TESTIMONY OF
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On Behalf of the
Alabama Rural Water Association
National Rural Water Association

Before the
SENATE COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY
SUBCOMMITTEE ON RURAL DEVELOPMENT AND ENERGY

On
"State of Rural Infrastructure: Emergency Response, Recovery, and Resilience"

July 10, 2024

Good afternoon, Chairman Welch, Ranking Member Tuberville, and esteemed members of this Committee. I am deeply honored to be here today, offering my testimony concerning the "State of Rural Infrastructure: Emergency Response, Recovery and Resilience."

Before I proceed, I would like to extend my personal gratitude to Senator Tuberville for his invitation and, more importantly, his stalwart leadership and advocacy for Alabama's rural water and wastewater sector.

My name is Mark Bohlin. I am the General Manager of the Perdido Bay Water, Sewer, and Fire Protection District (hereafter: 'the District'), a rural water system located in Southeast Baldwin County, Alabama. Additionally, I am honored to represent the Alabama Rural Water Association (ARWA) where I currently serve as President of its 10-member board. I represent District 9, including Baldwin, Mobile, and Washington Counties, which are comprised of 41 community water systems that provide service to 253,703 homes and businesses serving a population of 634,258 Alabamians. The ARWA currently provides services to 502 community water systems in the state, serving a population of 5,077,100 Alabamians, of which 443 are members of ARWA at present. The ARWA is a member of the National Rural Water Association (NRWA) that represents over 31,000 communities within all 50 states and Puerto Rico.

Currently, the District covers an area stretching from the Town of Elberta east to the Florida state line, south to the Perdido Bay, and north to the Blackwater River. We provide drinking water to the communities of Lillian, Josephine, the Town of Perdido Beach, and areas of Elberta. Our District has 4,400 water connections, serving a population of 13,200. This includes unincorporated areas, making us eligible for U.S. Department of Agriculture (USDA) Rural Development (RD) assistance under their 10,000-population cap.

The District is a Non-Profit Organization that was incorporated in August of 1973 to deliver clean and safe drinking water to the communities of Lillian and Perdido Beach. The District started delivering water to its first 600 customers in 1978. Over the years the District expanded to provide services to the community of Josephine and unincorporated areas of Elberta.

Currently, the District has three wells with a pumping capacity of 2,520,000 gallons of water per day and a storage capacity of 1,000,000 gallons. The District is governed, managed, and operated by a 5-member Board of Directors and a staff of eleven employees, one of which, if all goes to plan, will be the first graduate of ARWA's Apprenticeship Program later this year.

Like so many rural water systems that were formed years ago, it was with the assistance of the Farmers Home Administration (FmHA) which was the precursor of USDA Rural Development. The District was born from a 40-year loan of $736,300 and a grant of $176,000 provided by the FmHA.

Fast forward almost 50 years and the District continues to take advantage of the affordable low interest rates provided through the USDA Rural Development Water and Environmental Programs (WEP). In the last 8 years**,** we have replaced all the meters in the District, renovated and painted all 3 of the District's elevated water storage tanks, installed new lines, bought new equipment and we are currently in the process of developing another well to provide an additional 1,000,000 gallons of water to the water users of the District.

State of Rural Water Infrastructure

The USDA Rural Development Water and Environmental Direct loan portfolio is currently $14.15 billion with 10,982 projects. These are 40-year term loans with 33% of the portfolio with less than 10 years from closing and 38.8% with less than 20 years from closing. Throughout the life of these projects, additional funding is needed to upgrade and modernize the utilities. This high-performing loan program has and continues to provide tremendous investments and returns for the federal government and more importantly, the rural communities and residents they serve. With a

delinquency rate of only 0.35%, this stable portfolio of investments has improved the public health and economic vitality of rural communities.

Providing adequate annual appropriations to support the WEP programs will ensure the aging portfolio has access to affordable financing necessary to upgrade and modernize their utilities. The current backlog for WEP funding in the nation is $2.024 billion and $12.74 million in Alabama. Sufficient grant funding is also necessary to blend with the direct loan program to sustain affordable rates for service in lower-income communities.

In my opinion, our partners at the Alabama Department of Environmental Management (ADEM) have done commendable work in ensuring that both American Rescue Plan Act (ARPA) and Infrastructure Investment and Jobs Act (IIJA, also known as BIL) funds are directed toward our rural systems as much as possible. The Alabama Rural Water Association (ARWA) has closely collaborated with them to bring these projects to fruition.

However, it's important to note that this positive trend in Alabama is not necessarily reflective of the national situation. Predominantly rural states, like Alabama, benefit from a political landscape that is more conducive to directing funds to rural areas. This unique alignment has facilitated a stronger focus on rural infrastructure, unlike the broader national trend. Our strong relationship with ADEM and the prioritization of rural development have been crucial in this regard.

As of early 2024, utilizing IIJA and ARPA funding, 646 projects have been awarded funds across all 67 counties in Alabama. These projects were selected through a needs-based process to aid disadvantaged and rural communities that would otherwise face further deterioration. ADEM estimates that $1.105 billion of the $3.3 billion needed for necessary water infrastructure projects has been accounted for, not including ongoing federal grant allocations from the Alabama Department of Economic and Community Affairs.

This effort is ongoing, and providing clean water to all Alabamians remains a priority for Governor Ivey. However, many projects remain unfunded, with additional funding anticipated over the next few years to meet the needs of rural water and wastewater systems in Alabama and nationwide. Despite significant investments, a substantial portion of the available funds are often absorbed by larger systems. Historical trends indicate that, during typical funding rounds, most funds are directed toward and utilized by larger entities. Once the allocation of these infrastructure 'catch-up' dollars is completed, we can expect a return to these historical funding patterns.

It's crucial to emphasize that small and rural communities heavily depend on the Rural Development Water and Environmental Programs (WEP) to maintain and enhance their utilities and affordable services. These communities often lack the resources and

capacity to compete with larger systems for funding, exacerbating the gap between their needs and the funds they receive. Ensuring adequate resources are allocated to these programs is vital to support the sustainability and development of essential services in rural areas. Without sufficient funding, these communities face continued infrastructure deterioration and increased challenges in providing clean and safe water to their residents.

According to the most recent United States Environmental Protection Agency's (EPA) Drinking Water Infrastructure Needs Survey and Assessment (DWINSA) gathered from information collected in calendar year 2021, a twenty-year capital improvement assessment totaled $625 billion in needs for drinking water alone. While this is a valuable tool, and ARWA was a participating contractor with ADEM to conduct the assessment, unfortunately, the survey only targets a small number of water systems, and the final report aggregates data in categories for communities with populations of 3,300 and under, 3301 to 100,000 and above 100,000. Currently, there is no credible source of data to capture the total needs for both drinking water and wastewater infrastructure for rural communities.

We would ask this Committee to consider requesting the USDA Economic Research Service to issue a report to survey the actual needs of all rural communities eligible for RD WEP funding**.**

Other financial and sustainability challenges on the horizon include the regulatory landscape with the significant costs associated with treatment of PFAS, Cyber Security assessments and enhancements, workforce development, compliance with the lead and copper rule, and other current and forthcoming federal mandates. The inflationary cost of equipment combined with supply chain issues continues to plague small water utilities. This has caused delays and cost overruns for many projects.

