouts, and brochures to ensure they convey technical information as clearly as possible. Frank Keeley, a third Research Writer, is good with numbers, having created and managed a $6 billion budget for the California Environmental Reporting System.

Authors who work with the Publications unit inevitably are introduced to the Technical Documentation Style Guide, the go-to information source on word use and grammar.

Even if you're not authoring a publication, scrolling through the Style Guide is well worth your time. Do you know when to use "under way" instead of "underway?" Do you know when to capitalize "State" and when not to? Your writing will benefit from even a quick skim of this informative document.

PROMOTIONS

David Hurd
Oroville Field Division
Hydroelectric Plant Tech Supervisor

Timothy Jimenez
Safety of Dams
Senior Engineer

Elizabeth Jimenez
Human Resources
Staff Services Analyst

Mireya Jimenez
San Luis Field Division
Staff Services Analyst

Maxine Johnson
Business Services
Office Services Supervisor II

Pasha Kashkooli
North Central Region Office
Water Resources Technician II

May Khang
Executive
Associate Governmental Program Analyst

Daniel King
Environmental Services
Senior Programmer Analyst

Eric Koch
Flood Management
C.E.A.

Gail Kuenster
Environmental Services
Environmental Program Manager II

John Leahigh
Operations and Maintenance
Chief of Utility Operations

Jeanne Lee
Human Resources
Staff Services Manager II (Managerial)

Lei Lei
Fiscal Services
Accountant Trainee

Susan Lemmon
Business Services
Staff Services Manager I

Earnie Lorren
Delta Field Division
Senior Hydroelectric Plant Operator

Thomas Luong
Safety of Dams
Associate Governmental Program Analyst

Hoa Ly
Executive
Program Manager II

Ryan Mactarnaghan
Operations and Maintenance
Supervising HEP* Utility Engineer

Juan Madrigal
Southern Field Division
Materials and Stores Specialist

Analisa Martinez
Environmental Services
Senior Environmental Scientist (Supv.)

Jennifer McClure
San Joaquin Field Division
Associate Governmental Program Analyst

Denise Medeiros
San Luis Field Division
Administrative Officer II

Elizabeth Medeiros
Business Services
Staff Services Analyst

Kevin Michalski
San Joaquin Field Division
Hydroelectric Plant Electrician II

Accolades to the Team

State Water Resources Development System Awarded for Excellence in Financial Reporting

In March of 2017, DWR Fiscal Services and the State Water Project Analysis Office was awarded the Government Finance Officers Association (GFOA) Certificate of Achievement for Excellence in Financial Reporting for their submission of the 2016 fiscal year end comprehensive annual financial report (CAFR) of the State Water Project enterprise funds headed by Lisa Toms.

"Earning this award puts forward the Department's goodwill, credibility of our financial records, and gives accolades to the dedication of DWR employees," said Alicia Ramirez, Chief of the Financial Reporting Analysis Office.

The Financial Reporting Analysis Office put together a plan to achieve this honor, and it took approximately two years to execute.

DWR had to first become a member of the GFOA -- which established the award program in 1945, enhance financial statements, and train and develop staff to achieve higher standards.

The GFOA established the Certificate of Achievement for Excellence in Financial Reporting Program to encourage and assist State governments to go beyond the minimum requirements of generally accepted accounting principles to prepare CAFR that make information easier to analyze for users and provides transparency and disclosure. Fiscal Services worked closely with the State Water Project Analysis Office to collectively share financial data and also increased collaborative efforts with DWR's external audit firm.

"The Unit worked together to gather a great amount of information and detail beyond what is required of the Department in an audited financial statement," said Ramirez. "Requirements for meeting the criteria of this award ran 109-pages long, and our team checked off each obligation listed on those pages."

Left to right: Financial Reporting Analysis Office and the State Water Project Analysis Office employees who received the Certificate of Achievement for Excellence in Financial Reporting include **(back row)** Fiscal Services Chief Vinay Behl, SWPAO Chief Pedro Villalobos, Lisa Toms, Kevin Lim, and Omid Torabian **(middle row)** Jesus Parrilla, Tony Perez, Alicia Ramirez, Thu Nguyen, and Jesse Gonzalez-Perez **(sitting)** Jeanet Uy, Sharon Chu, Abby Hernandez, Maigia Yang, Bess Leung, and Lori Lay.

PROMOTIONS

Javier Miranda
Bay-Delta Office
Senior Environmental Scientist (Supv.)

Jeffrey Mitchell
San Joaquin Field Division
Utility Craftsworker

Dale Moisio
San Luis Field Division
Hydroelectric Plant Mechanical Supervisor

Richard Montecino
Southern Field Division
Junior Engineering Technician

Sheryl Moore
Delta Field Division
Chief

Brian Moore
Engineering
Construction Supervisor III

Nicholas Morgan
Southern Field Division
Hydroelectric Plant Electrician I

Kijin Nam
Bay-Delta Office
Senior Engineer

Gupta Nirupama
Technology Services
Staff Information Systems Analyst

Brian Niski
Technology Services
Systems Software Specialist III (Supv.)

William O'Daly
Statewide Integrated Water Management
Supervisor of Technical Publications

Sothea Oeun
South Central Region Office
Engineer

Brittany Oliphint
Human Resources
Associate Personnel Analyst

Steven Orozco
Oroville Field Division
Utility Craftsworker

Anthony Padilla
Fiscal Services
Senior Accounting Officer

Juana Palma Hernandez
Fiscal Services
Accounting Officer

Raul Pantoja-Ledesma
Delta Field Division
Associate HEP* Utility Engineer

Karen Parr
Executive
Staff Services Manager II (Managerial)

Benjamin Patten
Oroville Field Division
Hydroelectric Plant Electrician II

Antonio Perez
Delta Field Division
Hydroelectric Plant Mechanic II

Laura Peters
Integrated Regional Water Management
Supervising Engineer

Huu Pham
Environmental Services
Staff Services Manager I

Alisa Pierce
Business Services
Associate Business Management Analyst

Jeannette Popovich
Southern Field Division
Senior Hydroelectric Plant Operator

Chuck Borelli, a retired annuitant, teaches a Supervisory Training Program session.

