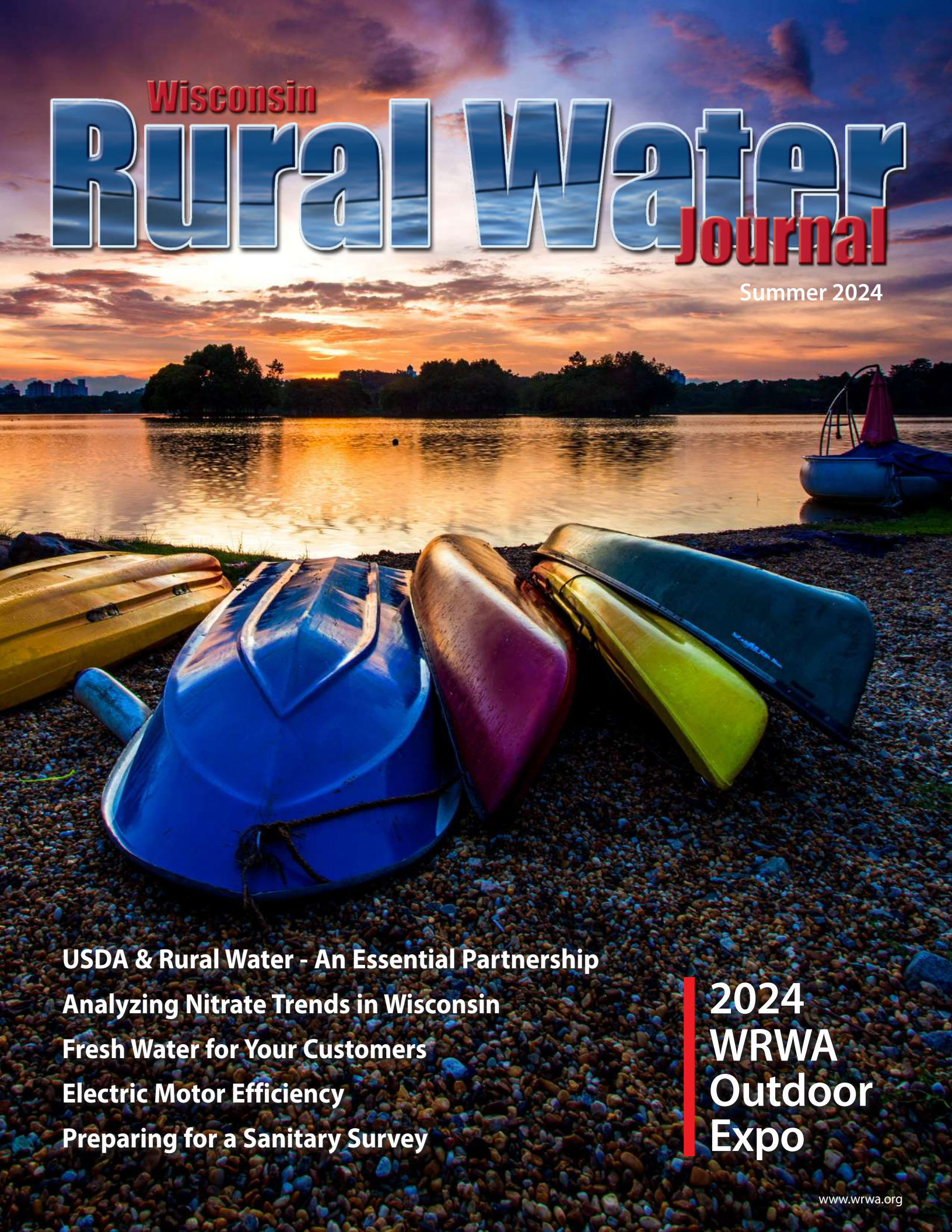

Wisconsin Rural Water Journal

Summer 2024

USDA & Rural Water - An Essential Partnership

Analyzing Nitrate Trends in Wisconsin

Fresh Water for Your Customers

Electric Motor Efficiency

Preparing for a Sanitary Survey

2024 WRWA Outdoor Expo

www.wrwa.org

In Every Issue

FEATURES

WRWA Staff:

Executive Director
Chris Groh
Chief Financial Officer
Andy Aspinwall
Technical Assistance Director
Kelly Thomas
Source Water Specialist
Andrew Aslesen
Wastewater Trainer
Jesse Hass
Tony Roche
EPA Wastewater Technician
Brooke Klingbeil
Executive Assistant
Amy Felckowski
Member Services Coordinator
Renee Koback
EPA Water Technician/Training Specialist
Seth Petersen
Training Specialist
Brenda Staudenmaier
Energy Efficiency Circuit Rider
Matt Rettler
Other than Municipal Circuit Rider
George Taylor, Jr.
Municipal Water Circuit Rider
Todd Weich
Dan Wundrow
Annie Von Rueden

OFFICIAL PUBLICATION OF THE WISCONSIN RURAL WATER ASSOCIATION

WRWA STATE OFFICE
PH: 715-344-7778 • FAX: 715-344-5555
E-Mail: wrwa@wrwa.org
Website: www.wrwa.org

NATIONAL RURAL WATER ASSOCIATION
NRWA America's Largest Utility Membership

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Address all letters to the editor, advertising inquiries and correspondence to:
Wisconsin Rural Water Association, 350 Water Way, Plover, WI 54467.

Message from the President

Dean Bergstrom,
WRWA President, Cumberland

Happy summer everyone! As I'm writing this message, I'm watching the news and seeing all the heavy rains, flooding, and tornadoes around the country. I hope everyone is able to deal with whichever you may be dealing with. Remember that WRWA circuit riders are here to help you and we have equipment you can borrow if needed.

The WRWA Board of Directors recently met over in Green Bay for our annual board retreat/reorganizational meeting. We were able to take a tour of the Resch Center where we will be having our 2025 and 2026 annual conferences. The Resch Center will be an exceptional arena for our conference. There will be a few things to work out, but overall we are looking forward to the new opportunities. I hope you all will be able to join us March 25-28, 2025.

The next thing we are excited about is our new property that was purchased next to our WRWA office building in Plover to expand our outdoor expo. We have had the property cleaned up and hydro seeded in hopes to establish grass before our outdoor expo on August 22, 2024. This will be a work in progress for a while, but we are very excited for the hands-on learning opportunities that we are working towards. If anyone would like to donate money or products that will help us reach our goals, please call the WRWA office and talk with Chris Groh, or contact one of our board of directors.

I hope your summer projects are going well. Until next time, stay cool, safe, and stay dry!

Dean

"Like" us on Facebook

WRWA
Wisconsin Rural Water Association

WRWA Mission:
Assisting, educating and representing our members in the Water & Wastewater Industries.

Message from the Executive Director

Chris Groh,
WRWA Executive Director

The Shape of Things to Come?

I've caught myself lamenting the way things were and what they are becoming for the last year or so quite often. Some of that has spilled into this column, which I apologize to the younger people who read this. Although you must know how things were before we can change things, oftentimes it turns into a "feel sorry for me" thing for the writer. Well, that won't stop me from doing it here again, below!

I have noticed lots of changes in the water and wastewater industry over the last 42 years. Most of which has been an inevitable evolution of rules, regulations, scientific advances and a lot of dealing with several generations from "Boomers" to the most recent "Millennials" and "Gen Zs". If nothing else, people have changed more than anything else in this lifetime. When the EPA came into existence, wastewater treatment was basically used to remove the nasty stuff and solids out of the water before going into the environment. Usually if people were connected to a treatment plant, it was usually a settling process that held the water until everything settled to the bottom of the pond, or pit or basin, and it was then discharged into a receiving stream or something similar. When EPA started, there were many improvements to the process; aeration, clarification and disinfection, but most of which meant more people connected to a treatment system and their wastes were treated. Similarly, water became safer through disinfection, testing and more connections to the treated water. Treated wastewater meant lower rates of infection for things like cholera, Salmonella, typhoid and other water borne diseases.

Now we are treating water and wastewater to eliminate nutrients and contaminations of man-made chemicals to the extent that they are undetectable, and often at a great cost. This was brought about by a very continual change in science. The ability to sample, test and monitor things to such low levels that it is unimaginable has crept up on us all. Is it better, depends on who is paying for it isn't it?

I'm not lamenting that change as much as most. Change is often for the better. The change I have the most experience with is helping people to test these changes, and then reach out to the compliance of these issues with the changing regulations environment. Technical Assistance has been my career even though I didn't realize it until I started working for WRWA. It really does mean something different for everybody. Our operators so often are very glad to have one of the WRWA staff stop in and help with the myriads of things they must contend with. We offer so much experience and willingness to render meaningful help with all the aspects of the Water/Wastewater Industries. Regulations to Lab work to funding to Source Water protection and distribution.