All of these factors impact smaller rural utilities with limited financial resources more than their urban counterparts. Recent reports, including a 2023 report from the USDA Economic Research Service, have indicated the U.S. rural (nonmetro) population is growing again. If this trend continues, rural utilities will have to expand their services to cover this growth.

Rural Water Workforce Development

Supporting the country's public drinking water and sanitation systems is a highly skilled, diversified labor force of water utility workers. These professionals perform a wide range of tasks, from operating heavy equipment to repair broken lines, managing toxic chemicals, maintaining public records, conducting laboratory tests, operating process controls, reviewing engineering plans, and monitoring biological treatment processes. They comply with federal environmental and labor standards and manage complex

engineering and construction projects. The exact duties depend on the size and complexity of the water utility, with smaller utilities requiring versatile workers who handle multiple roles, while larger utilities have larger staffs with departmentalized teams.

The water utility workforce is trained in emergency management response and safety, available during emergencies like floods, hurricanes, earthquakes, and intentional acts of sabotage. Given the inherently dangerous nature of their work, such as operating heavy machinery and handling large quantities of toxic chemicals, ensuring their safety is paramount. All water utilities operate 24/7, including holidays and weekends.

Safe and effective water utility management is vital to rural America and the nation. With over 50,000 community water supplies in the country, 91% serve populations under 10,000, and 55% serve populations of 500 or less. Employment data indicates that up to 50% of this workforce will leave the industry within the next 10 years. Rural water and wastewater utilities urgently need a pipeline of skilled workers to ensure clean, safe water and maintain essential infrastructure.

Since 2016, the National Rural Water Association, State Rural Water Associations, local small and rural community water utilities, and federal agencies, including the U.S. Department of Agriculture, U.S. Department of Labor, and the U.S. Environmental Protection Agency, have successfully collaborated to establish the first nationally recognized Registered Apprenticeship Program for water and wastewater system operators (O*NET-SOC CODE: 51-8031.00). This initiative has created jobs in rural America and, as of this year, 36 State Rural Water Associations, including Alabama and Vermont, have obtained federally approved Registered Apprenticeship Programs. Over 600 apprentices have enrolled or graduated, marking significant progress.

The NRWA Water and Wastewater Operator Apprenticeship Programs include 4,000 hours of on-the-job training with a one-to-one mentor-apprentice ratio and 288 hours of technical instruction over two years, with a suggested wage increase every six months. Graduates often serve as public health officials, responsible for complying with federal regulations and ensuring safe drinking water and sanitation services.

The program's activities include but are not limited to learning system operation basics, safety procedures, operating heavy equipment, installation and inspection of water lines, leak detection, quality control, and compliance with federal, state, and local regulations. The Apprenticeship Program has enhanced workforce participation and retention, protected federal investments in water systems, and modernized workforce development in the industry.

Workforce challenges are particularly acute for small community water systems, many of which operate with minimal staffing and struggle to comply with complex federal

regulations due to a lack of qualified operators. Our Apprenticeship Program has seen significant growth but is constrained in very small communities with insufficient capacity to employ or mentor apprentices.

In Alabama, the Apprenticeship Program, finalized with the Alabama Office of Apprenticeship in February 2020, has seen promising developments despite pandemic-related delays. We now have 14 participating employers and have successfully placed 11 apprentices at 6 utilities. This program raises public awareness about water sector careers and supports newcomers with structured training and incentives; the first of its kind.

The District was one of the first participants in ARWA's Apprenticeship Program, and in fact, is slated to have the very first graduate of that program in the next few months. The process has been very successful for us so far, and we intend to continue to participate in the acquisition and training of new employees for years to come.

To address these workforce challenges, we urge the Committee to incorporate financial resources and policies into the 2023 Farm Bill to expand and enhance this successful Apprenticeship Program. Prioritizing this initiative is essential to protect the federal investment in rural America's water and wastewater systems, ensuring these critical services remain sustainable and effective.

Emergency Response, Recovery, and Resilience

The remaining portion of my testimony will focus on lessons learned from disaster and recovery efforts including my personal experience and make recommendations for the Committee's consideration. I will also speak on the direct assistance provided by the Alabama Rural Water Association and the Vermont Rural Water Association for disaster assistance.

Due to the geographical location of the District, we are prone to tropical weather and hurricanes. During my 25-year tenure serving as the General Manager of the District, we have been through numerous tropical storms and 2 direct hits by Hurricanes Ivan and Sally. With each event, we made plans and preparations to deal with the disaster.

NRWA and State Rural Water Associations serve as the lead entity in disaster recovery in many states necessary to restore and maintain critical water and wastewater services in small and rural communities and have done so for decades. We stage and deploy experienced staff and equipment for each event.

Unfortunately, there has been no dedicated federal funding to enhance or expand this activity beyond the extremely limited assistance currently provided under the USDA Circuit Rider program which is only limited to disaster recovery activities to systems

under 10,000 population. After service is restored, this federal assistance is terminated. In addition, only a small portion of this existing contract is available for disaster assistance.

To date, most of the disaster recovery costs have been absorbed by Rural Water State Associations. FEMA does not consistently reimburse direct costs. This is in stark contrast to the electric power industry.

Continuity of essential water services is required to maintain the public health and economic vitality of communities during and after a disaster. The current disaster assistance provided through the Circuit Rider Program is designed to aid after a disaster incident takes place. Equally important are the preventive measures, resiliency planning and design, response, and recovery activities, training, etc. Providing an all-hazards approach is necessary to adequately identify and address all vulnerabilities and threats to the water utility.

Establishing dedicated, on-site, experienced staff to provide these services to rural utilities will directly benefit the public. Targeting assistance to rural communities that lack the financial resources and staff capacity to adequately prepare and restore critical services would help the residents who will be impacted the most and experience a longer recovery time.

ARWA and NRWA have advocated for and testified numerous times for expanded authorities and assistance to be provided to rural communities over the last two years. Our recommendations are directly derived from the water sector field staff with decades of experience.

We are grateful that Congress responded with pending bipartisan legislation in both the House and Senate. In the Senate, S. 2917, the “Rural Water System Disaster Preparedness and Assistance Act” was introduced by Senators Cortez Masto and Hyde-Smith and cosponsored by Senator Baldwin.

If accepted within the final 2023 Farm Bill, this comprehensive approach will provide additional authorities for pre- and post-disaster assistance. Additional authorities to enhance preparation with the development of vulnerability assessments, disaster action and mitigation plans, geographic mapping, and hardening facilities, will all decrease potential disruptions and physical damage. Hardening facilities can provide additional non-natural disaster benefits including protection from physical and cyber-attacks. To address administrative burdens, post-disaster efforts would include direct assistance with the entire application process for available federal and state funding and the necessary reporting requirements.

Unfortunately, many small rural systems have limited capacity with one full-time or part-time operator responsible for all operational activities of their system. This legislation also targets assistance to these vulnerable communities that lack the financial and human capacity to adequately protect the public health of their residents without this direct assistance.

As previously mentioned, State Rural Water Associations have been providing disaster assistance for decades. The ARWA and other state rural water associations, especially the 5 Gulf States, have extensive, valuable experience providing direct recovery, response, and restoration assistance.

What began as individual state rural water associations assisting and coordinating mutual aid agreements between utilities within their states has evolved into a well-organized and robust collaboration. Today, state rural water associations collectively own, service, and share a diverse array of equipment and emergency response tools. Additionally, this collaboration has developed a small army of trained response professionals who specialize in water and wastewater response. This network significantly enhances Rural Water's ability to respond swiftly and effectively to emergencies, ensuring that resources and expertise are readily available where they are most needed. The federal authorities encapsulated in S. 2917 will formalize and enhance this promising effort.