Helping Others

Volunteer Trainers and Presenters of 2016

The DWR Training Office recognizes the nearly 160 volunteer trainers and presenters who supported DWR's training program throughout 2016.

These DWR employees served as class instructors or presenters on top of their regular responsibilities. It is due to such dedicated individuals, who are willing to put in the extra time and effort to share their knowledge and expertise, that DWR has such a robust and highly regarded training program. These volunteers trained more than 6,000 participants in well over 250 classes. We thank them for their commitment to employee training and development.

Anthony Agustin
Anecita Agustinez
Marcelino Alcantar
Kathy Aldana
Emily Alejandrino
Tawnya Alibani
Mike Anderson
Emmanuel Asinas
Rachel August
Gary Bardini
Denise Barnes
Rob Barry
Tom Beiler
Mike Bingaman
Kora Bitcon
Roxanne Boone
Charles Brush
Elizabeth Bryson
Nathan Burley
De Ann Campagna
Doug Carlson
Susan Carroll
John Carter
Pam Ceccarelli
Teresa Chaney
Erin Chappell
Tariq Chechi
Andy Chu
Nova Clemenza
Pete Coombe
Gina Craig
Bill Croyle
John Curless
Sharmane Daniels
Devinder Dhillon
Chi Doan
Jenifer Dong-Kawate
Michael Donlon
Teresa Engstrom
Juan Escobar
Tasmin Eusuff
Megan Evans
Angelique Fabbiani-Leon
Farhad Farnam
Heidi Ferrell
Nancy Finch
Guy Gagot
Myra Galvez
Tim Garza
Kim Gazzaniga
Bryant Giorgi
Gretchen Goettl
Sirisha Gottipati
Lynnette Green
Kamyar Guivetchi
Elaine Hall
Jeanette Hamilton
Matthew Harris
Steven Heller
Zachary Heller
Art Hinojosa
Ray Hoagland
Mark Holderman
Eric Hong
Scott Hunt
Jeffrey Ingles
Karen Joelson
Gareth Johnson
Shawn Jones
Lauma Jerkevics
Dave Kearney
Ryan Keith
Spencer Kenner
Nita Kushal
Salma Kibrya
Michelle King-Byrd
Kathie Kishaba
Roy Kroll
Jeanne Kuttel
Brent Lamkin
Lisa Larsen
Joel Ledesma
Jeanne Lee
Justin Leavitt
Karen Louie-Tom
Elissa Lynn
Duard MacFarland
Romain Maendly
Andy Mangney
Katherine Marquez
Paul Marshall
Analisa Martinez
Paul Massera
Daniel McConnell
Dean Messer
Mutaz Mihyar
Aaron J Miller
Michael Miller
Margaret Mitchell
Jennifer Morales
Rene Mostert
Tiffany Navarrette
Jacqueline Nelson
Nate Nelson
Perla Netto-Brown
Linda Ng
Brian Niski
Monica Nolte
Tina Nycum
John Paasch
Ed Perez
Michael Perrone
Wendy Pierce
Rudy Portis
Andrea Riley
Doug Rischbieter
Robin Rodriguez
Elana Romano
Maury Roos
Janet-Marie Salinas
Kasey Schimke
Andrew Schwarz
Michelle Selmon
Geoff Shaw
Mary Simmerer
Wendy Slepian
Brian Smith
Michelle Starke
Martin Stevenson
Jason Swain
Keith Swanson
Rodney Teeter
Jeff Tkach
Lisa Toms
Carl Torgersen
Craig Trombly
Dan Tumiati
Pieter Van Tatenhove
Olaf VanArdenne
Pedro Villalobos
Bill Voss
Mike Waggoner
Jackie Wait
Jim Wang
Elizabeth Ware
Matthew Warnick
Debra Whiting
Melinda Williams
John Wilusz
Twylla Winslow
Dan Yamanaka
Wendy Yang
Mark Zetterbaum
Rich Zmuda
Sarah Zorn

PROMOTIONS

Rodney Prasad
SWP Power & Risk Office
Senior HEP* Utility Engineer

Sergio Quintero
Southern Field Division
Hydroelectric Plant Mechanic II

Joel Quintero
Southern Field Division
Water Services Supervisor

Daniel Rabatich
Engineering
Water Resources Technician II

John Rea
Delta Field Division
Hydroelectric Plant Mechanic I

Marisol Reynoso
Integrated Regional Water Management
Environmental Scientist

Helen Riddle
Business Services
Associate Governmental Program Analyst

Itzia Rivera
Central Valley Flood Protection Board
Senior Environmental Scientist

Caitlin Roddy
Environmental Services
Senior Environmental Scientist

Ramaura Rucker
Business Services
Staff Services Analyst

George Samarin
San Joaquin Field Division
Hydroelectric Plant Mechanical Supervisor

Amber Sanchez
Northern Region Office
Junior Engineering Technician

David Sandino
Office of the Chief Counsel
Attorney V

Justin Sannar
Oroville Field Division
Assistant Utility Craftsworker Supt.

Raymond Santiago
Southern Field Division
Hydroelectric Plant Operator Apprentice

Benjamin Scheeline
Operations and Maintenance
Senior HEP* Utility Engineer (Supv.)

