

| Fall 2017 |

# TEXAS *h2o*

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## 10 Years of Innovation!

Kay Bailey Hutchison Desal Plant  
Celebrates Anniversary | Page 3

## TXWARN in the Eye of Harvey

Follow TXWARN's Story as it Responded  
to Hurricane Harvey | Page 6

Upcoming Chapter Events | Calendar | And More!



# Committed to Texas

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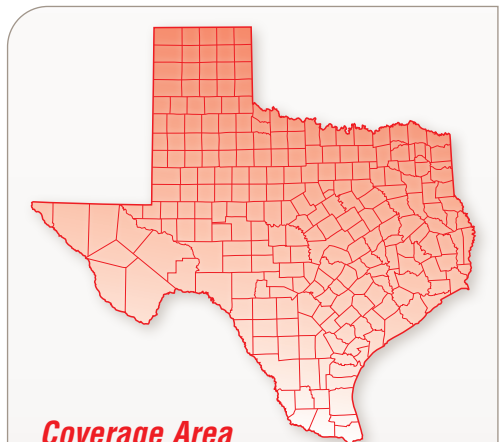
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# Kay Bailey Hutchinson Desalination Plant Marks 10 Years of Innovation

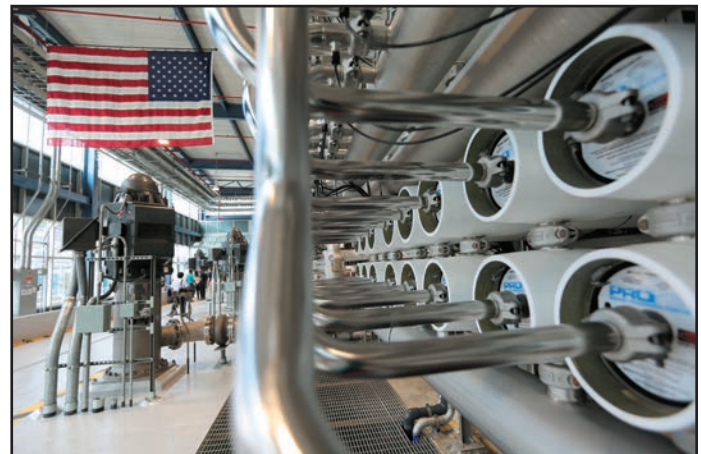
Employees, legislators and industry experts gathered Sept. 15 to celebrate the 10th anniversary of the Kay Bailey Hutchinson Desalination Plant. A centerpiece of the day was a research forum, featuring highlights of experimental work conducted at the in-house laboratory and how the findings could shape the future of desalination.

## Celebrating sustainability

"Given the vast brackish groundwater resources, desalination has become an important part of the puzzle that will ensure we have a vital water future for this community, including for our kids, grandchildren and anybody that wants to live here in the future," said John Balliew, president and CEO of El Paso Water.

When Ed Archuleta first came to the utility in the late 1980s, El Paso was facing a bleak future in water management—including predictions the city would run out of water by 2009.

Archuleta, former president and CEO of the utility, spoke about the challenges El Paso faced when he first arrived.



The Kay Bailey Hutchinson Desalination Plant has evolved into an industry model, attracting visitors from around the globe.

"How can you have economic development if people don't have water," he said. "Water means public health, water means security, but it also means economic development. This city was trying to find ways to provide economic development, but we had this issue

CONTINUED PAGE 18 | anniversary

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# Texas Strong

BY BRUCE CURTIS  
texas section chair

My fellow Texas AWWA members, by the time this column is published in the next publication of Texas H2O, most of us will be enjoying the more tolerable temperatures the fall season normally provides us here in Texas. Also, most of us Texans will by now have moved on from whatever minor adjustments or temporary inconveniences we had to endure from the devastating effects left behind by Hurricane Harvey after it viciously struck our Texas coastline in late August. However, for many of our fellow TAWWA members, friends, neighbors and loved ones who are located in our Texas coastal cities—they are likely still enduring and/or suffering the stinging reality that the aftermath of a hurricane can cause a community caught in its path.

Sadly, some victims paid the ultimate price with the loss of their life. Other dramatically impacted victims lost entire homes or businesses (due to severe flooding issues or from the hurricane's destructive 100+ mph winds), forcing them to uproot their entire lives and relocate to new locales or surroundings.