After the devastating impact of Hurricanes Katrina and Rita, NRWA established a permanent standing Emergency Response Committee. This committee meets regularly to coordinate and review response efforts nationwide.

Additionally, an annual on-site training event, hosted by different states, offers both classroom and hands-on training essential for the education of Rural Water Association first responders. This training is then disseminated to individual states, where the knowledge is shared with local water system managers, employees, and other first responders, thereby impacting thousands of emergency responders across the country and Puerto Rico.

In recent years, the NRWA Board of Directors has provided non-federal funding to bolster state association efforts, enhancing their capacity to respond effectively to emergencies and support local communities. While Rural Water's collective emergency preparedness and response activities have significantly improved over the past few decades, additional resources and authorities made available through legislation such as S. 2917 would offer exponential improvement opportunities. This legislation would not only enhance response efforts but also provide resources to minimize future impacts on utilities and ensure efficient and rapid recovery.

Please find additional information and examples of response activities appended to this written testimony as 'Appendix A: NRWA Emergency Response Highlights'.

I will now turn to my direct experience dealing with disaster and recovery activities.

Hurricane Ivan

In preparation for Hurricane Ivan, we secured all equipment, fueled our vehicles, and filled our elevated water storage tanks to maximum capacity. As the storm's arrival became imminent, we shut off the water tanks and evacuated as ordered. After the storm passed, we returned to find only three employees had stayed in the area.

We connected an emergency generator to one of our wells to restart water pumping and began inspecting the system for damage and water quality. Many property owners along the bay had evacuated without turning off their water, causing docks and attached water lines to wash away, leading to water freely pumping into the bay. This placed a tremendous demand on the system, causing our pumps to run continuously.

Despite having a 500-gallon tank of diesel fuel, it was located 7 miles from the generator, requiring constant refueling efforts. One employee (myself) was dedicated solely to transporting and refueling the generator, while the other two employees worked to shut off water to evacuated properties. The storm had altered the landscape in a dramatic fashion, making it difficult to locate assets.

After a week, we restored operations to a somewhat normal state, with power and full staff returning. Services were either shut off or repaired, and normal pumping resumed. However, the cleanup phase presented new challenges. Contractors and outside help arriving to remove debris inadvertently damaged our infrastructure, including meter boxes, valves, flush stands, and fire hydrants. We then faced the task of replacing services, fixing main breaks, and reinstalling damaged equipment.

Hurricane Sally

Hurricane Sally differed significantly from Hurricane Ivan in that it was initially projected to be a tropical storm. We prepared as we did for Hurricane Ivan by securing and boarding up everything, fueling all vehicles and equipment, and filling our elevated water storage tanks to maximum capacity. However, we did not valve off the water storage tanks as there was no evacuation order, given it was expected to be a tropical storm.

As we waited for the storm to pass, Sally unexpectedly intensified into a hurricane, wreaking havoc on the Gulf Coast. Power outages, fallen trees, and destroyed structures were widespread. Unlike Hurricane Ivan, the extent of damage from Sally caught us off guard.

Once the storm had passed, we began the process of starting generators and inspecting the system for damage and water quality. This time, we had the advantage of

a full staff available to address arising issues. Additionally, we received full assistance from the Alabama Rural Water Association, which significantly bolstered our response efforts.

As soon as the storm passed the District was contacted by Rob White, the Executive Director of the ARWA, and he wanted to know the status of our system and how the ARWA could help. After speaking with Rob, we decided to offer our facility as the onsite command center for emergency response efforts. The ARWA, in cooperation with NRWA, Oklahoma Rural Water Association, Louisiana Rural Water Association, Mississippi Rural Water Association, Georgia Rural Water Association, and Florida Rural Water Association mobilized and brought their emergency response trailer, generators, and manpower. The ARWA set up a command center at the District's office from which to conduct coordination meetings with the Alabama Emergency Management Agency, as well as communicate and deploy resources to surrounding affected water and wastewater systems. With the mutual aid of the Rural Water Association, the District was able to identify and fix all deficiencies in the system and regain normal operations in a week. All the Rural Water Associations that came and offered aid in a time of need stayed for the duration to ensure all the systems in the area had services restored.

Vermont Rural Water Association: 2023 Flooding Response

The Vermont Rural Water Association (VRWA) played a crucial role in addressing the severe impacts of the July 2023 floods on water and wastewater systems throughout Vermont. Their swift and comprehensive response highlighted the expertise, dedication, and resilience of rural water professionals in managing emergency situations and supporting affected communities. Affixed to this testimony is Vermont Rural Water's official Flood Response Report with highlights below:

Impact of the Floods

- **Drinking Water Systems:** At least 19 water systems were impacted, with several experiencing Boil Water Notices, Do Not Drink Orders, or an inability to deliver water. Water mains and sewer lines were damaged due to flooding, further complicating water delivery and treatment.
- **Wastewater Systems:** An estimated 23 wastewater systems violated permits due to the flooding, with several treatment facilities becoming flooded. The Johnson Wastewater Treatment Facility was completely destroyed, demonstrating the extent of the damage.

VRWA's Emergency Response

- **Immediate Response:** VRWA staff worked around-the-clock to assist impacted systems. Their efforts included sourcing pumps, portable treatment units, and

temporary lab/office spaces for the most severely impacted facilities like Johnson Wastewater Treatment Facility.

- **Onsite Assistance:** VRWA staff conducted inspections, needs evaluations, and sourced equipment from nearby utilities and rental companies. They set up bypass pumping, coordinated sludge pumping, and provided emergency response trailers for clean and dry workspace.
- **Mutual Aid Coordination:** VRWA coordinated a mutual aid response between towns and facilitated the delivery of essential supplies such as dehumidifiers, industrial fans, and KN95 masks. They also designed and implemented chlorination systems for disinfection.
- **Communication and Coordination:** VRWA maintained continuous communication with local, state, and federal agencies, including the EPA, Army Corps, USDA, and FEMA. This coordination ensured a comprehensive response to both immediate and long-term needs.

Lessons Learned

- **Resilience and Preparedness:** The floods underscored the importance of having well-prepared and resilient water and wastewater infrastructure. The ability of VRWA to quickly mobilize resources and coordinate responses was critical to mitigating the impacts of the floods to the systems and their respective communities.
- **Collaboration:** Effective collaboration and constant communication between local communities, utilities, and various agencies was of the utmost importance. The support from neighboring cities, like Burlington providing equipment, was absolutely essential.
- **Challenges and Opportunities:** The event highlighted supply chain challenges which can severely impact repair timelines. It also provided an opportunity to improve infrastructure resilience and emergency preparedness for future incidents.

The hard work and expertise of the Vermont Rural Water Association were instrumental in the emergency response, recovery, and ongoing resilience efforts following the July 2023 floods. Their actions restored critical water and wastewater services and reinforced the importance of resilient rural infrastructure and effective emergency management strategies.

Conclusion

In summary, I firmly believe that with additional federal support, mutual aid, effective collaboration, and thoughtful planning, we can address the challenges of emergencies and enhance the response, recovery, and resilience of rural water and wastewater system infrastructure nationwide. Our State Rural Water Associations currently provide aid at their own expense, without full compensation or reimbursement for their time and effort.