Rajesh Shah
Engineering
Engineer

Nancy Shaltes
Engineering
Associate Governmental Program Analyst

Ravi Sharma
Operations and Maintenance
Principal HEP* Utility Engineer

Aimee Shepard
Executive
Associate Governmental Program Analyst

Karin Shine
Office of the Chief Counsel
Attorney IV

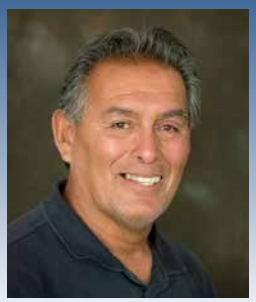
Preet Karan Singh
Delta Field Division
Associate HEP* Utility Engineer

Amardeep Singh
North Central Region Office
Supervising Engineer

Pardeep Singh
Operations and Maintenance
Supervising HEP* Utility Engineer

Service Awards

CELEBRATING 40 YEARS



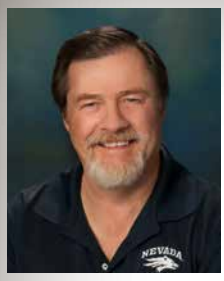
Daniel Rivas
Southern Field Division
Utility Craftsworker
May 2017
August 2017

CONGRATULATIONS DWR PARENTS

Cale Nasca, an Engineer in Flood Management's Reservoir Coordinated Operations Section, has a daughter named Juliana Ada, who was born on May 9 weighing 6 pounds, 6 ounces, and was 20 inches long.

Ryan McKinney, a Television Specialist in the Public Affairs Office, has a daughter named Sienna Rose, who was born on August 18 weighing 8 pounds and was 20.75 inches long.

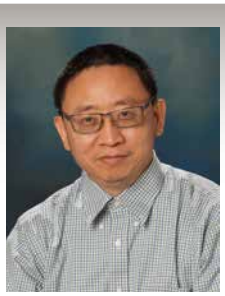
CELEBRATING 25 YEARS



Kevin Allec
Operations and Maintenance
Associate Control Engineer
June 2017

Shirley Alvarez
Executive
Associate Governmental Program Analyst
June 2017

Paul Chata
Southern Field Division
Utility Craftsworker
March 2017



Zhiqiang Richard Chen
Bay-Delta Office
Senior Engineer
June 2017

Dave Encinas
South Central Region Office
Senior Engineer
May 2017

Olivia Garcia
Engineering
Associate Right of Way Agent
May 2017

Rich Juricich
Integrated Regional Water Management
Principal Engineer
August 2017

Andrea Lobato
Flood Management
Supervising Engineer
July 2017

Eric See
Oroville Field Division
Environmental Program Manager I
May 2017

Sean Sou
Statewide Integrated Water Management
Supervising Engineer
August 2017

Todd Thompson
Statewide Integrated Water Management
Senior Engineer
July 2017

Bill Voss
State Water Project Analysis Office
Senior Engineer
June 2017

PROMOTIONS

Tara Smith
Bay-Delta Office
Principal Engineer

Merlin Sorbito
San Luis Field Division
Hydroelectric Plant Technician II

Jannette Stetson-Buck
Southern Field Division
Business Service Assistant

Ashley Stroke
Environmental Services
Chemist

Sharon Tapia
Safety of Dams
C.E.A.

Dang Thuy
Technology Services
Systems Software Specialist II

Robin Van Huis
Operations and Maintenance
Senior Water and Power Dispatcher

Kaylee Vanni
Integrated Regional Water Management
Environmental Scientist

Stephanie Varrelman
Executive
Staff Services Manager III

Pedro Villalobos
State Water Project Analysis Office
C.E.A.

Tyrel Voss
San Luis Field Division
Senior Hydroelectric Plant Operator

Levi Warr
Executive
Engineer

James Watson
San Joaquin Field Division
Utility Craftsworker Supv.

Michael Whipple
Southern Field Division
Senior Hydroelectric Plant Operator

Nicole Wietsma
Business Services
Staff Services Analyst

Wayne Wong
Operations and Maintenance
Senior Control Engineer (Supv.)

Michael Wright
Central Valley Flood Protection Board
Supervising Engineer

Kuo Yang
Operations and Maintenance
Supervising HEP* Utility Engineer

Cyndy Young
Technology Services
Senior Information Systems Analyst

Mikel Zabalbeascoa
San Luis Field Division
Utility Craftsworker

Jamal Zumot
Engineering
Principal Engineer

Retirements

Kathy Aldana, who led the effort to advance DWR's Human Resources Office (HRO) into the digital age, retired in June after 26 years with DWR and 33 with the State.

Taking over as Human Resources chief in 2009, Aldana worked to improve the processing of payroll, personnel, and training transactions with digital technology using the Department's system of record, Documentum.

"The projects, the people, and the environment are what kept me at DWR," said Aldana. "It is a progressive Department. The culture of the Department is to find the best solutions to support the mission of the Department. Currently, HRO, the Division of Technology Services and Operations and Maintenance have partnered on a project team to implement a DWR cloud based Learning Management System that will streamline and improve end-to-end training processes, from class creation to enrollment, tracking training classes and certifications for its employees."

For exceptional leadership in furthering DWR's mission, Aldana was awarded the Outstanding Management Excellence Award in 2016. She also has been recognized for outstanding performance as a Personnel Services Specialist, leadership as manager of the Payroll and Benefits Services Section, and for training. She was part of DWR's SAP implementation team in 1999.

"As HRO chief, I developed new partnerships outside of State service with California utilities when DWR was invited to join the California Energy Utility and Workforce Consortium," said Aldana. "DWR will now join the national arm of the State Consortium known as the Center for Energy Workforce Development (CEWD). This will help with recruitment for classifications that are difficult to fill because through CEWD, we'll be able to recruit nationwide, have access to stats for applicable classifications, trends in workforce planning and analysis."