All these things depend on funding from Government officials and agencies that are cognizant of what Technical Assistance is. Cognizance doesn't mean understanding. Most good things are lost to lesser abled associations and businesses that are the "lowest bid." When has the lowest bid been the best option? It's a lower cost because it is not as good as the real cost. I for one do not want to give my operators anything but the best Technical Assistance (and training) that I can and be able to make a modest living. Not possible if I am the lowest bid.

How does this affect my operator friends in the Water/Wastewater industries? You receive less than the best, which usually means you are working less than your best. No fault of your own. The fault lies with the lowest bid mentality that just anyone can do Technical Assistance and Training to a level that matches Rural Water. **How can you help? Please consider writing a thank you letter to us for anything that we have done for you.** Maybe a short description of your situation and how we may have helped. What would your alternative have been if we weren't there. Maybe an expensive consultant, a pricey update, loss of water or wastewater services? Anything that goes to show your congressman that the needs of Rural Wisconsin (and Rural America) needs the help that we offer. A lot of public officials in DC will tell you if you want water, to go to the big city and get it. Not feasible and not wanted.

In this issue you will find an Op Ed piece from my boss at National, Matt Holmes. He will be writing about some of the same issues as I have here. We have a series of campaign ads for supporting USDA Rural Development, who supports our Technical Assistance and training. The ads are very informative and brings up interesting reasons to support Rural Development. This support is so important across Rural America, and you can have a hand in its support.

If we work together by mutual support, we can all enjoy the things in Rural American life. Then maybe together we won't mind all the changes in the world so much. Wouldn't that be nice?

Chris

We get letters and emails!

We'd love to hear from you…

Renee,

First off, I would like to thank the entire staff at WRWA for everything that you do for us! A special shout out to Todd Weich for helping us with fire flows and some pressure issues that we have been working on!

Secondly, I'm wondering if you can help me find some training for our administrative assistant, she is wanting to attend some utility clerk training, I've done some search but have come up empty handed, if you have and information or could find some through your avenues and pass it along that would be great!

Thank you,

Glenn Hanna, Tomahawk Waterworks

Dear Mr. Thomas,

I am writing to express my appreciation for Brooke Klingbeil and all of her hard work for the Oenida Utility to train a new wastewater lab coordinator.

A recent retirement of our seasoned lab coordinator left us with questions on proper lab procedures and reporting. Brooke stepped in and seamlessly assessed our lab, reviewed our procedures, and worked with our staff to develop new bench sheets, recommend new lab equipment, and provide procedural training for wastewater compliance testing and reporting. Brooke has a unique way of breaking down complex regulations and procedures into a language someone other than a regulator can understand. She has made several site visits over the period of a few months and is always available via phone to answer any questions we have. She is also very personable and works well with all of my staff.

Brooke is truly a valuable asset to the Oneida Nation. Thank you for supporting the work she does, and I look forward to working with her in the future.

Sincerely,

Scott Cottrell, Utility Manager, Oneida Nation

Kelly,

Just thought I'd drop you a line to say how much I enjoyed and benefitted from the Water Operator's Responsibilities class you presented yesterday in North Fond du Lac. As always, your many stories were informative, amusing, and entertaining. Never a dull moment. The class was a great refresher, and I learned a few new things as well.

It was great to have an in-person class once again. I absolutely hate the virtual classes that seem to be an ever-growing method of instruction these days. Hope to see you when I recertify again in three years.

Martin J. Biller, P.G.

To Whom it May Concern,

I would like to take a moment to acknowledge the hard work and commitment that Kelly Thomas and his colleagues at Wisconsin Rural Water Association have with assisting and educating businesses regarding different areas of water testing and compliance. I have been in the Ready Mix Concrete industry for approximately 8 years and have worked with Kelly and his team to ensure I stay up to date on anything dealing with Small Water Systems, testing and the operator certification. I have attended several classes by Kelly and his team and they are extremely valuable with excellent teachers. Kelly answers his emails timely and never hesitates to come to our office to ensure we complete tasks accurately and timely for the DNR.

We appreciate Kelly and his team at WRWA.

Thank you!

Sincerely,

Cassie Krause, Director of HR & Safety

To Whom it May Concern,

I would like to take a moment to acknowledge the hard work and commitment that Kelly Thomas and his colleagues at Wisconsin Rural Water Association have with assisting and educating businesses regarding different areas of water testing and compliance. I have been in the Ready Mix Concrete industry for approximately 25 years and have worked with Kelly and his team to ensure I stay up to date on anything dealing with Small Water Systems, testing and the operator certification. I have attended several classes by Kelly and his team, and they are extremely valuable with excellent teachers. Kelly answers his emails timely and never hesitates to come to our office to ensure we complete tasks accurately and timely for the DNR.

We appreciate Kelly and his team at WRWA.

Thank you!

Jake Stelter Carew Concrete and Supply Co., Inc.

To whom it may Concern,

Over 25 years ago, I first attended in-person classes with Kelly Thomas of WRWA to earn my Small Water System (OTM/NN) Operator Certification. I have learned a great deal through the years while renewing my Certification with the in-person renewal classes conducted by Kelly Thomas.

Kelly has diligently sent e-mail reminders to take my Bacti Samples, along with the other DNR required annual tests. Kelly has made himself available to answer questions regarding my water system. Kelly Thomas has visited my court, and he has come to my office offering to help me with issues that might come

up with my water system. Personal service goes a long way in helping me to understand issues that might arise, and to provide safe drinking water.

Since 2020. When Covid stopped in-person classes, I felt disconnected from this effective learning experience with Virtual classes. I took a few Virtual classes with the Moraine Park Technical College, but the instructors don't seem to have the same hands-on experience with the water systems in mobile home courts. The Morain Park Technical College instructors have not reached out to me since attending their classes.

Last week, I attended the in-person WRWA class in North Fond du Lac, on "Operator Responsibilities & Sanitary Surveys" with Kelly Thomas as my instructor. The other attendees all stated that they missed attending Kelly's classes because the Moraine Park courses were like listening to someone read straight out of a textbook. Kelly's class allowed us to interact with one another, and even though I was the only attendee who had a mobile home court water system, I learned from the other attendees that we have some common concerns or issues. Kelly addressed each one of our questions from first-hand knowledge.

Last year, my nephew attended an on-line course to earn his Small Water System (OTM/NN) Operator Certification. He took his exam in a real estate office with one other person. The realtors were talking about unrelated real estate issues while they were trying to concentrate on taking the exam.

My nephew waited a week for his results before reaching out to PSI, the exam scheduler, for help. PSI told him that he should have received on-screen results and an e-mail score report printed out at the test center, but this never happened.

I reached out to Kelly Thomas at WRWA for help. Kelly checked on the results and notified me that he had failed the first exam. My nephew repeated the Virtual course for a second time, and he hopes to pass the exam on June 6th, 2024. If he does not pass the exam in June, he will then attend Kelly's WRWA in-person course on August 8th in Janesville, WI.

Last week, Kelly came to our office to meet with me to see if I needed any help with my water system, and my nephew had an opportunity to meet him. My nephew and I both appreciated having someone so dedicated to making sure that we are providing safe water systems.

I highly recommend having WRWA be your preferred Water System course provider.

Thank you,
Catherine Styza
Member/Browns Lake Mobile Home Court LLC
Bureau of Drinking Water & Groundwater
Wisconsin Department of Natural Resources

Dear Member of the WI DNR,

I am writing to strongly encourage the Wisconsin DNR to retain the services of the Wisconsin Rural Water Association (WRWA).

As the Water System Owner and Certified Operator for my business, I have utilized the services of the WRWA for the last 20 years. I have received all my required Continuing Education credits from courses taught by members of the WRWA. I have also called upon them to assist me with interpreting and complying with Federal and State regulations as they apply to my water system.

Should an unexpected event occur with my water system, the WRWA is who I call first. The WRWA employs extremely knowledgeable, helpful staff whose mission it is to ensure that all Water Operators have the information, tools, and support they need to ensure that their water systems are safe and comply with all regulations. To this end, I receive monthly reminders to send our quarterly drinking water samples for evaluation. These reminders include not only instructions on how to submit the test results to the DNR but also contact email and phone numbers of WRWA personnel who are available to assist.

We also receive frequent notices of continuing education classes and certified operator exam review classes. Additionally, of our new team members received personal assistance from our WRWA Circuit Rider to help him prepare for his certification exam.