It is worth noting that the Circuit Rider Program does cover a portion of their salaries, particularly for recovery and restoration efforts. However, the scope of this support is limited, and on rare occasions, it includes application assistance. This highlights the need for more comprehensive funding to fully support the vital work carried out by these associations.

Thank you for the opportunity to testify. I am ready to answer any questions you may have.

Appendix A: NRWA Emergency Response Highlights

Hurricane Ian

ARWA Andrew Crawford and FRWA Ben Lewis set up the Starlink at the National Rural Water Command Center

ARWA Generator being delivered to Englewood

ARWA, Andrew Crawford surveying damage to a well

One of the many night time deliveries of Generators

Checking for Leaks

Georgia Rural Water Association Emergency Response

Some of the response efforts

Morning Briefing

National Rural Water Emergency Response Trailer and Truck that was utilized as the Command Center.

FRWA's numerous Emergency Response

Some of the many assets that were used.

ARWA Darrell Brewer, Delivering a Generator.

October 12th the last of our two Man deployments headed back to Alabama with two of our Large Generators.

Alabama Christmas Deployments

Water Delivery to Old Line Water Authority in Jackson, Alabama, located in Clarke County. They serve approximately 2,475 water customers. Through the Associations' efforts, Old Line Water Authority Received 432 cases of bottled water. (10,368 Bottles)

Water Delivery Wilcox County Water Authority, in Camden, Alabama, located in Wilcox County, Alabama, serves approximately 4050 Customers. Through the Associations' efforts Wilcox County Water Authority, Received 576 cases of bottled water. (13,824 Bottles)

Water Delivery City of Reform Water & Sewer Board, Located in Pickens County, Alabama, serves approximately 754 Customers. Through the Associations' efforts City of Reform Water & Sewer Board, Received 432 cases of bottled water. (10,368 Bottles)

Leaks, Repairs, and Generators


ARWA


ARWA

Emergency Response Training

Each year, members of the National Rural Water Association's Emergency Management Committee come together for a day and a half of emergency response training. This year Florida was once again chosen as the host state for this event, but with the event taking place at their warehouse in Cairo, GA. The format was simple and efficient: association members from all over the country started arriving on Tuesday afternoon/evening to be ready for a full day of training on Wednesday, and half of a day training on Thursday. Then, everyone headed home! Each day the attendees were treated to fabulous, cooked meals from the Louisiana Rural Water Associations cooking team. The training was split between classroom presentations and hands-on activities (stations) in which participants could try their hand at a variety of emergency response techniques and a variety of equipment.

Over 20 states were in attendance this year along with several members of the National Rural Water Association.

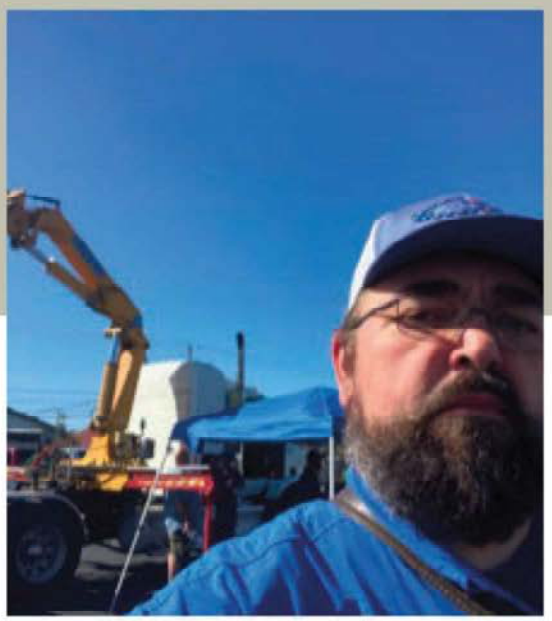
THE FOLLOWING ASSOCIATIONS WERE IN ATTENDANCE:

- Alabama Rural Water Association
- Arkansas Rural Water Association
- Florida Rural Water Association
- Idaho Rural Water Association
- Kentucky Rural Water Association, Inc.
- Louisiana Rural Water Association
- Minnesota Rural Water Association
- National Rural Water Association
- Nebraska Rural Water Association
- New Jersey Water Association
- New Mexico Rural Water Association
- New York Rural Water Association
- North Dakota Rural Water Systems Association
- Rural Water Association of Arizona
- Rural Water Association of Utah
- South Carolina Rural Water Association
- South Dakota Association of Rural Water Systems
- Texas Rural Water Association
- Vermont Rural Water Association
- West Virginia Rural Water Association
- Wyoming Rural Water Association

This type of training prepares the members of these associations "Emergency Response Teams" for the next emergency.

Alabama group demonstration the Ground Penetration Radar

Panel discussion on other states Emergency Response plans



Bill Messick at one of the demonstrations.

The Alabama guys learning about VFDs

Garry Williams, Executive Director with Florida Rural Water Association going over morning instructions.

Louisiana Rural Water Cooking Team with their Executive Director, Pat Credeur.

Pat Credeur, Executive Director for Louisiana Rural Water Association, holding up a sign with all the demonstrations' locations and safety areas.

A Story from Wyoming

Sometimes perfect storms happen. One community experienced this when their source water supply was limited due to a construction project, the treatment facility was limited in production capacity by the alternate water supply, and the distribution system had experienced several leaks. This amounted to the lower portions having very low pressure, and the higher portions of the community having no water at all. Even during those perfect storms, there is always a silver lining. Prior to the loss of water, the system had scheduled the Source Water Protection Specialist to come out and discuss protecting the springs and wells that the community relies on for drinking water. The date happened to coincide with the community running out of water and of course, the day before a weekend.

When the Specialist (also a former circuit rider and Level 4 operator) arrived, it was apparent that discussions of source water protection would be inappropriate and increasing the flow of source water to the plant, through the plant and to the community would be the order of the day. The Source Water Specialist began assisting the water treatment staff with contacting the appropriate regulatory agency for loss of pressure, assisting with the ensuing boil water order, coordinating with labs for samples, and troubleshooting the treatment process. She also delivered messages as well as meals to the field crews who were out of cell service. During this incident, the County Emergency Manager supported the community by coordinating with the water staff, supplying potable water to residents, maintaining community awareness, and sample delivery. This was the first mobilization of the county emergency management coordination center.

The treatment plant is fed primarily by a 32-mile pipeline from the springs. Wells and reservoir water are available but require the plant to be run at considerably lower flows. To meet system demands and fill the tanks, higher flows would be necessary. The pipeline from the springs wasn't sending water to the plant, and the Source Water Specialist and the water treatment staff began inspecting the line for any issues. Inspecting the line in early March is no easy task, as the area is lovingly referred to as "The Tundra". This pipeline ranges from 30 to over 100 years old. There were several air-vac valves that had corroded away or froze and broke and were gushing water. The team shut down the broken valves and began locating the remaining valves and making sure they were able to be shut down quickly if necessary. This involved shoveling frozen mud out of access manholes. By the end of day two, the spring pipeline was again sending water to the plant. Within 5 days of the initial loss of pressure, the regulatory boil order was lifted. This was only possible because of the dedication of the water treatment and distribution staff working long days and nights, the assistance of the Association staff, and the support of the County Emergency Management.