Aldana and HRO staff have advocated for changes to the State's personnel management policies and procedures while involved with Governor Brown's Civil Service Improvement Initiatives. Four years ago, DWR, along with other State agencies, was granted in-house full delegated authority by the California Department of Human Resources to approve complex and higher-level personnel actions and soon will receive formal delegated authority for examinations.

"We take pride in the work that we accomplish in HRO," said Aldana. "We bring employees on board, support divisions, complete reorgs, assist with illness and injury leaves for employees and provide consulting services to support supervisors and managers, along with many more on-going tasks."

A native of Sacramento, Aldana's State career began as a Clerk Typist for the Employment Development Department, Veterans Affairs, and California State Teachers' Retirement System where she was promoted to Office Services Supervisor. After a seven-year separation from State service to care for her two daughters, now DWR employees, she joined DWR in 1990 as Personnel Services Specialist. After several promotions, including to Staff Services Manager I in the Personnel Office in 2000, she transferred to DWR's largest Division - Operations and Maintenance as a Staff Services Manager II, where she became chief of the headquarters' Administrative Services Office. Working closely with field division administrative officers and after gaining a broader knowledge about the State Water Project, Aldana became Chief of the Human Resources Office in 2009.

As DWR employees, such as Aldana, take the journey into retirement to enjoy time with family, DWR recently published, and is now updating its workforce and succession plans.

"I supported this effort in the HRO by implementing an excluded employee job rotation, increasing collaboration and communication between the five branches of the HRO that has resulted in staff transferring within the office to increase their knowledge of HR operations. This has resulted in staff retention," said Aldana. "I encourage all DWR managers and supervisors to consider options for retention and succession planning and the outstanding staff in the HRO are ready to assist."

As for Aldana, she plans to enjoy retirement with her husband of thirty-eight years, travel the U.S., and spend time with her grandsons.

Bonnie Duecker, who grew up in the hills above Southern Field Division (SFD) headquarters in Pearblossom, remembers watching construction of the California Aqueduct as a child. In those early days, she never imagined she would spend 29 years of her life working for DWR on the State Water Project (SWP).

Duecker, who retired on June 1 as a Hydroelectric Plant Operations Superintendent in SFD's License and Compliance Coordination Branch, began her DWR career as a Mechanical and Technical Operations Trainee in 1987 after pursuing her degree in biological sciences at Colorado State University. As part of the Division of Design and Construction's Lancaster Project Headquarters (now the Division of Engineering's Pearblossom Headquarters), she worked in project administration, construction surveying, and inspection of the East Branch Enlargement, including Pearblossom Pumping Plant, Mojave Siphon and Devil Canyon Second Penstock.

"To prepare for inspections, I gathered harness, hard hat, vest, water, lights, air tester and monitor among other items," said Duecker. "I learned to adjust to the conditions of walking or crawling through tunnels from nine to 30 feet long and culverts from 36 to 72 inches. To move through the smaller culverts, I used a modified skateboard to roll through it. It came handy when I encountered bats, lizards and rattlesnakes."

Duecker spent a great deal of time on the more than 140 miles of aqueduct, southern dams, and reservoirs.

"I have inspected just about every pipeline and tunnel in Southern Field Division from the bifurcation downstream, including Peace Valley Pipeline, Angeles Tunnel, Castaic stream release and spillway gallery, nine circular siphons, Pearblossom Discharge lines, Big Rock Siphon, Mojave Siphon, San Bernardino Tunnel, Santa Ana Pipeline (27 miles), and Perris Outlet Works tunnel."

In 1992, Duecker transferred to the Division of Operations and Maintenance's SFD in the Pearblossom Water Operations Section.

"I oversaw water operations of the SWP from Pearblossom Plant downstream to Silverwood, Perris, and the East Branch Extension as a Water Resources Engineering Associate Supervisor for the Devil Canyon Water Operations Section in 2001," said Duecker. "In 2008, as Water Services Supervisor, my role expanded to the Upper East Branch and West Branch Aqueduct, including Pyramid and Castaic Lakes."

Duecker surveyed excavation for the Pearblossom Pumping Plant enlargement and worked on several Santa Ana Pipeline outages for repairs and inspections.

"Coordinating safe Santa Ana Pipeline outages and getting everyone to work together (different crafts, outside agencies, water contractors, etc.) under challenging conditions and long hours required a lot of communication and negotiation," said Duecker.

After her promotion to Hydroelectric Plant Operations Superintendent in 2014, Duecker became Chief of the new License and Compliance Coordination Branch, where she worked with outside agencies for the compliance and relicensing of SWP facilities in Southern California.

"I helped plan and execute four tabletop and functional exercises for emergency response training and Federal Energy Regulatory Commission (FERC) compliance, and led a complete revision of our FERC Recreation Plan, and the Pyramid Dam and Cedar Springs Dam Emergency Action Plans," said Duecker.

Duecker, who lives in the hills above Pearblossom, has eight horses, two donkeys, and 17 peacocks, plus ducks, dogs, and cats. She enjoys watching all the native critters, including quail, rabbits, lizards, hawks, and anything that slithers.

"My plans for retirement center mostly on spending time with my husband, retired DWR Engineer David Duecker and our desert menagerie," said Duecker. "I really enjoyed working to preserve the integrity of the State Water Project and the fascinating people who work on it, but look forward to deciding which of the eight horses to ride today and what new mountain to explore!"

RETIREMENTS

Melody Baldwin
Environmental Services
Research Analyst II

Joseph Barron
Engineering
Supervising Engineer

Dorothy Benjamin
Public Affairs Office
Staff Services Manager II (Supv.)