Lastly, I would like to note that I have known our area's WRWA Circuit Rider, Kelly Thomas, currently the Technical Assistance Director at WRWA for the last 20 years. He is one of the most committed, experienced, and supportive individuals I know. He is a tremendous representative of the WRWA organization.

I am happy to provide you with any additional information to assist you in your evaluation of the value and impact of the WRWA. Please feel free to contact me at maryi@genmet.com or 414-331-6045.

Sincerely,
Mary E. Isbister , Owner, GenMet Corp

New WRWA TRAINING SPECIALIST

Brenda Staudenmaier,
WRWA Training Specialist

Hello everyone! My name is Brenda Staudenmaier, and I'm thrilled to join WRWA as the new training specialist. I'm stepping into this role following Tony's transition to wastewater, and I'm loving the mentorship I've been receiving from the WRWA staff, operators, my past coworkers, and our business members. I've been told that I'm a catalyst. I enjoy building a network and hope to meet you all at our in-person trainings where you can chat with your neighbors and build comradery. Online trainings are also available through me.

I've had a very interesting life, full of unique experiences. I've worked with celebrities, doctors, artists, and fascinating individuals from all over the world, all of whom have shaped who I am today. In the past, I was hired to photograph Busta Rhymes' birthday party in NYC, photographed many famous musicians and celebrities, and worked for many years as a photographer for Vice. I've appeared on many podcasts and work has been published in books, magazines, and blogs across multiple languages. My photography has been exhibited around the globe, and Dr. Zach Bush even said I am one of the most interesting people he has ever met!

My latest endeavor as a photographer and artist is a new art book about wastewater, microbes, and our unique world. My wastewater bug photos and videos have won first and second prize recognition in a water gallery exhibit and the short video documentary film section of a digital arts competition. Children's books about engineering, wastewater bugs, and critical infrastructure jobs to expose children to the idea that toilets aren't trashcans and to inspire the next generation are something I'm interested in.

As an environmentalist, I prioritize water, zero waste, and human health. My friend Frankie Olvera passed away from bone cancer during a time when a Harvard study linked fluoridated water with bone cancer in boys. This tragic event set me on a path to research fluoride, consulting experts worldwide. I often joke that I could have a PhD in fluoride if one existed. Since 2017, I've been involved in a legal battle against the US EPA over the neurotoxicity of fluoride chemicals in public drinking water. We're currently awaiting a verdict, which we hope will end water fluoridation across the United States.

For the past 13 years, water and poop have been significant focuses in my life because water is health, and everybody poops. I potty trained my youngest son Ko from birth using elimination communication, or as I like to call it, potty whispering. We ditched cloth diapers around 3.5 months and went diaper-free. I'd make grunting noises for pooping and little psst psst whispers for peeing, which taught Ko to associate the sounds with the sensations. These techniques have been used for thousands of years in places like China and India. Babies don't potty in their sleep, so as soon as he woke up, I'd take him to the bathroom. Feeding and potting him were the main activities in the early years of his life.

Being a mom and my fluoride journey led me to pursue environmental engineering with a focus on drinking water and wastewater at NWTC in Green Bay, where I graduated with highest honors receiving an associate's degree. During my time at NWTC, I wrote a proposal for a zero-carbon emissions energy device that was announced by the White House on World Water Day in 2016 as making it to the top 10 in the nation for a National Science Foundation innovation challenge. My teammates and I were sent

to Washington DC to attend an engineering boot camp with other students from around the US. Our project was the junkyard generator that uses a Fresnel lens to concentrate heat to boil steam and turn an impeller for generating electricity. My energy challenges are figuring out how to modify my vehicle to attain 200+ mpg once my warranty expires. A friend of mine got his Hummer to get 50mpg so I believe my goal is attainable.

I keep myself busy with various jobs. I was a wastewater assistant at the Village of Egg Harbor in Door County back in 2018 and spent the last 5.5 years being a wastewater operator with the Madison Metropolitan Sewerage District. I often sell cheese at the Kickaas Cheese stall on Doty St, Saturday morning summer Farmers Market in Green Bay. When needed, I waitress at Little Tokyo in Green Bay. This fall, I'm moving out of my Madison apartment and relocating to my parents' little farm in Peshtigo, Wisconsin. I have a passion for biodynamic agriculture and planted 1-2 acres of pumpkins and squash this spring. I might sell them at my cousin's antique shop outside Chicago, or I might hunt the well-fed deer that ate them all! Next year, I would like to expand to a corn maze.

I feel like I've won the lottery of life and am blessed with health, family, and friends. I look forward to connecting with all of you and contributing to the success of my new WRWA family! I can't wait to meet many of you at our upcoming training and events. Please do not hesitate to reach out to me with your training needs. We are always looking to expand our locations, so if you have a village hall or room that can fit up to 20 or more people and would like to host a DNR exam review or other training, please reach out. Cheers! *Brenda*

CORPORATE GOLD MEMBERS

WATER LOSS

Dan Wundrow,
WRWA Water Circuit Rider

Do you have a water leak or a revenue leak?

Over the year, WRWA staff members are called to assist in locating water leaks within your systems. Often, these leaks do not surface and can be tricky to find. In some cases, no leaks are found. The system operator will usually indicate that they have pumped an excessive amount of water over some time. Whether you are pumping or buying water, this can be costly.

Good record-keeping is essential here; if you don't, you must know where to look. Look at your PSC reports from the last five years, specifically on pages W-02 and W-15. Page W-02 will have the total gallons sold by each meter account type, and W-15 will have a plethora of information. For this article, we will be looking mainly at the line of total gallons pumped or purchased. With good data, you can pinpoint when your system started to have problems.

Year	2023	2022	2021	2020	2019
Gallons Pumped	14.345	20.817	19.318	28.927	18.485
Residential (461.1)	4.967	5.113	5.472	5.078	5.097
Commercial (461.2)	2.223	2.241	2.441	2.131	2.014
Industrial (461.3)	0.293	0.412	0.403	0.45	0.419
Public Authority (461.4)	0.435	0.338	0.344	0.475	0.754
Multifamily (461.5)	0.145	0	0	0	0
Total Gallons Sold	8.063	8.104	8.66	8.134	8.284
Total Gallons Not Accounted	6.282	12.713	10.658	20.793	10.201
Non-Revenue Percent	44%	61%	55%	72%	55%

The above chart shows a water system with significant leaks in 2020 and 2022. During the operating year of 2023, several other leaks were found within the system, helping to bring down the non-revenue water loss to 6.282 million gallons. Now, this system is still working on isolating other water leaks. Other areas of concern are located within the industrial meter account. From the operating year of 2020 to 2023, we can see that the amount of water being sold is going down at a steady rate. This area should be investigated further.

Year	2023	2022	2021	2020	2019
Gallons Pumped	21.367	22.011	21.637	20.254	19.983
Residential (461.1)	7.985	5.981	6.147	6.374	6.831
Commercial (461.2)	9.682	9.947	9.401	9.834	9.445
Industrial (461.3)	2.455	2.761	2.653	2.896	2.847
Public Authority (461.4)	0.55	0.574	0.521	0.345	0.342
Multifamily (461.5)					
Total Gallons Sold	20.672	19.263	18.722	19.449	19.465
Total Gallons Not Accounted	0.695	2.748	2.915	0.805	0.518
Non-Revenue Percent	3%	12%	13%	4%	3%

The above chart makes it easy to see what is going on. If you look at the residential water sales, you see that in 2019, they were 6.831 million gallons, and by 2022, they were 5.981 million gallons. In the operating year of 2022 to 2023, the system installed new water meters on the residential side and saw an increase in water sales with the new water meters.

If water sales are going down and production seems to be staying steady, you may have a meter issue rather than a leak issue. If you suspect a metering issue, it's best to start looking at the large water users. Questions: Has a high-water user recently stopped or cut production? Is the meter being recorded accurately? When was the last time the meter was tested?

There are some other ways to track and analyze meter loss. Depending on your current billing cycle, I recommend working with the billing clerk monthly or quarterly. Compare water pumped to water sold for each billing cycle. This will give a faster update than waiting for your annual PSC report. If you are one of the systems that can gather gallons sold daily or monthly, compare that information to those pumped daily or monthly.

Do you have a water leak or a revenue leak? I hope this article helps you determine the type of water loss in your system. If you need assistance with this, please contact someone at the WRWA office. I hope that you are enjoying your summer and, hopefully, staying dry and safe. *Dan*

CORPORATE GOLD MEMBERS

Fresh Water for Your Customers

Kelly Thomas,
WRWA Technical Assistance Director

Yep, those were the guys showing me the ropes.