Field staff were able to keep the Executive Director of the Association up to date on assistance allowing him to relay the information to Homeland Security, the Governor's office and others seeking their assistance in transporting samples, activating our WARN system to find a lab that could do tests since fee based labs were closed for the weekend, educational information on the basics of a boil order notice and how long it takes to cure the violation which enabled them to keep press announcements accurate, elected officials in the know and the public updated as needed.

This could have been a one and done incident. This community, however, took a hard look at their infrastructure and realized they were in trouble. Low utility rates over the years had made it impossible for them to complete any upgrades to the treatment facility or distribution system. Association staff assisted the community with getting a quality rate assessment, and the community began the arduous process of increasing rates. Even with the rate increases, it was apparent that the community wouldn't be able to complete all the necessary upgrades. Again, Association staff stepped in to assist the community with applying for funding for a Master Plan and the following upgrades. The Association staff continues to work with the community developing a source water protection plan, updating their emergency response plan in response to the incident, continued assistance with funding applications and working towards sustainability.

Wildfires in Washington State

The summer of 2014 put our field staff on high alert. In the north central area of Washington State the largest wildfire our state had seen was raging with over 256,000 acres burned. All staff were ready to help. We took our cues from Mike Pendergraft, our Eastern Region Circuit Rider as this wildfire was happening in his very own backyard, literally.

Power was out in the entire Valley, our Eastern Region Circuit Rider called systems in his area to see how they were fairing. If he couldn't reach them by phone, as many phone lines were down as well as power lines he drove to their system to see where he could assist. Our circuit rider helped systems with backup power and system repairs; water testing, disinfecting, and locating broken and burnt water lines. It's also worth mentioning that the highway to the Valley was closed, so they had to take the long route around. The fire lasted almost a month, over 185 homes were burnt down.

"The most amazing thing that I witnessed through this disaster was the giving of time and equipment from surrounding communities and neighbors to help each other," said State RWA Circuit Rider. "Without them it would have been much, much worse."

We all learned firsthand how important an emergency response plan is and how important the network of local communities is. Communication is also of key importance. We were in constant communication with both of our State Senators and the Congressional Representative for the area. Our Circuit Rider was working hand in hand with both local county health workers and our Eastern Region Health Department. The state praised our circuit rider for his help and he received the "high-five" award from our State Department of Health.

Vermont
Rural Water Association

Flood Response

at Drinking Water & Wastewater Utilities

A large number of drinking water and wastewater utilities in Vermont were severely affected by the storms and flooding on July 9–10, 2023. At least 19 water systems experienced Boil Water Notices, Do Not Drink Orders, or were unable to deliver drinking water to customers. An estimated 23 wastewater systems had some form of permit violation due to flooding. Several treatment facilities were themselves flooded. Many water mains and sewer lines broke when streets or rivers flooded.

Vermont Rural Water's staff has been working around-the-clock to assist systems impacted by this emergency.

Johnson Wastewater Treatment Facility

Johnson's wastewater treatment facility was completely destroyed by flooding. Vermont Rural Water staff have visited the site numerous times since the flood to help source pumps, portable treatment units, and temporary lab/office space. We also continue to meet with the wastewater operators, the Village manager, and staff from the State of Vermont, EPA, Army Corps, USDA and FEMA about the immediate and long-term needs of Johnson's wastewater facility.

Plant manager Dan Copp shows the height that floodwaters reached on the first floor of the treatment facility.

The City of Burlington provided equipment to help pump floodwaters out of Johnson's treatment facility.

> "Thank you for your assistance yesterday and all of your help behind the scene today with FEMA. I think we all take the services VRWA provides for granted sometimes as Wayne and Paul are always there when we need them. I can't explain how important it is to know you all are a phone call away when we need it like this week. I literally can't explain how much VRWA's support over the last couple days has meant."
>
> **–Dan Copp**, plant manager, Johnson water/wastewater and Morrisville wastewater treatment facilities

Assistance Provided

The types of help that Vermont Rural Water has provided to drinking water and wastewater utilities includes:

- Inspected treatment plants, distribution/collection pipes, man holes, river crossings, and pump stations
- Completed initial and ongoing needs evaluations
- Sourced equipment from nearby utilities and rental companies
- Set up bypass pumping and coordinated sludge pumping
- Cleaned and rebuilt chemical feed room and plumbing
- Repaired blower for secondary treatment
- Located influent manhole coming into plant and sewer line under brook
- Dye tested potential broken pipes at river crossings
- Delivered emergency response trailers for onsite clean and dry workspace and storage
- Designed chlorination system for disinfection
- Coordinated mutual aid response between towns
- Sourced and delivered a borrowed vactor truck
- Spoke with press about how supply chain issues are impacting repair timelines
- Delivered supplies such as dehumidifiers, industrial fans, and KN95 masks
- Installed replacement chemical feed pumps and tubing
- Pumped water out of reservoirs and lagoons to prevent overflows
- Delivered sample bottles to water system
- Transported water samples to laboratory
- Called all water and wastewater systems in areas affected by flooding to offer assistance
- Called all water systems under Boil Water Notices
- Provided information and resources on our website and through daily email updates

> "Your response has been amazing and I know the facilities most impacted are grateful for any help [Vermont Rural Water] can provide."
>
> –**Margaret Dwyer**, senior manager, Winhall-Stratton Fire District #1

VT WARN

Vermont Rural Water's executive director, Liz Royer, is co-chair of the Vermont Water/Wastewater Agency Response Network (VT WARN), a mutual aid network of water and wastewater utilities. Throughout the emergency, Liz has managed requests and offers for assistance from member utilities.

Communities Helped

Vermont Rural Water provided onsite or phone assistance to drinking water and/or wastewater utilities in:

Barton	Montpelier
Castleton	Morrisville
Cavendish	Orleans
Chester	Pownal
Georgia	Richmond
Graniteville	Royalton
Hardwick	St. Johnsbury
Johnson	Waitsfield
Ludlow	Wallingford
Lyndonville	Waterbury
Marshfield	Woodstock

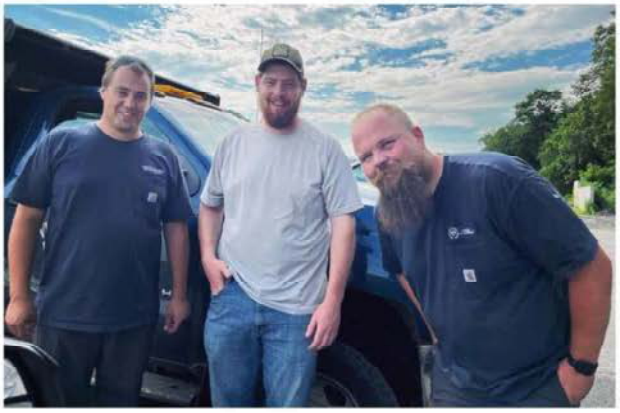
Time Spent

Vermont Rural Water's staff spent a tremendous amount of time helping water and wastewater utilities in the two weeks following the beginning of the flood (July 10 through 21)