Mike Bingaman
Business Services
Associate Business Management Analyst

June Blair
San Joaquin Field Division
Hydroelectric Plant Technician I

Hang Doan
Operations and Maintenance
Electrical Engineering Technician II

Angela Gavia
Fiscal Services
Accounting Officer

Diana Gillis
Delta Field Division
Chief

Walter Glenn
Delta Field Division
Hydroelectric Plant Electrician I

Margie Graham
Northern Region Office
Senior Environmental Scientist Specialist

David Gutierrez
Safety of Dams
C.E.A.

Eric Hong
North Central Region Office
Principal Engineer

Ronald Jackson
San Joaquin Field Division
Utility Craftsworker Supv.

Frank Julio
Operations and Maintenance
Heavy Equipment Mechanic

Robert Lanini
Operations and Maintenance
Senior Water and Power Dispatcher

Eric Lauchli
Environmental Services
Hydroelectric Plant Technician II

Perry Le Beouf
Northern Region Office
Environmental Scientist

William Looper
Operations and Maintenance
Senior Control Engineer

Wivina Mateo
Fiscal Services
Senior Accounting Officer

Freddie McFarlin
San Luis Field Division
Water Resources Technician II

Edward Mentz
San Luis Field Division
Chief Hydroelectric Plant Operator

Pamela Merrill
Operations and Maintenance
Office Technician (Typing)

Nancy Miller
Technology Services
Data Processing Manager IV

Deborah Myrum
Statewide Integrated Water Management
Staff Services Manager I

Earl Nelson never expected his job as a news reporter would turn into a successful career in environmental planning. After 16 years with DWR as an Environmental Program Manager protecting and restoring California's natural and urban environments, Nelson retired in July.

Starting as a reporter for a newspaper in Tuolumne County after earning his bachelor's degree in Communication and Public Policy, Nelson first developed an interest in environmental work after joining the County Planning Department.

"I found I really enjoyed working on environmental planning work so began taking courses to shore up my environmental and planning knowledge and skills," said Nelson. "My position was County Planning Director's assistant, which I did for two years. In this time, I re-wrote the County Zoning Ordinance and implemented expanded staff reports for development decisions up for consideration by the County Planning commission."

After two years, the Planning Director retired and Nelson was promoted to the Director's position, which he held for two years until leaving to do volunteer planning consulting for a retreat center in Butte County.

After 25 years as an environmental planner and project manager for Tuolumne County, Butte County, and the Western Area Power Administration, Nelson joined DWR's Environmental Scientist Team in December of 2000.

While supporting the Division of Flood Management, Nelson implemented and managed the Flood Protection Corridor Grant Program that was geared towards allocating funds to projects that provided increased flood protection, while also enhancing California's environment.

"During the time I managed the program, $130 million in grant funds were allocated to nearly 40 flood projects at various flood-prone locations throughout the state from Redding to San Diego," said Nelson.

For his leadership and dedication to the program, Nelson received DWR's Management Excellence and Sustained Superior Accomplishment Award in 2006.

In 2005, Nelson earned his master's degree in Planning from the University of Southern California, and in 2007, became a Branch Chief in the Flood Projects Office focusing on State environmental permitting for large flood control projects, such as the new Folsom Dam spillway, Marysville Ring levee, and other water management upgrades. Nelson became Environmental Program Manager for the Executive Division's Hydropower License Planning and Compliance Office in 2013 until his retirement.

"I maintained my role in DFM's emergency response program as Deputy Incident Commander for Incident Command Team 4, which is one of six DWR emergency response teams ready for deployment to locations where an emergency such as a flood, fire, earthquake, mudslide, or similar disaster is imminent or in progress."

Nelson implemented and led one of these programs called DWR's Amateur Radio Team for three years.

"The time that I have worked at DWR has been a wonderful opportunity to be part of a great team," said Nelson.

Along with completing his wife's "honey-do's," Nelson's retirement plans include spending time with his adult children and grandchildren, traveling to Brazil to help with humanitarian work, and doing part-time consulting. He also looks forward to maintaining his hobby as a musician by playing the French horn and bass guitar, restoring vintage radios, musical and sound equipment, while also spending more time on his religious studies.

Martha Navarrete
Fiscal Services
Accounting Officer

Stephen Nemeth
Flood Management
Engineer

Aspet Ordoubigian
Safety of Dams
Senior Engineer

John Pacheco
California Energy Resources Scheduling
C.E.A.

Michael Perrone
Environmental Services
Recreation and Wildlife Resources Advisor

Cynthia Puccinelli
Operations and Maintenance
Staff Services Analyst

Saeid Raoufi
Operations and Maintenance
Supervising HEP* Utility Engineer

Richard Rodriguez
Delta Field Division
Water Resources Technician II

Daniel Salyers
Operations and Maintenance
Associate Corrosion Engineer

Emmanuel Samones
Southern Field Division
Water Resources Technician II

Maureen Sergent
State Water Project Analysis Office
Senior Engineer

Amanda Tai
Technology Services
Systems Software Specialist II

Kuen Tsay
State Water Project Analysis Office
Senior Engineer

Louis Vonderscheer
Engineering
Senior Land Surveyor

Richard Willoughby
Flood Management
Water Resources Technician II

Twylla Winslow
Fiscal Services
Staff Services Manager II (Managerial)

Michael Wofford
California Energy Resources Scheduling
Supervising HEP* Utility Engineer

Rodney "Scott" Zimmerman
Oroville Field Division
Hydroelectric Plant Tech. Supv.

*Hydroelectric Power

In Memoriam

Ted Thomas, Chief of the Department of Water Resources Media and Public Information Branch for more than 20 years and a well-known reporter and editor for 25 years before beginning his State service, passed away on August 7 at his home in Sacramento.