As a child growing up in a very small community it was always a treat when the 'village people' would open the fire hydrants. All of us kids would pass the word saying the "hydrants are opening" so we can get together and run or ride our bikes through the gushing water. As a child without a care in the world you never cared for the reason they were opening the hydrants it was just a treat to get wet (soaked) in the summertime in a manner other than swimming.

Flushing water mains in a small water system is a critical maintenance activity that helps to maintain water quality and ensure the delivery of clean, safe drinking water. No matter the size of your distribution system, flushing your water lines will ensure water quality for your customers. Flushing will require the movement of larger than normal quantities of water from the water source out to the very ends of your distribution system for a period of time that will not deplete the system's water supply or operating pressure.

Municipal water systems will likely utilize fire hydrants to move large volumes of water to scour their water mains and have the water carry accumulated sediment out through the hydrants. By strategically shutting off certain valves in the distribution system, operators can manipulate the direction that the water will flow to be sure that the proper mains are being flushed. This is called directional flushing.

Some Other than Municipal community water systems may not have hydrants and will need to find other ways to flush larger volumes of water. If in a manufactured housing park, opening the outside faucets of 3 consecutive homes will move larger than normal volumes of water through the mains.

Non-Transient, Non-Community water systems (Schools, businesses, daycare centers) will need to get creative when trying to move a lot of water. Even though the water mains are smaller, simply removing aerators from the faucets will change the gallons per minute of water from about 1.5 gpm to approximately 3-5 gpm. This is enough flow to get the job done with 2 inch or smaller water mains.

Flushing will also ensure chlorine, or any other chemical used by the water supplier is being distributed throughout the water distribution system. Here are some general steps and considerations for flushing water mains:

BENEFITS OF FLUSHING:

- Removes sediment, rust, and other deposits that can accumulate in the water mains.
- Helps to maintain water quality by ensuring the delivery of clean and clear water.

- Identifies and addresses potential issues such as leaks, broken valves, and malfunctioning hydrants.
- Improves the overall performance and lifespan of the water distribution system.

By following these steps and considerations, small water systems can effectively flush their water mains to ensure the delivery of high-quality drinking water to their customers.

STEPS FOR FLUSHING WATER MAINS:

1. Planning and Scheduling:

- Develop a flushing schedule, usually conducted semi-annually or annually.
- For Schools, schedule flushing just prior to the start of the school year or prior to the kids returning from holiday or spring breaks.
- Inform residents and businesses about the flushing schedule to minimize inconvenience.

2. Hydrant Inspection and Preparation:

- Inspect hydrants to ensure they are operable and in good condition.
- Identify and map out the sequence of hydrants to be flushed.

3. Opening and Closing Hydrants:

- Open hydrants slowly to prevent water hammer and pressure surges.
- Let the water flow until it runs clear, which may take several minutes.
- Close the hydrants slowly to avoid pressure surges that can damage the pipes.

4. Monitoring Water Quality:

- Monitor the water for color, clarity, and odor during the flushing process.
- Collect water samples periodically to test for contaminants such as chlorine residuals, turbidity, and bacterial content.

5. Documentation and Reporting:

- Document the time, duration, and location of each hydrant/faucet flushed.
- Record any issues encountered, such as discolored water or debris.

6. Post-Flushing Activities:

- Check for any leaks or damage caused by the flushing.
- Ensure that all hydrants are properly closed and secured.

CONSIDERATIONS:

- **Environmental Impact:** Be mindful of where the flushed water is discharged to avoid environmental contamination. (dechlorination of water, erosion control)
- **Pressure Management:** Ensure that water pressure is maintained within safe limits to prevent damage to pipes and infrastructure.
- **Community Communication:** Inform the community about potential temporary water discoloration and advise them to avoid using water during flushing times if possible.
- **Safety Measures:** Use appropriate safety measures to protect personnel conducting the flushing, including wearing proper PPE.

It is the responsibility of the water operator to supply fresh, clean, and safe drinking water to all the water customers. Whether the customer is next to the well or the furthest from the well on a dead end main, every customer has the right to safe clean water.

Stay safe. Stay healthy, *Kelly*

CORPORATE GOLD MEMBERS

PSC WATER RATE INCREASE ORDERS ISSUED

MARCH 1, 2024 – MAY 31, 2024

UTILITY NAME	ORDER ISSUED	OVERALL% INCREASE
Cottage Grove Water and Sewer Utility	3/6/24	25.03%
Mellen Municipal Water Utility	3/11/24	27.07%
Mount Sterling Municipal Water Utility	3/11/24	70.94%
Sheboygan Water Utility	3/21/24	38.67%
Village of Pound Water and Sewer Utility	4/2/24	58.91%
Star Prairie Municipal Water Utility	4/2/24	18.85%
Winnebago Area Sanitary District	4/2/24	NA
Cambridge Municipal Water Utility	4/4/24	66%
McFarland Water and Sewer Utility	4/4/24	37.16%
Town of Grand Chute Sanitary District 1	4/9/24	17.91%
De Pere Water Department	4/23/24	9.42%
Mayville Municipal Water Utility	5/10/24	47.84%
Altoona Municipal Water and Sewer Utility	5/21/24	33.94%
Hawkins Municipal Water and Sewer Utility	5/23/24	125.81%
Coon Valley Municipal Water Utility	5/28/24	80.14%
Menasha Electric and Water Utilities	5/31/24	21.2%

PSC CONSTRUCTION AUTHORIZATIONS ISSUED

DECEMBER 1, 2023 – FEBRUARY 29, 2024

UTILITY NAME	ORDER ISSUED	CONSTRUCTION COST
Wauwatosa Water Utility	3/1/24	$5,250,000
Madison Water Utility	3/11/24	$5,900,000
Cumberland Municipal Utility	3/29/24	$955,000
Whiting Municipal Water and Sewer Utility	4/8/24	$756,400
Barneveld Municipal Water Utility	4/15/24	$3,966,967
Balsam Lake Municipal Water Utility	4/18/24	$6,950,000
Village of Amherst Water Utility	4/18/24	$578,870
Fitchburg Water Utility	4/24/24	$3,830,000
Fitchburg Water Utility	4/26/24	$4,560,000
Fond Du Lac Water Utility	5/1/24	$500,000
Hudson Public Utilities	5/1/24	$642,500
Sheboygan Falls Utilities	5/1/24	$3,224,550
Mequon Municipal Water Utility	5/7/24	$1,183,427

Wisconsin Rural Water Association

WRWA MEMBERSHIP (Annual Fee)

*WIP (individual)	$45
Transient	$65
OTM & NN System	$155
Septage Haulers/Plumbing Co.	$155
Less than 1,000 people served	$330
1,001 – 2,500	$410
2,501 – 6,000	$480
6,001 – 10,000	$550
Over 10,000	$615
Associate	$550
Corporate	$1,540
Corporate Gold	$2,880

JOURNAL ADVERTISING RATES

	MEMBER		NON-MEMBER	
Black & White Advertising	1-Time	Yearly	1-Time	Yearly
Full page	$430	$1,555	$575	$1,970
Half page	$315	$1,130	$395	$1,265
Quarter page	$215	$800	$270	$860
Business card	$160	$575	$200	$600

	MEMBER		NON-MEMBER	
Color Advertising	1- Time	Yearly	1-Time	Yearly
Inside front cover	$670	$2,430	NA	NA
Outside back cover	$800	$2,540	NA	NA
Full page	$575	$1,970	$770	$2,670
Half page	$370	$1,265	$575	$1,965
Quarter page	$270	$860	$400	$1,400
Business card	$200	$600	$335	$1,000

*For information on advertising & the benefits of membership at the different levels, please contact Renee at the WRWA office: 715-344-7778 or rkoback@wrwa.org. *Must be employed by a WRWA system, associate, or corporate member, retired and state or federal employees*

CORPORATE GOLD MEMBERS

WET Testing

Tony Roche,
WRWA Wastewater Trainer

WET testing stands for whole effluent toxicity testing.

Hello Wisconsin! I am writing this article on June 20th, which happens to be the first official day of summer! Yeehaw! Summer is a time for backyard barbecues, baseball, construction, and of course fishing! I hope everyone is having a great summer so far. Any longtime Wisconsin resident knows that summer always seems to fly by…so make the most of it and have some fun!