As with any catastrophic event, there will always be an abundance of press coverage regarding the heartbreaking stories involving the pain and suffering imposed upon the victims of such events. Regrettably, lesser known or less widely publicized will be the numerous examples that



**BRUCE CURTIS**  
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involved heroic efforts by the countless individuals who rose to the occasion and provided

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PAGE 30 | letter  
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# Disasters are Local

BY MIKE HOWE  
tawwa executive director

All disasters are local. When you look at the impacts of Hurricane Harvey on the Coastal Bend and then so much of East Texas, this statement becomes even clearer.

Earlier this year we recognized that it had been a long time since we had a major hurricane. In that same period, many utility staff may have moved on. Additionally, some utility staff may have never experienced a major storm event.

To meet this need, through our TXWARN program, we developed two workshops for August with a scenario of a hurricane impacting the Coastal Bend and Central Texas, and offered these workshops in Corpus Christi and Galveston. The first workshop was Aug. 18 in Corpus Christi and was well attended. The next workshop was the next Friday, Aug. 25, in Galveston. We had to cancel that workshop—Harvey showed up and changed the next two weeks for so many.

With landfall of Harvey on Friday, Aug. 25, TXWARN shifted into full gear for the next 11 days. With more than 1,150 utility members, TXWARN is the go-to operation for mutual aid response and recovery for utilities and we take this responsibility very seriously.

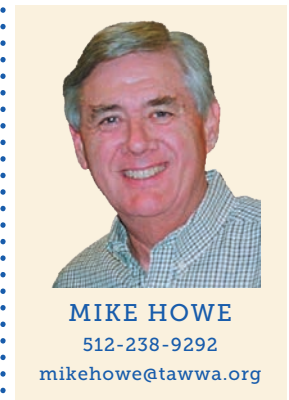
As utilities began to make damage assessments on

Saturday, we started to get calls for resources and utility team support. As the day wore on, we started making contacts and moving resources. Sunday morning brought additional requests for resources, including a call from a third party utility member who was in limited contact with Nueces County WCID No. 4 in Port Aransas.

Port Aransas was the site of first landfall of Hurricane Harvey, and the water system was severely damaged.

I was able to reach Steve Clouse with the San Antonio Water System who quickly agreed to develop a response protocol that evolved that same day into a first team of more than 22 utility staff and equipment. By just after 6 p.m. on Sunday, the SAWS teams departed for Port Aransas to begin what would be a multiday recovery operation beginning daybreak, on Monday, Aug. 28. Additional crews would also arrive on Monday to support the first team. When the work was done later in the week, SAWS had rotated three teams in and out of Port Aransas.

During the same time period, SAWS also sent teams to Rockport and as they eased out of Rockport, Austin Water eased in to complete the recovery work in Rockport. Also, other utilities such as Trinity River Authority sent teams to Port Arthur and then Brazoria to help with recovery efforts. We also worked closely with Texas Rural Water Association, which had some generators available and was willing to respond to TXWARN requests along with some of their member



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# Texas Section Leaders Meet Senator Cornyn



TAWWA leaders meet with Senator John Cornyn to discuss infrastructure funding and water issues during the AWWA Fly-In to Washington, D.C. in March 2017. From left: Charlie Maddox, Dave Scholler, Jennifer Elms, Senator Cornyn, Daniel Nix, Bruce Curtis and Bill Smith.



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# Water Rates Rise Amid Population Growth, Extreme Weather, Aging Infrastructure

**M**edian user charges for public water utilities in Texas rose 6.7 percent to \$64 per month in fiscal year 2016 as utilities sought to offset weakening sales and provide enhanced financial capacity for infrastructure costs, according to Fitch Ratings. The average annual rate increase in the years 2012-2015 was only 3 percent.

"Texas water utilities operate in a challenging environment that pits the needs of a growing population against the trials of extreme weather,"

said Gabriela Gutierrez, Director of U.S. Public Finance. "As a result, water supply and infrastructure needs can be difficult to plan for."