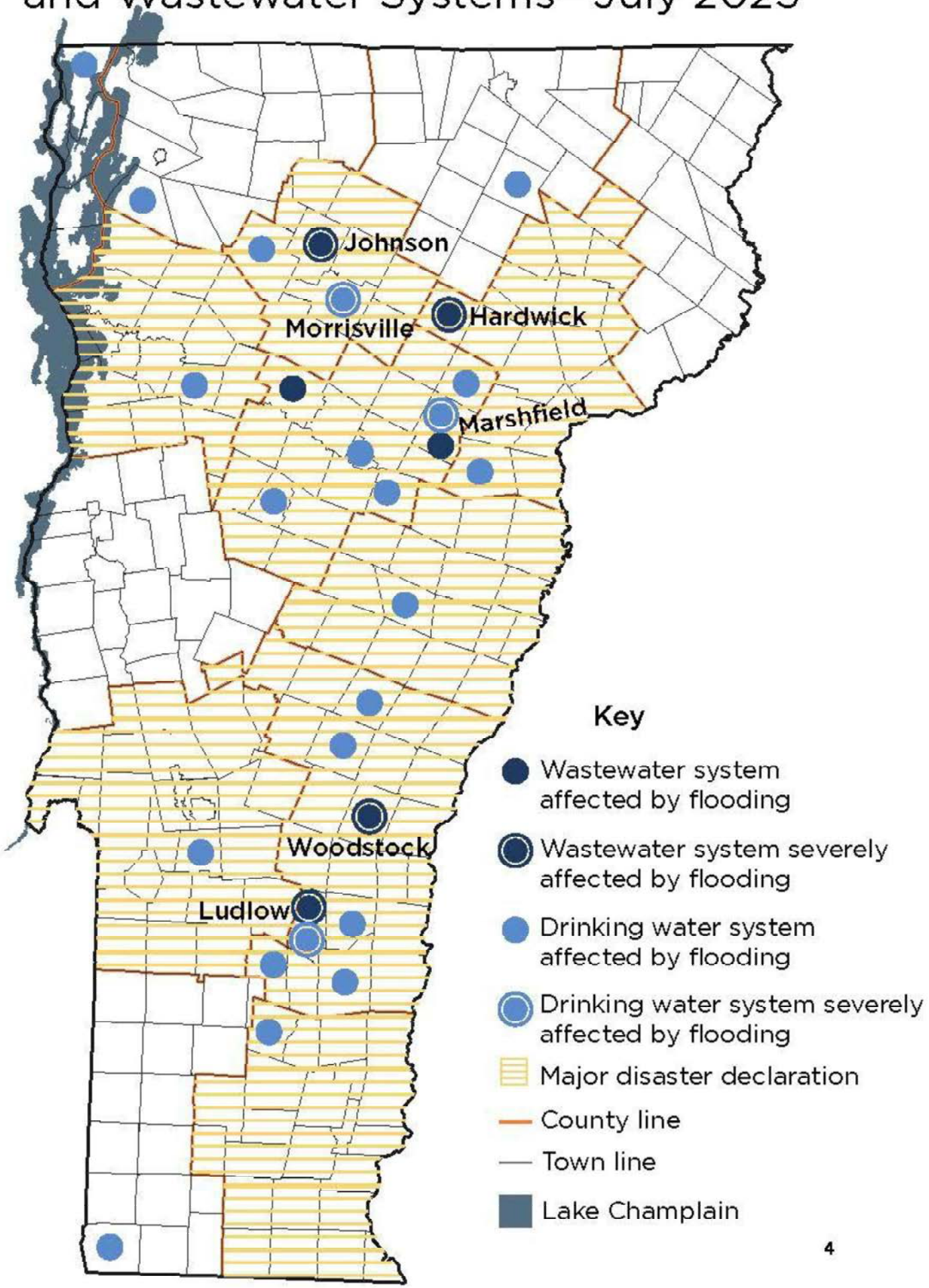
- **228 hours** onsite at impacted water and wastewater utilities
- **208 hours** additional support (phone calls, emails, etc.)

Photos of Vermont Rural Water's Flood Response

Clockwise from top left: Liz Royer at Johnson WWTF, Wayne Graham at Johnson WWTF, the Vermont Rural Water/VT WARN emergency response trailer at Hardwick WWTF, Brad Roy (center) with Waterbury's wastewater operators, Paul Sestito in Waterbury, Elijah Lemieux and Aaron Perez at Ludlow WWTF.



Flooding Impacts on Public Drinking Water and Wastewater Systems—July 2023



Minnesota Floods – June 2024

In June 2024, Minnesota faced significant flooding, prompting a swift and coordinated response from the Minnesota Rural Water Association (MRWA). Beginning on June 20th, MRWA's USDA/RD funded staff, including Circuit Riders Ben Oseien, Jake Williams, Zach Blonigen, and Wastewater Technician Paul Plaetz, alongside EPA-funded staff Bob Klug and state-funded John Nelson, mobilized to address the crisis.

The team deployed the Emergency Response Trailer and a fleet of pumps, sourced both from MRWA and cooperating communities, to assist flooded areas such as Waterville, Morristown, Adrian, Windom, Lismore, Lake Henry, Round Lake, Jackson, Eagle Lake, and Brownton. The critical work involved not just flood response, but also the logistical challenge of securing and transporting equipment, as some communities hesitated to release their pumps due to their own flood risks.

Close collaboration with MnWARN directors and the Minnesota Homeland Security and Emergency Management (HSEM) was crucial in ensuring pumps and other resources were dispatched to where they were most needed. MRWA's efforts extended to monitoring the situation in St. Cloud and Mankato, where the potential failure of the Rapidan Dam posed additional threats.

Additionally, MRWA's USDA/RD funded Wastewater Technician Joe Janson and Disaster Response Coordinator Terah Rinerson responded to flooding in the northern areas of Cook, Tower, and Walker, providing critical support and resources.

The collective efforts of MRWA, MnWARN, and HSEM, supported by the cooperation of local communities, exemplify the resilience and preparedness necessary to manage such natural disasters. The teams remain on high alert, ready to respond to evolving conditions and potential new threats as the situation develops.