Lately I have received a few inquiries about WET testing – so I decided to write an article about it. First off, WET testing stands for whole effluent toxicity testing. During a WET test, organisms are exposed to samples of wastewater treatment plant effluent for a specific period of time. Common organisms used in WET Tests are fathead minnows *(Pimephales promelas)* and waterfleas *(Ceriodaphnia dubia)*. WET tests are conducted using solutions with different effluent proportions. A control treatment (exposure of test organisms to only dilution water with no effluent) is also used to show the viability of the test organisms and the quality of the dilution water, test conditions in the laboratory, and handling procedures of the test organisms.

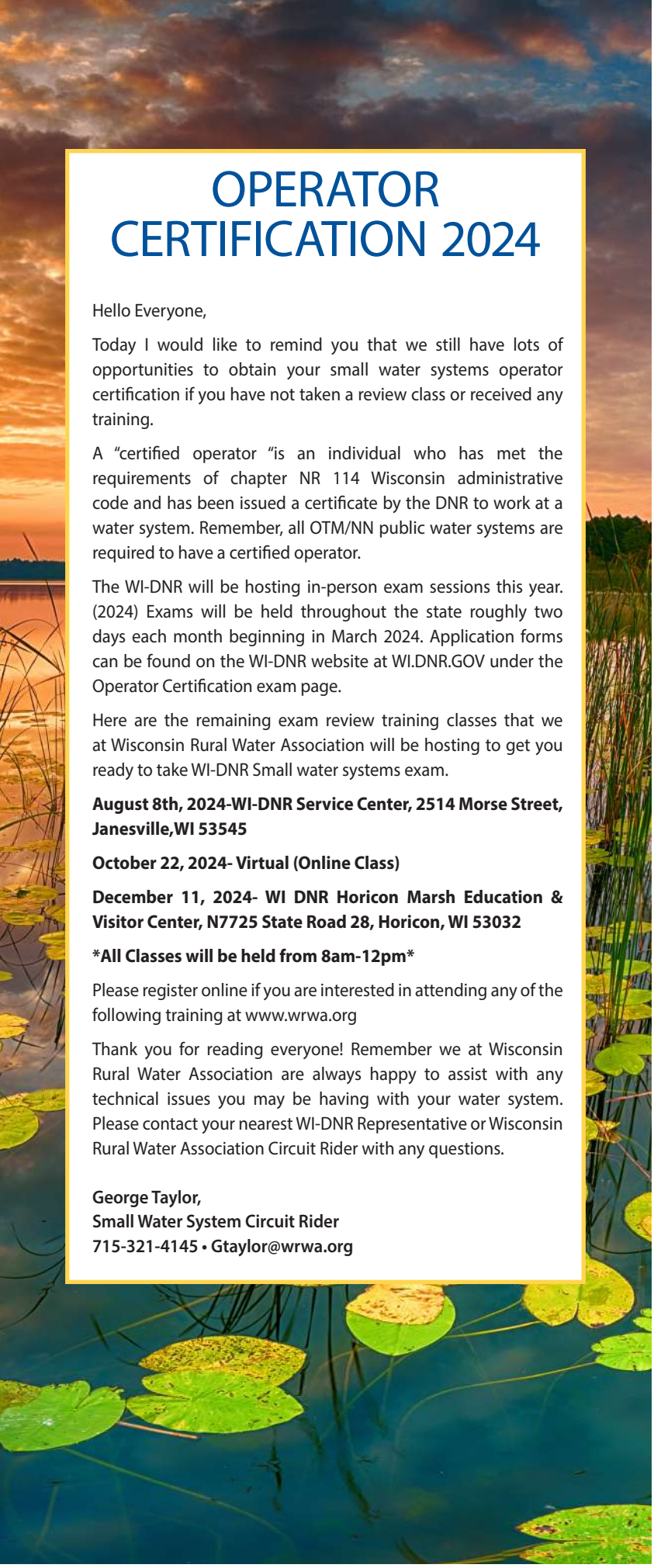
Furthermore, there are two types of WET testing. One type of WET test is known as an acute WET test. Acute WET tests are designed to show toxicity during a short-term exposure. Acute tests usually range from 48 to 96 hours and are used to determine what concentration of effluent causes test organism mortality (i.e. death) under controlled (i.e. laboratory) conditions. The other type of WET test is known as a chronic WET test. Chronic tests differ from acute tests by estimating what concentration of effluent will interfere with growth or reproductive capability of test organisms. In order to accomplish this, chronic test time intervals are longer (usually 7 days) and expose the test organisms to effluent over several life stages of the test organisms. Organism responses measured by the chronic WET test include parameters like growth, reproduction, and survival.

Now you might be asking yourself, "Why on earth do we use water fleas and fathead minnows for WET tests?" Well…here is the answer. Species used in WET tests need to satisfy a few requirements. The species need to be sensitive to toxic substances (i.e. wimpy), they must also be a critical component of the environmental food chain (i.e. their survival ensures food chain functionality), and they must also be a good representative of the native organisms that live in receiving water bodies (i.e. indigenous population). Water fleas and fathead minnows satisfy these requirements because they are sensitive, they are abundant in Wisconsin waters and are important for food chain viability. We can also think of water fleas and fathead minnows as indicator organisms in these tests because their response to being introduced to effluent is a good way to estimate what may be happening in the environment where wastewater treatment effluent is being discharged.

So now that you know a little more about WET testing you can breathe a sigh of relief (said no one…ever). But seriously, if any operators out there have any more questions about WET testing or really anything wastewater related, please give me a call or write me an email. If I do not know the answer to your question, I probably know someone that does!

ONE LAST THING – MARK YOUR CALENDARS *for the WRWA Outdoor Expo on August 22nd! It is a great way to earn some continuing education credits and also a great way to meet some folks in the industry.*

Thanks, and have a great summer, *Tony*



OPERATOR CERTIFICATION 2024

Hello Everyone,

Today I would like to remind you that we still have lots of opportunities to obtain your small water systems operator certification if you have not taken a review class or received any training.

A "certified operator "is an individual who has met the requirements of chapter NR 114 Wisconsin administrative code and has been issued a certificate by the DNR to work at a water system. Remember, all OTM/NN public water systems are required to have a certified operator.

The WI-DNR will be hosting in-person exam sessions this year. (2024) Exams will be held throughout the state roughly two days each month beginning in March 2024. Application forms can be found on the WI-DNR website at WI.DNR.GOV under the Operator Certification exam page.

Here are the remaining exam review training classes that we at Wisconsin Rural Water Association will be hosting to get you ready to take WI-DNR Small water systems exam.

August 8th, 2024-WI-DNR Service Center, 2514 Morse Street, Janesville,WI 53545

October 22, 2024- Virtual (Online Class)

December 11, 2024- WI DNR Horicon Marsh Education & Visitor Center, N7725 State Road 28, Horicon, WI 53032

All Classes will be held from 8am-12pm

Please register online if you are interested in attending any of the following training at www.wrwa.org

Thank you for reading everyone! Remember we at Wisconsin Rural Water Association are always happy to assist with any technical issues you may be having with your water system. Please contact your nearest WI-DNR Representative or Wisconsin Rural Water Association Circuit Rider with any questions.

George Taylor,
Small Water System Circuit Rider
715-321-4145 • Gtaylor@wrwa.org

CORPORATE GOLD MEMBERS

2024 OPERATOR EXPO

Jesse Hass,
WRWA Wastewater Trainer

This year our expo will be held on August 22nd at our office in Plover.

For those of you I meet during classes or visits, one thing you have probably heard me talk about is WRWA's upcoming events. The event I enjoy promoting the most happens every August. The event is WRWA's Annual Outdoor Expo. This year our expo will be held on August 22nd at our office in Plover. This August will be WRWA's 23rd Expo. The first expo was held in Columbus in 2002. A few hundred people attended the expo in Columbus, and we quickly outgrew the space. In 2004 the expo was moved to Plover and 300 people attended the first Outdoor Expo in Plover. Through the years the expo has more than doubled in size from our first year in Plover. In 2019 we had our biggest expo to date and then Covid hit and in 2020 we had to improvise and hold a virtual expo. Coming out of Covid we had to improvise our schedule because we were unable to hold an Annual Conference in the spring in both 2019 and 2020 so we held the expo in June of 2020 and the conference in the fall of 2020. The last few years we have been back on schedule typically the 4th Thursday in August. Last year we had a near record attendance with 706 attendees.