Adjustments to rate structure are one option utilities have to combat lower revenues during times of drought and wet weather, which are becoming more prevalent. Sometimes that means the addition of a flat fee to customer bills, in addition to usual charges for use. Texas water rates remain generally affordable at

CONTINUED PAGE 24 | water rates

4.5 MG | San Antonio Water System  
San Antonio, TX

(2) 10.25 MG | N. Harris County Regional Water Authority  
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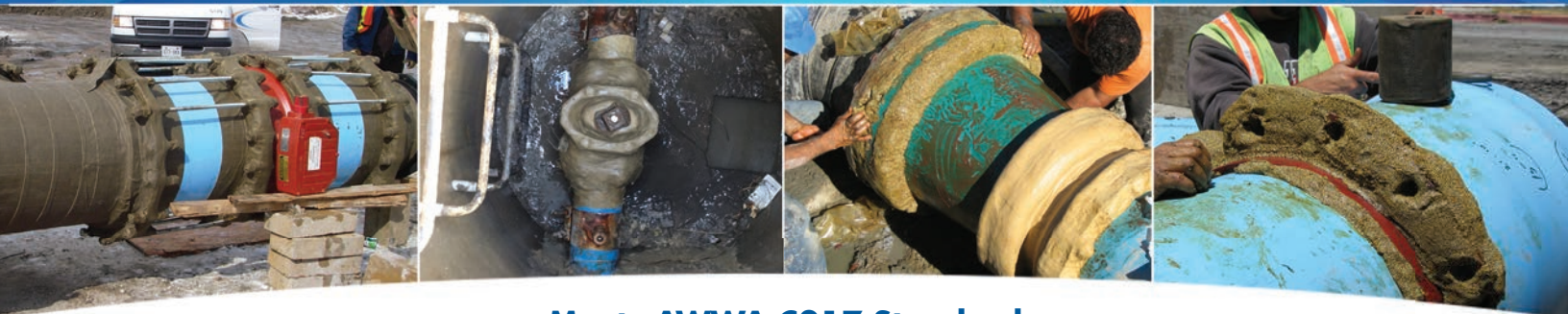
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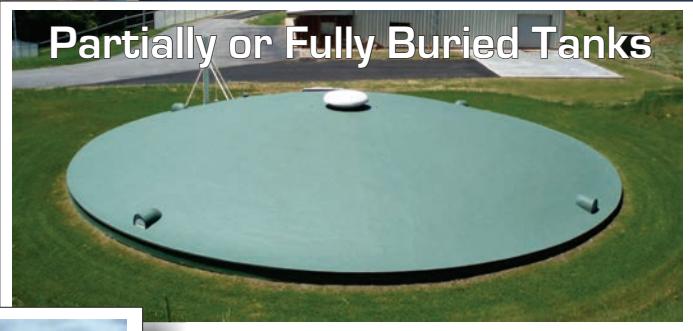
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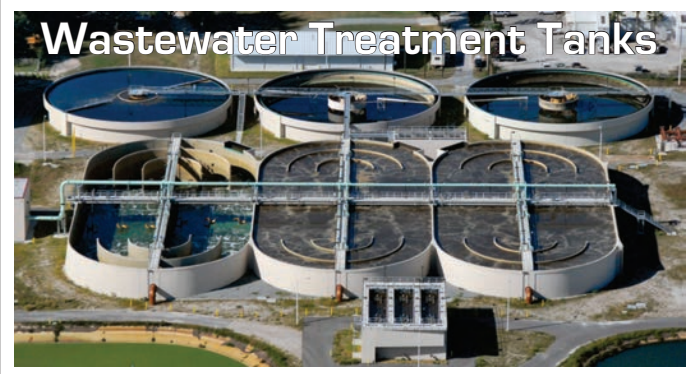
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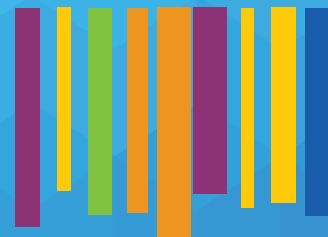
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- ★ 10Th Annual National AboveStorage Conference at Moody Gardens Hotel, Seven Hope Blvd. Galveston, TX on September 13-14, 2017 ★
- ★ WaterPro 2017 Conference at 2500 East Second Street, Reno, Nevada on September 18-20, 2017 | Booth No. 305 ★
- ★ WEFTEC 2017 Conference at McCormick Place 2301 S. King Dr. Chicago, Illinois on September 30 - Oct 4, 2017 | Booth No. 3208 ★

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CONTINUED FROM PAGE 3 | anniversary

that we were known as the city that might run out of water."