"Ted ranks among the best California State information officers I knew in almost 40 years of service," said Pete Weisser, retired DWR employee and former Chief of DWR's Public Affairs Office. "A skilled writer and a meticulous editor, Ted was an expert on California history, politics, and water policy topics."

For decades, Ted rubbed elbows with the famous and infamous in California government, journalism, and politics. One of his longest acquaintances was Dan Walters, who writes about California affairs for the CalMatters and is a former Sacramento Bee columnist.

"Ted was a very good reporter and was particularly interested in foreign affairs," said Walters. "He knew a lot of people all over the world from his reporting travels."

After serving in the United States Army as an Information Officer, he worked for the Humboldt Times as political editor and columnist from 1967 to 1974, until he became a free-lance writer throughout Central America and later reported for the San Jose News. In 1975, he joined The Sacramento Union.

In 1983, he moved to Washington, D.C. as Deputy Foreign Editor of the Washington Times, directing the paper's worldwide network of foreign correspondents, as well as reporting on special projects, a series on the Reagan Administration. Ted returned to Sacramento to work for the Union from 1984 to 1988 as Deputy Editorial Page Editor.

In 1988, his State career began as Assistant Director for Public Affairs of the Department of Fish and Game (now Fish and Wildlife), where he wrote the Department's Public Relations Plan.

Ted's long career at DWR began in 1997. Former DWR Director David Kennedy, who was the longest-serving DWR Director, was among many experts impressed with Ted's command of water issues and their ever-present controversies.

"Ted understood the power of words," said Sue Sims, External Affairs Manager of Metropolitan Water District of Southern California and former DWR Chief Deputy Director. "He used them to tell great stories and present information, but also to speak his mind when he thought others were wrong. Ted shared with many of us that gift of language. I am grateful to have called him a colleague and friend, and very sad that his voice has been silenced."

Ted readily shared information with the media and public on the long history and complex operations of California's State Water Project. During massive flooding in 1997 and 1998, he tirelessly worked long shifts to inform the news media on developments.

Whether a drought, flood, or SWP operations, he always ranked media response as one of his top priorities while working for the State.

"It was an honor to work with Ted all these years," said Kathie Kishaba, DWR Deputy Director. "I'll never forget the time he called me to do an on-camera interview with one of the local news stations. I gave him every excuse in the book as to why I couldn't do it, but he would not let me off the hook. It was the mentor in him that walked me through the process and assured me everything would be OK. I am privileged to have known such a true professional who was so dedicated to his work."

For those privileged to work for him, Ted was an excellent mentor who worked closely with employees he supervised to help them enhance their job skills. His employees were always happy to come to work each day. He will be greatly missed.

Ted was preceded in death by his wife Kim. He is survived by his brother Robert Thomas.

Cheryl Refuerzo, retired Staff Services Manager II with the Division of Operations and Maintenance, passed away at age 69 on February 18 in Sacramento.

Refuerzo held various positions within the Department, including Staff Services Analyst, Office Services Supervisor II, and Regional Administrative Officer I and II for the Division of Energy. In 1996, she was promoted to Staff Services Manager II for the Division of Operations and Maintenance. Refuerzo retired in 2003 with 36 years of State service.

While with the DWR, Refuerzo remained an active member with DWR's Affirmative Action Group for Women and Volunteer Training Committee for which received a unit award.

"A life well lived," said Dave Kearney, Chief of the Business Services Office. "Cheryl was a great and respected Manager and Administrative Officer. I am so sorry to hear of her passing."

Cheryl Refuerzo is survived by her husband Ken, daughter Brigette, and grandsons Hunter and Jace.

Sue Larsen, Administrative Officer II with the Hydropower License Planning and Compliance Office, passed away on March 31.

Sue began her career with DWR in the State Water Project Analysis Office in October 1999 and was immediately immersed in helping launch the complex Oroville Facilities Relicensing Program. She performed her tasks with such skill and dedication that in 2005, as a Staff Services Analyst, she was one of two staff selected to deliver the $65 million license application package to the Federal Energy Regulatory Commission in Washington, D.C. to beat an unmovable deadline. The package got there five days early.

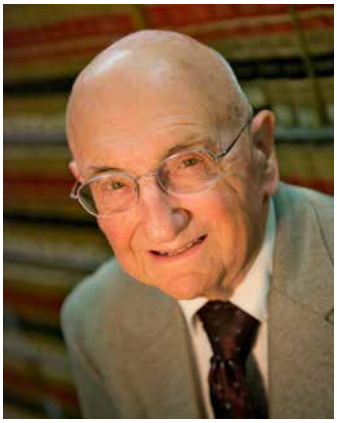
Later in her career, she transferred to the Executive Division, where she was indispensable in helping create and lead a new office to be known as the Hydropower License Planning and Compliance Office.

Sue was universally well-respected and admired inside and outside DWR, and remembered by DWR management, by her peers, and by her staff as being heroic, dedicated, perseverant, perceptive, positive, friendly, and helpful. When people reflect on Sue's life, they often remember her easy-going attitude, get-it-done work ethic, infectious laugh, warm smile, and the care and concern she always had for others.

Rick Ramirez, her former manager (now retired) recounts, "We always had to be careful about loaning Sue out to other projects. They never wanted to let go of her. But she always found a way back."

DWR repeatedly acknowledged Sue's exceptional performance over the years. She received Outstanding Professional Accomplishment and Sustained Superior Accomplishment Awards in 2005 and 2015, as well as a Certificate of Appreciation in 2004. While very modest about her own accomplishments, Sue would beam with pride in recounting the numerous challenges she and her DWR colleagues overcame.