Bobcat


CITY OF
ST.CLOUD
MINNESOTA
PUBLIC UTILITIES
BATTERY MAINTAINER
AUTOSTART


Minnesota
RURAL WATER
Association


City of Walker


Minnesota
RURAL WATER
Association


PAQUIN ST E
STOP


STOP


GR
PUMPS
Silent Pump


ROAD CLOSED
GR
GORMAN-RUPP
PUMPS


Minnesota
RURAL WATER
Association


Minnesota
RURAL WATER
Association


Vet's
















Hawaii Wildfires: Rural Water Lessons Learned

Rural Water comes together in response to unimaginable disaster

Kaylyn Branen Snow
Feb 21, 2024

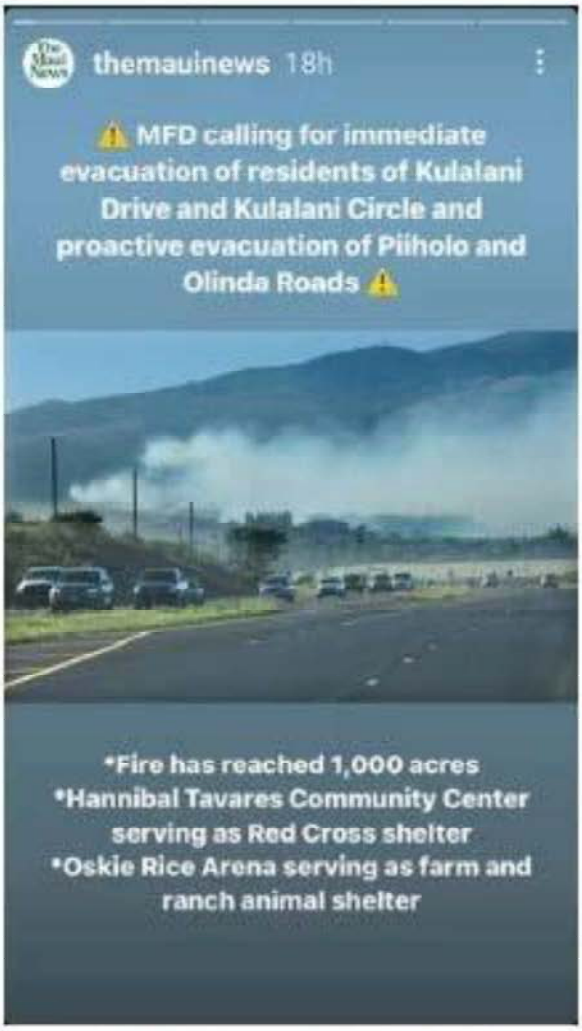
In August 2023, while attending training in Duncan, Oklahoma, Hawaii Rural Water Association (HRWA) Executive Director Juanita Reyher-Colon woke up to news no one wanted to hear: wildfires were burning back in her home state.

"It was kind of nerve-wracking, and I really wanted to be home to see how I could help," Reyher-Colon said. "I felt like I was useless on the mainland."

Without being physically there, Reyher-Colon did the only thing she could: she began making phone calls.

Wildfires ravage Maui in August 2023. Source: Juanita Reyher-Colon

"I reached out to the county water department as well as the other private utilities that I knew were within the area to see how HRWA could assist in providing support, whether it was manpower or getting resources to them or just putting them in contact with other folks from Rural Water that had experienced these things," Reyher-Colon said.



Evacuation alert urges residents to leave area.

Source: Juanita Reyher-Colon

The issue many utilities faced wasn't with the water source but rather burnt distribution lines, hydrants, and valves causing water to spill or not get where it needed to go. Reyher-Colon was able to help from afar while making her way back to Hawaii. However, due to a lack of personal protective equipment (PPE) and safety concerns, she was unable to send HRWA staff to the field to provide assistance.

"Juanita's was one of the first phone calls that I received to see if I needed any help at all and let me know that they would be on standby to help us," said Tony Carrasco, manager of special projects for Hawaii Water Service and NRWA National Director for Hawaii. "And that was nice to know, that Rural Water was there to support us if needed."

Other Rural Water Associations contacted Carrasco to offer assistance during the natural disaster.

"Relationships really played a role in the response since we had that built-up connection before it happened," Carrasco said.

Those relationships, coupled with his more than 37 years of experience in the water industry, made Carrasco's response a little easier. During the wildfire response, his role was the incident commander for Hawaii Water Service. In that capacity, he was responsible for communicating with city, state, and federal agencies, employees, and media outlets. However, this proved to be a difficult task with some cell phones not working and the fire and debris blocking entrances to the island.

Maui wildfire from a distance. Source: Juanita Reyher-Colon

"One of the things that affected me the most was ensuring all of our employees and their families were safe," he said. "And until we were able to get ahold of the very last person, I did not rest easy."

With no communication with his employees and being temporarily unable to gain access to the island, Carrasco had to trust his employees and the training they had received for emergency situations.

Maui homes, businesses devastated by wildfire. Source: Juanita Reyher-Colon

"I had to trust. It's hard when there's absolutely no communication; there's nothing you can do. You have to make sure your team is properly trained for these events because you're going to have to rely on their experience that things will get done until you can communicate with them. I took comfort knowing that my utility had been prepared for not necessarily this specific disaster but emergencies in general."

Eventually, the utility personnel gained access to satellite phones for communications; however, some didn't work properly.

"We transferred satellite phones from one state to another, and we found out that they did not work," Carrasco said. "So, you need to make sure if you're going to use equipment from one area to another that it will work in that area."

In addition to the limited communication, Carrasco's utility had no electricity for two weeks. In order to maintain operations, they used generators for power. Since the generators were running 24/7, utility staff performed maintenance on each generator to keep them functioning properly. This included changing the oil, air filters, and fuel filters. During those two weeks, customers never lost service.

Crews respond in aftermath of wildfire.

Source: Juanita Reyher-Colon

Another detail Carrasco had to consider was fuel for the generators. As a part of emergency preparedness, the utility had fuel cells ready to use, but those reserves were quickly depleted. Residents of the community offered whatever they had, even if it was just five gallons of diesel. In the end, the utility used five different vendors during this time to replenish their fuel supply.

During the wildfire response, Carrasco transferred operators from Hawaii Island to Maui, allowing the Maui operators to get a break. The facilities are set up differently, so the employees have been cross-trained for this purpose.

"When we talk about preparing for an event like this, any cross-training you do at the different types of water or wastewater plants is key," he said.

For other utilities and State Associations, Carrasco suggested taking steps now to be ready for future emergency response situations and natural disasters.

"Be prepared," he said. "Have emergency response tabletop exercises, plan capital projects accordingly, keep on top of maintenance, train your staff and then cross-train your staff, and reach out to neighboring partners. If you need any help, contact your State Rural Water Association. They're there to support you."

For wildfires specifically, Reyher-Colon suggested purchasing the proper PPE to protect staff. It is difficult to determine if any dangerous chemicals or fumes are in the air when responding to such disasters, which poses safety risks without the right equipment.

Now, months after the fires, utilities and the communities they serve still face challenges from the damage and starting the rebuilding process.

Aerial view of Lahaina before and after wildfire. Source: Juanita Reyher-Colon

"The number one challenge is the supply chain issue," Reyher-Colon said. "It's really impacting us. And second is being respectful of the people who lost their homes, lives, and family members, and not moving at a pace that is disrespectful to the families. A lot of them have not returned to their homes. Giving them the time to be in that space and grieve their loss is important."

Moving forward, Reyher-Colon said utilities in other states can learn from this disaster response and start preparing now for future incidents.

Another aerial view of Lahaina before and after wildfire. Source: Juanita Reyher-Colon

"I think we can learn from this experience and make our communities better, including our water utility, and strengthen our relationships and partnerships with other agencies," Reyher-Colon said, "not just here but also across the country. And should this happen again, we wouldn't necessarily be facing it alone. If other folks can start the conversation and not wait until an incident happens, and if we understand what other people's resources are, that can help alleviate some of the pressures."

After reflecting on the wildfire and the events that occurred during the response, Carrasco said he is grateful for the support not only from the community but also from Rural Water.

"I personally cannot thank the Rural Water Association community enough for all their support throughout this event, from the national to all the state associations," Carrasco said. "And I'm proud to be associated with an organization like Rural Water that does so many great things for the communities that we serve." **RW**

The Great Mask Delivery of 2020

(Rob White IV, Executive Director; Katie Hill, Program Specialist)

By now, we are all aware of the importance of masks and their ability to reduce the level of exposure to a person. Throughout this pandemic, it has been imperative that the ARWA be here for our critical water and wastewater personnel and provide resources to those groups that will protect them as business returns to something that resembles the way things were before COVID-19.

One crucial objective that ARWA was able to participate in was mask delivery. Our partners and friends at ADEM, EPA, and FEMA were able to acquire from the Haynes Corporation 50,000 reusable cloth masks for distribution within the State of Alabama. These masks were intended only for water and

wastewater personnel. One other note: these masks could not be distributed solely from the ARWA office but were required to be made available from 'distribution points' strategically located throughout the State.