Since opening in 2007, the groundbreaking KBH Desalination Plant has produced 17 billion gallons of



Enviro Water Minerals' concentration system processes the diluted chemicals manufactured in the plant. They are then concentrated to commercial strengths.

water and played a pivotal role in building up El Paso's resiliency to droughts while meeting the water needs of a growing population. "The plant is a unique asset to this community that sets El Paso apart; it is a part of the story of the innovation here in El Paso," Mayor Dee Margo said.

"This stands as a great example to the rest of the arid west and is an essential component of El Paso's portfolio of water resources to help sustain the thriving local economy and the military operations at Fort Bliss," said Guy Carpenter, president of the national WaterReuse Association.

The KBH Desalination Plant has also become a model, attracting visitors from around the globe, including from as far away as Brazil, Israel, China, Iraq and Sudan. Many of these countries are also facing more frequent droughts and other serious water supply challenges.

CONTINUED PAGE 20 | anniversary



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**EWM partnership on concentrate management**

The day's events featured tours of the desalination plant and the new neighboring facility operated by Enviro Water Minerals that will take the plant's brine concentrate—which would otherwise go through a deep well injection process—and turn the salts and minerals into industrial-grade commercial products.

EWM calls it the first full-recovery desalination facility. As part of a utility partnership, EWM will then sell fresh drinking water back to the utility. At full capacity, EWM has the ability to produce 2 million gallons per day.

By changing how El Paso Water manages concentrate, the EWM partnership may help position the utility to expand the desalination plant. The biggest barrier to expansion, so far, has been concentrate management.

**Research forum looks to the future**

Central to the day was a research forum, in which water industry experts provided an outlook for desalination and described obstacles.



Water plant Senior Technician Jose Ronquillo (second from left) shows feed water piping that feeds the reverse osmosis booster pumps at the KBH Desalination Plant.

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Researchers from a number of regional universities also convened to share results of work either underway or completed at the Consortium for Hi-Technology Investigations in Water & Wastewater (CHIWAWA) research laboratory, which is housed inside the desalination plant.

Paul Choules, president of the Texas Desalination Association, spoke about taking advantage of the lower costs of energy in Texas. The Texas Coalition for Affordable Power released a report this summer on the declining costs of energy in Texas and credited a competitive market; use of wind, solar and nuclear power; and the price of natural gas as major reasons.

"The reality is in the state of Texas we should be able to desalinate cheaper than anywhere in the world, and one of the major reasons for that is the cost of energy," Choules said.

Carpenter said that for inland desalination applications, brine management is the chief barrier nationwide. He said utilities will continue to contend with the expensive options for removal, such as evaporation, thermal brine concentration and deep



Lucy Mar Camacho, (center) an assistant professor in environmental engineering at Texas A & M University-Kingsville, explains her research in advances in membrane distillation for water desalination to visitors at the KBH Desalination Plant.

well injection.

Barbara Martin, director of engineering and Technical Services for the American Water Works Association, noted there are a few technical barriers

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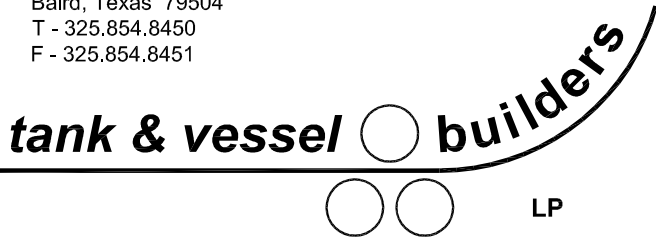


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CONTINUED FROM PAGE 21 | anniversary

that need to be overcome before more widespread use of desalination can be adopted in the industry.

Martin said she was pleased to learn that many researchers, particularly through the CHIWAWA lab and in the EWM project, are working on the challenges of residuals management and concentrate disposal. She also commended researchers who were tackling how best to improve membrane treatment. Research presentations delved into self-cleaning filters, microfiber cartridges, and electro dialysis among options to improve the membrane filtration process.