Sue is survived by her beloved parents, Judy and Stephen, and extended family.



Bob James retired Deputy Director and Chief Counsel, passed away at age 94 on May 18. With more than 50 years with DWR, James is credited as being one of the Department's longest serving employees.

A native of Oakland, James graduated from Fremont High School before enrolling at the University of California, Berkeley in 1940. His journey in higher education took a temporary detour after the start of World War II when he joined the army.

Once the war ended, James returned to U.C. Berkeley where he earned his bachelor's degree in Economics in 1946 as Magna Cum Laude. Three years later, he returned to U.C. Berkeley's Boalt Hall to earn his degree in Law.

James' 63 years with the State included working for the Unemployment Insurance Appeals Board, Franchise Tax Board, and the Reclamation Board. He joined DWR's Legal Office in 1962.

James provided legal counsel to 11 DWR Directors and was instrumental in developing the State Water Project (SWP).

In 1975, he became Deputy Director for the SWP, overseeing four different divisions including the Operations and Maintenance, Design and Construction, Land and Right of Way, and Energy. During this time, he was honored for supporting the upward mobility program.

James was promoted to Chief Counsel in 1986 for DWR Director Kennedy. He covered various court matters, including construction, eminent domain, labor relations, and water and environmental law. He played a critical role in the signing of agreements that coordinated the operation of the SWP and federal Central Valley Project.

After getting a taste of retirement in 1988, James returned to DWR as a retired annuitant to assist DWR's law team as one of the Department's top policy advisors before officially retiring in 2012.

As a dedicated member of the DWR, James was known by many for his kindheartedness and strong work ethic.

"Bob James embodied what it means to be an outstanding public servant," said David Sandino, Senior Staff Counsel in DWR's Office of the Chief Counsel. "On everything he touched, he tried to make sure that the public interest was well served.

"He had a tremendous scope of knowledge about State government in particular and the Department in general, and he was frequently relied upon for his legal expertise on the State Water Project, flood management, and bond programs," said Sandino. "He was extremely loyal to the Department and its employees. He also had a knack of approaching his work with a sense of humor and putting people at ease, and he was a wonderful mentor and friend to everyone in the legal office."

James is survived by his wife Barbara of 55 years, three children, seven grandchildren, and seven great-grandchildren.

William "Bill" Helms, retired Flood Management Supervisor, passed away at age 85 on April 10.

Helms began his 40-year career in State service with the California Board of Equalization in 1955 before transferring to DWR in 1961 as a Water Resources Technician. In his first position with the DWR, Bill worked on appraisal maps and acquisitions packages during a period when DWR was acquiring more than 5,000 parcels to build Lake Oroville and sections of the California Aqueduct.

In 1971, Bill switched to inspecting floodways and levees for the Flood Control Office of the Division of Planning. In 1978, shortly after the Division of Flood Management (DFM) was formed, Bill joined the Flood Operations Center (FOC), where he produced DWR's "Water Supply Outlook" and became a familiar face answering media questions during both floods and droughts. In 1992, Bill was promoted to Flood Management Supervisor, overseeing DFM's Emergency Response Section.

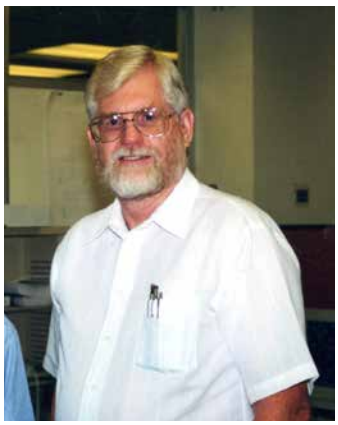
"Bill was one of DFM's superstars during high water events," said George Qualley, retired DFM Chief. "Although he always did a great job at his regular assignments, he really rose to the occasion during emergency flood operations. As Chief of the Emergency Response Section, Bill was the 'talking head' for media interviews, and was especially effective during television spots, where his calm demeanor and ability to coherently and concisely relate current conditions served him well during the 17 years he worked in the FOC."

With 40 years of State service, including 33 years with DWR, Helms retired in December of 1994. Even in retirement, Bill provided his help and expertise in 1995 by assisting DWR's FOC with major floods in January and March.

"Bill was very conscientious and was always looking for a fresh way to look at things," said retired DFM Chief Hydrologist Maury Roos. "He was just an all-around great guy."

"Unlike today's state-of-the-art FOC, the center in Bill's day was little more than an assortment of large wall maps and several computer terminals connected to a single mainframe computer," recalls Eric Butler, Supervising Engineer with DFM. "What made it work was Bill's knowledge of the reservoirs, rivers, channels, and maintainers of the Central Valley flood management system, and his ability to share that knowledge with other staff, the news media, and public."

Helms is survived by his daughter Kathryn, son William, grandchildren Angella, Michael, and great-grandchildren Alanna, Loralei, Ana Lucia, and Sawyer.



Roger Henry, retired Senior Mechanical Engineer, passed away on August 18 at the age of 77.

Henry played a large part in the mechanical design, construction, and upgrades of several State Water Project facilities, including Edmonston Pumping Plant, Skinner Fish Facility, and Banks Pumping Plant.

A native of Seattle, Washington, Henry graduated with a Mechanical Engineering degree from the University of Washington. Henry joined DWR as a Junior Mechanical Engineer in 1963 with the Design Office (now Division of Engineering).

He worked on the Banks Pumping Plant as a Junior Mechanical Engineer before working on the Edmonston Pumping Plant's discharge pipeline tunnels as an Assistant Mechanical Engineer in 1967.

In 1969, Henry joined DWR's Tehachapi Division before moving back to Sacramento in 1973 to work with the Mechanical Design unit.