When you arrive in Plover for this year's expo you will see the land we purchased being prepped for the expo in 2025. Last year we purchased the land to the west of the office and are in the process of creating some more parking and space for more outdoor booths. The expo has experienced growth both with attendees and vendors. The first expo in Columbus had a handful of vendors and last year we had 86 vendors set up at our show. I would like to take this opportunity to thank all the vendors who attend our expo. They make the expo special by bringing in their knowledge and equipment to make our expo one of the best in the country. The vendors bring in vac-trucks, heavy equipment, mobile trailers and an assortment of relevant equipment to the water and wastewater industry. I would like to thank all our vendor members who attend the expo every year. Especially the gold members who are major supporters of WRWA.

Our gold members at time of this article are Ayres Associates, Northern Lake Service, B & M Technical Service, MSA Professional Services, Davy Engineering, Adaptor Inc., KLM Engineering, MacQueen Equipment of WI, Municipal Well & Pump, American Flow Control, Water Well Solutions Service Group Inc., Energenecs, Ferguson Waterworks – Davies, Cedar Corporation, Core & Main, L.W. Allen, Inc., Midwest Meter, Inc., Commercial Testing Laboratory, Inc., Lane Tank Co., Inc. Martelle Water Treatment, CBS Squared, Inc., Short Elliott Hendrickson Inc., CTW Corporation, R.N.O.W., ETNA, JWR, Inc., James Orr Coating Inspection, LLC, Advanced Microbial Solutions, RES, Crescent Electric Supply Company, Roth Professional Solutions, Corrim Company FRP, LLC, HydroCorp, and Wisconsin Pump Works.

This year we are hoping to have over 90 vendors in attendance for the expo. Along with having the different equipment available at the expo there are usually product demonstrations going on at booths throughout the day. We added a 2nd classroom a few years ago so there are two rooms with classes being taught every hour. One room has a water focus and the other room has a wastewater focus. The expo is approved for 6 water or wastewater continuing education credits. There is plenty of opportunities to gain knowledge through classroom learning, product demonstrations, talking to vendors and talking to other operators. We also usually have booths set up by the DNR and USDA-Rural Development. If you attend the expo, you will also receive a t-shirt and lunch. The day is capped off with a raffle with prizes donated by our generous vendors.

I look forward to seeing familiar faces and I hope to see many new faces at this year's Outdoor Expo. I tell most operators to give it a try if you haven't been to the expo before. Most operators who attend the expo and see what it has to offer tend to keep coming back. It's conveniently located in Plover which is centrally located in the state. For those of you with longer drives, I think the long drive is worth it for the valuable knowledge and experience gained.

Jesse

CORPORATE GOLD MEMBERS

ELECTRIC MOTOR EFFICIENCY

Why should I update to newer high efficiency motors?

Matt Rettler,
WRWA Energy Efficiency Circuit Rider

Improved efficiency translates directly into financial savings through reduced energy consumption and lower operating costs.

Electric motors are found everywhere in modern technology, powering everything from household appliances to industrial machinery. Understanding electric motor efficiency is crucial for maximizing energy savings and reducing operational costs. I will explore what electric motor efficiency entails, how it can save money, and why upgrading to more efficient motors presents a financially beneficial opportunity.

Electric motor efficiency refers to how effectively an electric motor converts electrical energy into mechanical energy. It is typically expressed as a percentage and represents the ratio of mechanical power output to electrical power input. Efficiency is influenced by various factors including motor design, size, load conditions, and operational practices. Efficiency is a critical consideration because it directly impacts energy consumption and operational costs. A more efficient motor requires less electrical input to achieve the same mechanical output compared to less efficient motors. If a motor is rated at 90% efficiency, then it converts 90% of the electrical energy into mechanical energy while the remaining 10% is lost to heat.

Improved efficiency translates directly into financial savings through reduced energy consumption and lower operating costs. Higher efficiency motors consume less electricity for the same mechanical output. Over time, this translates to significant savings on your utility bills, especially for motors running continuously or at high duty cycles. High efficiency motors often operate at cooler temperatures due to reduced energy losses as heat. Cooler operating motors typically extend the lifespan of motor components such as bearings and windings, which in return means less maintenance and reduced replacement costs. It is critical that maintenance involves keeping motors free of dirt and allows them to run as cool as possible for lowest energy consumption. Some areas have regulations that stipulate energy efficiency as a standard in new construction or upgrades. Always check that you are compliant with any regulations or requirements when doing upgrades.

So why should you consider high efficiency motors as an upgrade to your facility? In most instances you will see long-term cost savings. Although efficient motors may have a higher initial cost compared to less efficient models, the savings in energy costs over the motor's lifespan typically outweighs this initial expense. Payback periods for motor upgrades are often relatively short, especially in applications with high energy consumption. Another benefit of efficient motors is improved reliability. Efficient motors are often built with higher quality materials and design features that enhance long motor life and reduced downtime. Beyond the financial savings, upgrading to energy efficient motors reduces carbon emissions and environmental impacts.

Electric motor efficiency is not just a technical metric, but a significant financial consideration for any water or wastewater facility. By investing in more efficient motors, facilities can realize substantial energy savings, reduce operational costs, and achieve long-term environmental sustainability. If you have any concerns about the impact your aging motors may be having on your facility, give me a call for a complete onsite review of any potential money savings that are available. I can provide vital information as to the potential savings of upgrading to a more efficient motor and how that will have an impact on your bottom dollar.

Matt

CORPORATE GOLD MEMBERS

USDA and Rural Water
An Essential Partnership

Matt Holmes,
CEO of National Rural Water Association.

It is crucial that Congress continues to support these investments to protect the health and safety of rural Americans and keep our communities economically viable.

Just as water is essential to everyday life, the United States Department of Agriculture's (USDA) Programs are vital to rural America in keeping water and wastewater services available. It is crucial that Congress continues to support these investments to protect the health and safety of rural Americans and keep our communities economically viable. In recent appropriations bills, Congress has cut funding to programs specifically designed to help rural Americans. With such major funding cuts, programs for rural communities are now at risk, which is why the time to act is now.

Over the last 80 years, through the billions of dollars in financial assistance stewarded by USDA Rural Development and its predecessor agency, the Farmer's Home Administration, our nation has made great advancements in the standard of living in rural America. Millions of rural Americans now have access to safe drinking water that their parents never did. Thousands of rural communities now have wastewater systems that have eliminated millions of questionable septic tanks, cesspools, straight pipes, and worse.

Rural Development is the only federal agency created by Congress to serve rural America specifically. They are rural America's trusted partner – and Congress needs to know that you support them. The needs are still great; 91% of the country's water systems serve

communities with fewer than 10,000 persons – that's 44,924 systems. A majority of the total water systems (54%) serve less than 500 people. These communities are the heart of Rural Development's Water and Environmental Programs (WEP) portfolio and the sole focus of National Rural Water Association's technical assistance programs.

The impact of this investment is immeasurable. Rural Development, more than any other agency, is responsible for building the engine of economic development in rural communities, keeping them vibrant, and providing dramatic improvements to the environment and public health. We are proud to stand alongside Rural Development's field staff as a partner in their mission. Rural Development's field staff and the

number of field offices have been reduced dramatically over the past decades. In an era where problems and division receive most of the attention, we need to recognize the tremendous success and impact these programs have provided in rural communities within every state and territory of this nation. We commend Rural Development's staff for continuing to meet the mission and doing more with less.

Unfortunately, it can be difficult for the general public to grasp the issues caused if infrastructure improvements are not made to infrastructure and training is not supported. Water and wastewater systems need the funding that USDA provides to improve their systems. Without this funding, systems have a larger burden to find additional resources to cover costs, or the alternative is to raise rates to cover the costs of upgrades, putting more stress on already economically disadvantaged communities. Rural water and wastewater systems are vital for the health and safety of Americans.

By supporting USDA WEP programs through appropriated funding, Congress is supporting the effort to ensure safe drinking water and clean wastewater is a reality for all Americans. Next time you turn on the tap, think about the people who make this possible and ask Congress to support Rural Water, USDA Rural Development, and specifically USDA WEP Programs. Safe drinking water and clean wastewater are something everyone in America should have access to, whether they live in a town of 60 or 600,000. These programs ensure this is a reality for all, today and for generations to come.

Matt

CORPORATE GOLD MEMBERS

Analyzing Nitrate Trends in Wisconsin

Andrew Aslesen,
WRWA Source Water Specialist

We get calls or our circuit riders talk to operators about Nitrate issues fairly regularly.