Martin also acknowledged that another pending barrier is that of a skilled workforce with many retirements expected in the coming year across the utility sector.

"The great thing is EPWater and others in the field are pushing the envelope and doing that research and finding solutions, so that we can provide a blueprint for utilities to follow and hopefully increase the use of



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desalination technology in the future," she said.  
 "The research underway here will shape the future of desalination for the nation," Archuleta said.



Water industry experts spoke about the future of desalination. The experts were (from left) Ed Archuleta of Water Initiatives of the University of Texas at El Paso, Paul Choules of the Texas Desalination Association, Guy Carpenter of WateReuse, Barbara Martin of American Water Works Association and Kristan VandenHeuvel of Water Environmental and Reuse Foundation.



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CONTINUED FROM PAGE 10 | water rates

1.4 percent of median household income—below both the national median of 1.7 percent and Fitch's affordability threshold of 2 percent.

Changes to rates made during fiscal 2016 resulted in a 9.6 percent rise in operating revenues for the state's water utilities, even as consumption remained flat. That resulted in improved financial metrics including debt service coverage and days cash on hand.

However,

increasing revenues and financial metrics have not eliminated the need for debt, and leverage levels have risen accordingly. Many utilities will need to tap the debt markets to cover their investments in water supplies and regulatory mandates around infrastructure.

Extensive capital will be required to accommodate the state's growing population, which is projected to increase 70 percent by 2070. Earlier this year, the Texas Water Development Board identified approximately 2,500 water management projects costing a total of \$63 billion through 2070 that would be necessary to meet those needs during times of extreme drought.

Aging infrastructure will also require investment, at least some of which will be backed by debt. Several Texas cities had infrastructure challenges that tested their compliance with the federal Clean Water Act, requiring intervention from regulators. Local water utilities in San Antonio, Houston and Corpus Christi are either under a consent decree from the EPA or are negotiating for an agreed order. Fitch believes other utilities—particularly older, larger systems—may face

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noncompliance in the future.

Despite these challenges, the 2017 legislative session was relatively uneventful for water issues. Several bills affecting water and sewer utilities were vetoed on the basis that they could be performed without statutory mandates. The special session that began on July 18 also does not contain any topics related to water or sewer issues.

The full report, "Texas Water and Sewer Peer Review," is available at [www.fitchratings.com](http://www.fitchratings.com).

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CONTINUED FROM PAGE 6 | executive director report

requests.

As the list of requests and responses, plus the extraordinary offers of utilities around the state and around the country went on for the next 11 days, we also worked closely with the State Operations Center and TCEQ sourcing teams and resources to respond to all areas impacted by Harvey.

As TXWARN, including the amazing Clay Avery who was managing any number of utility responses, continued to move resources as needed, it became horribly clear that the damage and flooding in much of the coastal area from Corpus Christi to Beaumont was as bad as we had ever seen. Since TXWARN was created in 2005, we had never seen such damage to communities and water and wastewater utilities. We all

thought Hurricane Ike would forever test our systems, but Harvey was in a whole new league.

The stories of resilience in Houston and the ability of cities and towns like Beaumont to recover from the worst situations continue today. The good news, if there is good news as communities still face many months of recovery, is that the coordination for utilities between the federal government, the state, the TCEQ, TXWARN and other groups who are prepared to respond has never been better. It wasn't perfectly seamless, but we were in the middle of the worst major disaster to ever hit Texas.

If there was a "tell" about how successful TXWARN worked, it was our ability to move major response teams with resources very quickly and even before the paperwork moved to the state. We actually had a phone call with the folks at the State EOC where we went through the requests vs. responses to clear those that were still "paper" requests to "boots on the ground" requests/solutions just to get caught up. But, that is how things go during a disaster. Harvey was AND is a disaster. It will take months, maybe years, for



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every system to fully recover.

We created TXWARN out of the need to make sure that expert utility staffs were available to respond to utilities needing help when needed. From the Department of Homeland Security to the TCEQ, to the State Operations Center, to the majority of utilities in Texas, TXWARN is the "go-to resource" to find and deploy utility-specific resources to help those utilities who are in their worst situations and need help. It's mutual aid from those who speak utility. It's that simple, but only because you, who are part of our voluntary system, pledged to make it work.