After his promotion to Senior Mechanical Engineer in 1999, Henry joined the East Branch Extension project's pipeline team assigned to designing the pipelines from Crafton Hills Pump Station in the City of Mentone to the Noble Creek Turnout in Cherry Valley. Henry retired in 2000 with more than 37 years with the Department.

During retirement, Henry continued to enjoy outdoor activities, such as hiking, boating, hunting, woodworking, and fishing.

"We hunted together off and on for 40 years," said Charlie Mathis, retired Mechanical Construction Supervisor II with the Division of Engineering. "After not seeing any deer all day, Roger would consult his map and occasionally say there should be deer here."

Henry is survived by his wife, Linda, and his two children, Anne and Peter.

Robert Mills Sr., retired Associate Information System Analyst of Oroville Field Division's Electrical Engineering Section, passed away at age 74 on April 20 in Phoenix, Arizona.

After serving from 1960 to 1963 in the Recon Division of the U.S. Army in West Germany, Mills, a native of Yuma, Arizona, joined DWR's Utility Crafts Section.

He was promoted to a Hydroelectric Plant Operator in DWR's Electrical Engineering Section at the Oroville Field Division. He operated generators, pump motors, aqueducts, and other equipment at facilities, including San Luis and Oroville Field Divisions.

After returning to school to learn computer programming, Mills became an Associate Information Systems Analyst and programmed Oroville Field Division's display boards for pump and generator units until retiring from DWR with 32 years of State service in 1995.

"I worked with Bob at the Oroville Dam until he retired," said Eric Taylor, retired Operator with the Division of Operations and Maintenance. "He was a very honest forthright person; he always had your back. He was in a class by himself."

In retirement and throughout his life, Mills enjoyed his hobbies, projects, and adventures, such as golfing, fishing, operating remote control aircraft, hunting, rock hunting, jewelry making, carpentry, masonry, recreational vehicle touring, and HAM radio (one instance he was successful to reach one of the astronauts in space on the space shuttle Columbia),

Mills is survived by his wife of 51 years Kathleen, sons Richard, Gregory, and Robert Jr., and six grandchildren Heather, Tiana, Alyssa, Stephan, Thomas, and Ryan.

Fawzi Karajeh, a former DWR Senior Land and Water Use Scientist, passed away at the age of 59 on August 1.

Karajeh's DWR career of more than 15 years began in 1993 as an Associate Land and Water Use Analyst. In 1999, Karajeh left DWR to work at the International Center for Agriculture Research in Dry Areas (ICARDA) as a Senior Marginal-Quality Water Scientist. Karajeh returned to DWR where he established the Water Recycling and Desalination Branch and served as the Chief from 2001 to 2010.

"Fawzi's knowledge of California's desalination and recycled water issues was unparalleled, and he was instrumental on leading the seminal work of the 2002 Recycled Water Task Force," said Kamyar Guivetchi, DWR's Chief of the Division of Statewide Integrated Water Management.

Karajeh returned to ICARDA in Cairo as a Principal Water Resources and Irrigation Management Scientist and the Regional Director for the Nile Valley and sub-Saharan Africa region, where he worked for five years.

Dr. Takashi Asano, the winner of the 2001 Stockholm Water Prize, said "Fawzi was very positive, a good leader and organizer" when recalling Karajeh's work managing the 2002 Recycled Water Task Force. "That was not easy because of very conflicting views: State agencies, water districts, recycled water use opponents. He managed to work with them all, even politicians. The Task Force report Water Recycling 2030 was a milestone publication. He was able to actually accomplish it because of his positive attitude, listening to and understanding the people, and because of his knowledge, his education, and his international experience."

At DWR, Karajeh led the 2003 Water Desalination Task Force, initiating the Desalination Grant Funding Program, facilitating interagency collaboration, and updating the California State University, Sacramento engineering curriculum.

In recognition of the excellence he demonstrated, he received the DWR Director's Award in 2003 for his work on the 2002 Recycled Water Task Force. Richard A. Mills, who worked with Karajeh on the task force and is the current chief of the Water Recycling and Desalination Section, said Dr. Fawzi Karajeh "increased DWR's profile in the recycled water and desalination communities and brought leadership to DWR's own programs."

Takashi Asano said that Karajeh "was enthusiastic about water reuse. He exemplified one of the best characteristics of California, long term forecasting and planning."

After leaving DWR, he continued his career assisting developed and developing countries with a focus on water resources planning and management. Karajeh authored and co-authored more than 90 publications and received eight Recognition and Professional Awards.

As noted by Marsha Prillwitz, retired Chief of the Office of Water Use Efficiency, "In addition to his professional accomplishments, Fawzi was famous for his generosity and the respect he showed to everyone with whom he came in touch. He had a ready smile and hearty handshake for all."

"In addition to knowing Fawzi as a colleague and a professional with exceptional skills and abilities, I was honored to have known him as a remarkable person and a close friend and his wonderful family," said his colleague Fethi BenJemaa.

Karajeh's optimism shined with his frequent refrain, "Life is good." He will be missed.

Karajeh is survived by his wife Laila, his four children Samer, Shadi, Rahmi, and Linda, and a granddaughter.

DWR Mission Statement

To manage and protect the water resources of California in cooperation with other agencies, to benefit the State's people and to protect, restore and enhance the natural and human environments.

Cordi Sogge, Graphic Designer III in the Graphic Services Branch of the Public Affairs Office, wraps up her second year as graphics lead for DWR's Water Conservation Rain or Shine outdoor exhibit at the California State Fair. Water-wise gardens and landscapes were featured in this year's 30,000 square-foot display. Whether it's through graphic design, photography, videography, or exhibitry, Graphic Services creative teams seek the most appropriate and effective means to connect DWR to its many audiences.