Last June I wrote about Nitrate trends in Wisconsin and how most counties in the state have an increasing trend in Nitrate concentrations in groundwater. Wisconsin's Groundwater Coordinating Council repeatedly lists Nitrate as the state's most widespread groundwater contaminant in their annual report to the legislature (https://dnr.wisconsin.gov/topic/Groundwater/GCC). Figure 1 shows the Mean Nitrate levels in public wells in each county. This includes not only municipal water systems, but all other categories of public water system, which includes Municipal, Other-than-municipal, Transient non-community and Non-transient non-community public water systems. Since I presented the scope of the issue last year, I thought that this year I would share some of the work being done by WRWA's Source Water Protection Program to combat the issue.

We get calls or our circuit riders talk to operators about Nitrate issues fairly regularly. Sometimes these come when Nitrate levels have already exceeded the drinking water standard of 10 mg/L and installing treatment is the only option. A lot of the time the Nitrate levels are just starting to creep up or have recently jumped up a little bit from the norm and maybe all that needs to be done is monitor the situation more closely. Sometimes, however, what is needed is to take a deeper look into the situation and evaluate potential actions that could be taken to help mitigate the increasing nitrate levels.

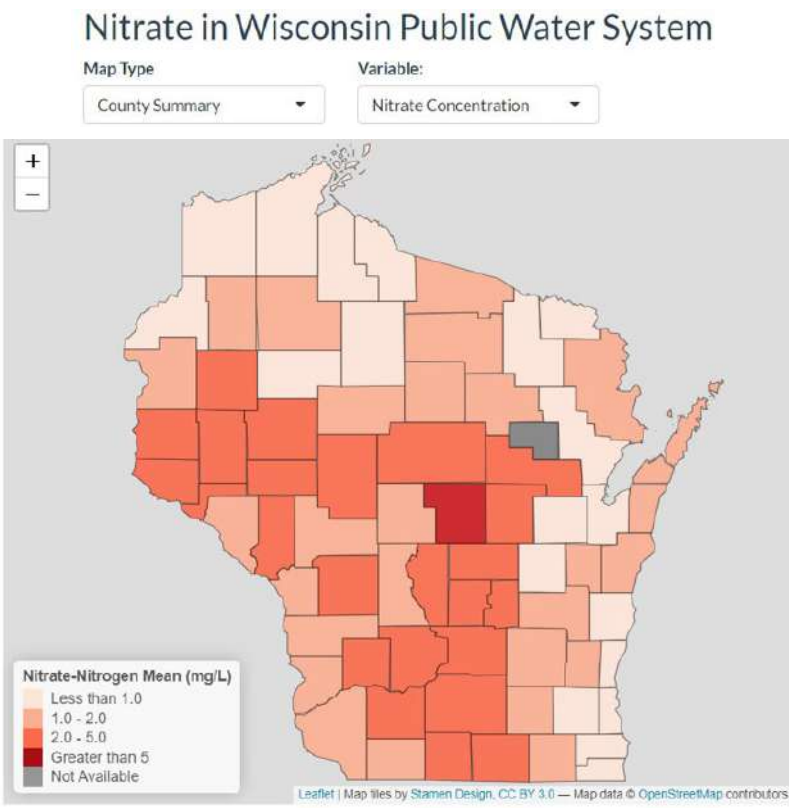


Figure 1: Nitrate concentrations in Wisconsin Public Water Systems. From: Center for Watershed Science and Education, URL: https://uwsp-watershed-center.shinyapps.io/WI_NITRATE_TRENDS/

Recently I have been thinking about how I can share some of the source water protection work that we have been doing related to Nitrate. I decided to use ESRI StoryMaps. First of all, for anyone who may not know, ESRI stands for Environmental Systems Research Institute, Inc. They are the largest Geographic Information Systems (GIS) software provider in the world. They provide a variety of digital mapping software products, one of which is an online story telling platform called StoryMaps. It basically allows you to create a story telling website with interactive maps and media in a short period of time using their pre-made templates and themes. As an added bonus, since StoryMaps is live online, they can easily be updated as projects progress. Our Nitrate StoryMap can be found on the Rural Water website under the "Resources" tab, then "Other Resources" on the drop down and finally the "Source Water Protection" tab. Alternatively you can type the following URL into a web browser: https://www.wrwa.org/other-resources/ . From there you click the link to our Nitrate Technical Assistance StoryMap. You will find a map showing several points on it, each corresponding to a community that we have provided technical assistance on Nitrate questions. You can click on each point, and it brings up the name of the community and another link which will take you to a separate StoryMap for that community which provides additional details on the technical assistance we have provided. I plan to continue to add and update this page as we do additional Nitrate work around the state.

Like always, if you have questions or want to talk about nitrate, feel free to reach out; Andrew Aslesen, WRWA Source Water Specialist at Aaslesen@wrwa.org or call 715-321-3451. *Andrew*

CORPORATE GOLD MEMBERS

WRWA
Wisconsin Rural Water Association

WRWA Mission:
Assisting, educating and representing our members in the Water & Wastewater Industries.

Laboratory LODs

Brooke Klingbeil,
WRWA EPA Wastewater Technician

According to the WDNR Lab Accreditation program, the most frequent deficiencies identified during audits are related to the determination of the MDL using the "new" procedure.

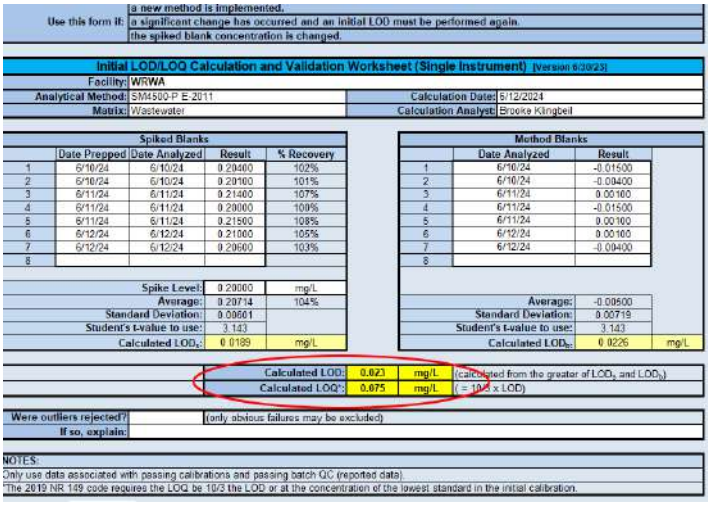
Summer has officially arrived, although in a less-than-ideal manner. If it's not cold and raining, and we finally break 70 degrees, we are met with 30mph winds. When temperatures do rise above 80 degrees, they bring along clouds, wind, and more rain. This irregular weather is quite disappointing. In my previous job, the weather typically had little effect on my daily activities. Most of my time was spent inside a climate-controlled room, where the soothing white noise of the BOD incubator and the distinctive scents of raw influent wastewater in the TSS oven created a unique atmosphere. The lab provided a refuge from the unpredictable weather outside. So, let's talk lab!

As of June 18, 2024, the Wisconsin Department of Natural Resources (DNR) Laboratory Accreditation program includes 193 accredited municipal wastewater laboratories. Accreditation for these municipal laboratories is available in two forms: as a certified laboratory, which can perform testing on compliance samples for other facilities, and as a registered laboratory, which conducts testing solely on its own samples. The primary reason for municipal labs to conduct in-house laboratory testing is to provide real-time analytical data essential for treatment process control.

Despite the importance of maintaining an in-house laboratory, going back to 2020, the program loses approximately three municipal laboratories each year, a trend that is concerning. One major reason for this decrease is the retirement or departure of experienced lab staff, leaving a gap in knowledge and motivation that is difficult to fill. Additionally, rising costs associated with labor, laboratory reagents, and equipment pose significant challenges. When equipment becomes outdated or requires replacement, the capital investment needed can be prohibitive, leading some facilities to opt for contracting with commercial laboratories instead.

Many municipal laboratories conduct the 'Base 4' analysis, which includes biochemical oxygen demand (BOD), total suspended solids (TSS), total phosphorus, and ammonia nitrogen. The quality control requirements for these analyses can be complex. In 2016, the EPA revised the method detection limit (MDL) procedure, making the process for determining the limit of detection (LOD) more complex. Previously, the annual LOD study involved analyzing multiple spiked samples on one day (or over a few days for a more realistic LOD). Now, laboratories perform an initial LOD study over multiple days and continue with quarterly spiked blanks. In addition, the new procedure incorporates method blanks in the calculation. This change was made in order to achieve a more realistic LOD.

According to the WDNR Lab Accreditation program, the most frequent deficiencies identified during audits are related to the determination of the MDL using the "new" procedure (now almost eight years old). Common issues include failing to perform the required two spikes per quarter, not using data from different batches, not including two years of spike data, recording method blanks incorrectly, and using initial rather than ongoing LOD values. Since the LOD is recalculated (verified) only once at least every 13 months, it can be a bit daunting to remember all the nuances of the procedure, so let's go over the steps to completing an ongoing LOD.