Luckily, the ARWA is governed by ten board members who are themselves water and wastewater personnel located in 10 districts across our State. We asked for three volunteers to assist, and, of course, every board member volunteered without hesitation. We chose three to keep the process manageable. They were as follows:

North Alabama

Wayne Reed, General Manager of the Northeast Morgan County Water & Sewer Authority in Sommerville, AL.

Central Alabama

Terry Jackson, former General Manager of the Town of Thorsby Water Works Board, in Thorsby, AL.

South Alabama

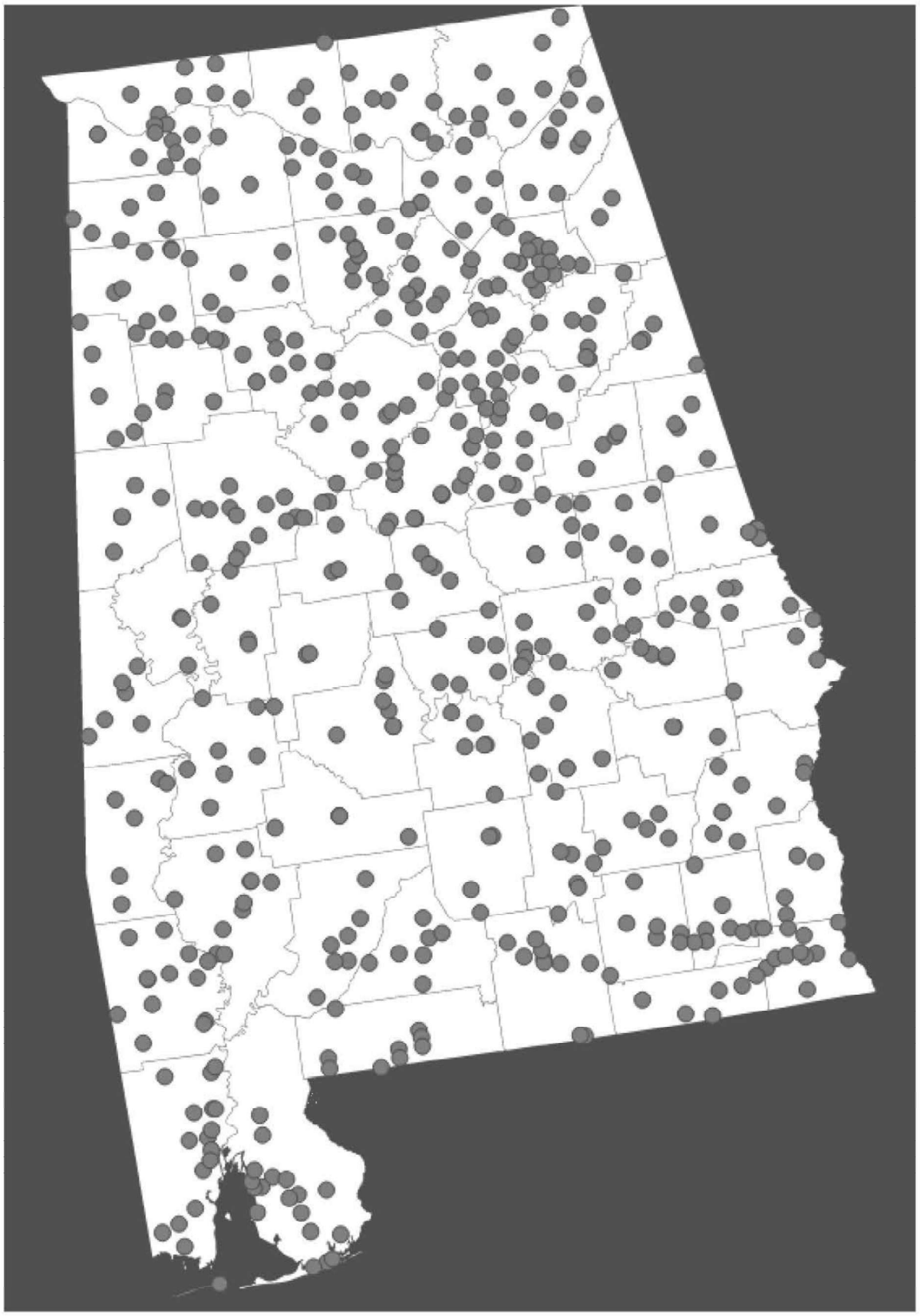
William Snyder, General Manager of Monroeville Water Works and Sewer Board in Monroeville, AL.

Our partners at ADEM took the lead in developing a request list and sent word to all the permitted entities in the State. We staged 15,000 masks in the north and south of the State, with an additional 20,000 in the central portion. With everything in place, the work began on June 8th, 2020.

The ARWA would not wait on systems to collect masks from the distribution points or require systems to respond to the survey. We intended to be proactive. We prioritized the request list but also had staff reach out to every system in our database to learn how many masks they needed. Then, we hit the road. From June 8th to July 1st, the ARWA distributed 38,675 cloth masks to 557 groups across Alabama. We still have more than 10,000 masks available for distribution and will continue to deliver masks to the water and wastewater personnel that require them. Simply pick up the phone and call! We'll get your masks to you in record time!

Thank you all for everything you do to keep the water flowing! We are proud to support you in those efforts.

Mask Deliveries



This map represents each delivery conducted over the course of one month.

Georgia Rural Water Prevents Sewer Spill in Small Town

William "Dub" Pearman, III
Mayor

Harold Simmons
City Manager

To whom it may concern:

I wanted to write this letter to show how much the GRWA means to the cities and communities around Georgia.

My name is Stephen Jewell and I am the lead operator for the City of Senoia. We are a small but growing town, with a population under 6000. While we strive to make strides in modernizing our sewer collection system we are still far from perfect. We have one mobile generator that must be shared across of 16 lift stations. On some occasions we must fight to mobilize the generator across town to various lift stations to prevent spills.

On April 10th, 2024 at approximately 10:30 pm we were alerted to a single lift station had lost power. It took us around 1 hour to dispatch the generator and walk away from the lift station after it was powered on. Before we could leave, we received two more alarms of two different lift stations had lost power. We would have been in a bind, and a spill was imminent if it had not been for GRWA loaning us two of their mobile generators. We were able to quickly reposition them to those lift stations and wire them in with the very helpful connectors that GRWA provided. We were able to sleep that night at a reasonable hour without having a spill thanks to the GRWA. It was not until 8 pm the following day that power was restored for those stations, so it was destined to spill.

The generators are also great for planned outages. On May 29th, Georgia Power will be swapping out every transformer in three subdivisions which will knock out 3 of our lift stations. We will be able to plan ahead, wire the generators beforehand and make it through without a spill.

So, thank you to the GRWA for helping us avoid disasters.

Sincerely,

Stephen Jewell
City of Senoia Lead Operator

Georgia Rural Water Assets / Response Images


CITY OF
KOHLER
EMERGENCY RESPONSE TEAM
GEORGIA RURAL WATER
" WATER IS LIFE"
GEORGIA RURAL WATER ASSOCIATION
NO TRESPASSING
AUTHORIZED PERSONNEL ONLY
PROPANE


KOHLER
EMERGENCY
RESPONSE TEAM
GEORGIA RURAL WATER