We are not the heroes in this process. It is you, meaning every utility who says, "we are here and willing to respond," that make our system work. And that is because each of you knows that fundamentally every Texan deserves to have safe drinking water, every day, no matter the situation. When the worst of the worst occurs, utilities will help their fellow utilities.

This means a lot to me for any number of reasons, but most importantly, because it affirms what I knew when I worked for Austin Water and through my 20 years with the Texas Section AWWA—we are one. We are here to protect public health.

The response during Harvey proved what I knew when we created TXWARN. It is all about utilities helping utilities. And, don't forget: all disasters are local. 🗺️

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Kevin Auguste Houston, TX	Trina Francis Houston, TX	Harry Isensee Houston, TX	Dynellya McCoy Georgetown, TX	Marisol Prater Forest Hill, TX	Heather Tucker Bastrop, TX
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Haddijatou Bayo Dallas, TX	Roland Garcia Austin, TX	Larry Johnson Houston, TX	Alan Moon Bellaire, TX	Lizandro Ramirez Garciasville, TX	Veronica Vaughn Dallas, TX
Susie Blake League City, TX	Thuy Geraci Houston, TX	Marguerite Johnson Spring, TX	Angelica Morales Dallas, TX	Nidhi Raut San Antonio, TX	Alfred Wadee Beaumont, TX
Julian Boddy Houston, TX	Bill Glass Wylie, TX	Ravi Kaleyatodi Houston, TX	Jason Mote Houston, TX	David Rhone Wichita Falls, TX	Michael Watkins Arlington, TX
Dustin Bowerman Greenville, TX	Danielle Gross San Antonio, TX	Ricky Kettler Texas City, TX	Suparna Mukhopadhyay College Station, TX	Sheila Rushing Benbrook, TX	William Weidman Dallas, TX
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CONTINUED FROM PAGE 4 |  
letter from the texas section chair

enormous levels of assistance, care and hope to their fellow man in a time of dire need. Inspiring stories that cite examples of courage or leadership during and in the immediate aftermath of an event such as Hurricane Harvey are always less known to most of us non-victims. Even so, to the actual victims who were positively impacted by these particular good deeds or with the small circle of individuals who actually witnessed these exemplary efforts, to them, these real-life heroes and leaders will always be remembered and revered.

As chair of TAWWA, I am so proud to hear of the many positive examples of how fellow members (utility members and service provider members alike) responded so well with their efforts to help those in need. For example, the TXWARN (Texas Water/Wastewater Agency Response Network) program greatly exemplified its importance and value to those utilities who were so dramatically impacted by this

catastrophe. The great vision and foresight of those who created and participate in this program was immensely successful. Sadly, it requires a catastrophe for the positive intent of the program to be revealed. Yet, it's in times of a crisis that the sincerity of who your friends really are can be so profoundly revealing. Even more revealing in a time of crisis is with how great leadership is not always automatically shown, but rather with how it is so naturally displayed.

[NOTE: For those less familiar with TXWARN, its mission is to support and promote statewide emergency preparedness, disaster response and mutual assistance matters for public and private water and wastewater utilities. For more information on TXWARN, go to [www.txwarn.org](http://www.txwarn.org).]

My sympathies go out to the many Texans who were victims of Hurricane Harvey. Additionally, my sincere, heartfelt thanks go out to the numerous first responders and to the many faceless, unnamed heroes who displayed their courage and leadership so selflessly during this crisis. While no catastrophe should ever be welcomed, this unfortunate crisis revealed to me how proud I am to be a TAWWA member and with how proud I am of my fellow Texans! Whether you were negatively impacted or not by this catastrophe, I hope you feel the same way, too. 🙏

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Oct 12	NCT October Meeting	11:15 am	Texas Star Conference Center Eules	www.tawwa.org
Oct 17	CAC Pints for People	5:30-8:30 pm	Adelbert's Brewery Austin	www.tawwa.org
Oct 20	NCT Drinking Water Seminar	8 am-5 pm	Petroleum Club of Fort Worth Fort Worth	www.tawwa.org
Nov 2	CAC/WEAT Fall Social	6-9 pm	Easy Tiger Austin	www.tawwa.org

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Check the Section's website, [www.tawwa.org](http://www.tawwa.org), for the latest information on Section activities.




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