Use this form if: a new method is implemented; a significant change has occurred and an initial LOD must be performed again; the spiked blank concentration is changed.

Initial LOD/LOQ Calculation and Validation Worksheet (Single Instrument) (Version 6/30/23)

Facility: WRWA
Analytical Method: SM4500-P E-2011
Matrix: Wastewater
Calculation Date: 6/12/2024
Calculation Analyst: Brooke Klingbeil

Spiked Blanks

	Date Prepped	Date Analyzed	Result	% Recovery
1	6/10/24	6/10/24	0.20400	102%
2	6/10/24	6/10/24	0.20100	101%
3	6/11/24	6/11/24	0.21400	107%
4	6/11/24	6/11/24	0.20000	100%
5	6/11/24	6/11/24	0.21500	108%
6	6/12/24	6/12/24	0.21000	105%
7	6/12/24	6/12/24	0.20600	103%
8				

Spike Level: 0.20000 mg/L
Average: 0.20714 104%
Standard Deviation: 0.00501
Student's t-value to use: 3.143
Calculated LOD_C: 0.0189 mg/L

Method Blanks

	Date Analyzed	Result
1	6/10/24	-0.01500
2	6/10/24	-0.00400
3	6/11/24	0.00100
4	6/11/24	-0.01500
5	6/11/24	0.00100
6	6/12/24	0.00100
7	6/12/24	-0.00400
8		

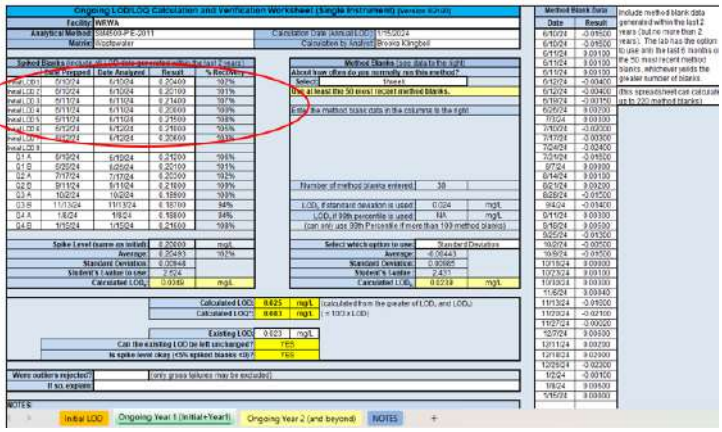
Average: -0.00600
Standard Deviation: 0.00719
Student's t-value to use: 3.143
Calculated LOD_M: 0.0226 mg/L

Calculated LOD: 0.023 mg/L (calculated from the greater of LOD_C and LOD_M)
Calculated LOQ*: 0.075 mg/L (= 10/3 x LOD)

Were outliers rejected? (only obvious failures may be excluded)
If so, explain:

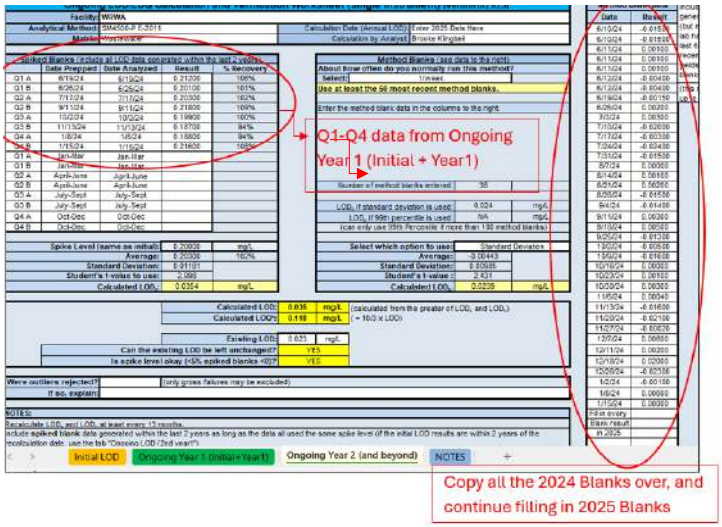
NOTES:
Only use data associated with passing calibrations and passing batch QC (reported data).
*The 2019 NR 149 code requires the LOQ be 10/3 the LOD or at the concentration of the lowest standard in the initial calibration.

Once the initial LOD is complete, document your initial LOD/LOQ, save the file as Initial LOD or similar, and proceed to the second tab labeled "Ongoing Year 1 (Initial+Year1)." The cells will automatically populate the dates from the initial spiked blanks and method blanks. You must then enter the results for these spikes and method blanks from the next year. Continue to analyze two spikes per quarter until next year's spikes are complete. Enter all your method blank data also. The spreadsheet will indicate if a change to your LOD/LOQ is necessary or if you can continue with the existing values. After you have filled in the data from all four quarters, save the file as "2024 TP LOD STUDY" or a similar name.



The next tab is for "Ongoing Year 2 (and beyond)." Here, you will transfer the data from all four quarters of "Ongoing Year 1" along with all analyzed method blanks to the top of the spreadsheet in their corresponding cells.

At this point, you can save the file as "2025 ONGOING TP LOD STUDY" or something similar. Continue analyzing two spiked blanks per quarter on separate analysis days and fill in every method blank result throughout the year. When the data set is complete and you've entered all the method blanks, enter the calculation date and save the file as "2025 TP LOD STUDY" or something similar.

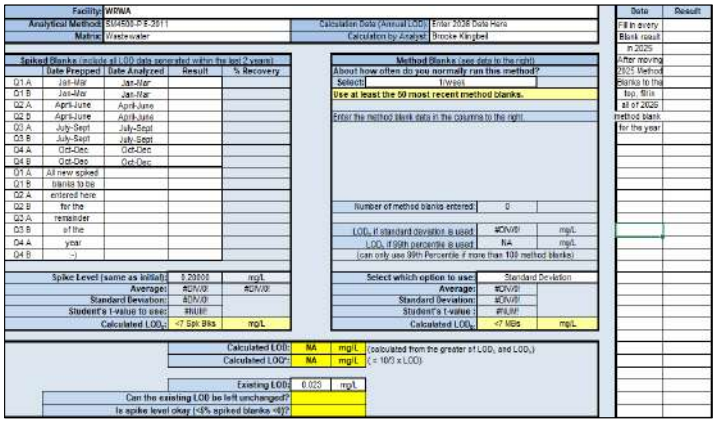


The "and beyond" step can be confusing. Since you must include two years of data, you will need to delete old data from the top part of the spreadsheet and remove the expired method blanks. Once all the expired data has been removed, save the file as "2026 ONGOING TP LOD STUDY"

continued on page 26

continued from page 25

or a similar name. Continue analyzing two spiked blanks per quarter and fill in all the method blanks throughout the year. When the data set is complete and you've entered all the method blanks, enter the calculation date and save the file as "2026 TP LOD STUDY" or something similar. Continue this procedure year after year.



Quality control in a wastewater laboratory is crucial for accurate and reliable results. To improve the results of your next laboratory audit, consider an external pre-audit from WRWA. WRWA's wastewater technicians or I can perform a pre-audit to identify areas for improvement. In addition, the WDNR has provided detailed checklists of what the auditors will be looking for on the WDNR's Lab Accreditation website. If you encounter challenges in the lab, seek technical assistance. WRWA staff can help troubleshoot issues, and consulting with the lab accreditation staff is encouraged. The auditors: Brandy Baker-Muhich, Autumn Farrell, Patty Doerflinger, Brenda Anderson, and Tom Trainor — are there to help. Do not hesitate to reach out to the WDNR; they are genuinely here to assist you.

Stay current by always using the most recent versions of the WDNR's auto-calculating bench sheets which are also provided on the WDNR's Lab Accreditation website. Keep your SOPs regularly updated, especially when new equipment is implemented, there are changes in staff, or methods are updated. Documents and information for the above can be found on the DNR's Laboratory Accreditation website: Laboratory Certification Standards Review Council | | Wisconsin DNR

Remember, maintaining high-quality standards in the laboratory helps to ensure reliable data is generated and supports effective wastewater treatment processes. Please reach out to me if you need any resources or guidance with your wastewater laboratory. Also, stay tuned for a special hands-on laboratory class WRWA's Brenda Staudenmaier and myself will be hosting this fall with the Hach Company. Laboratory accreditation program staff will also be present to answer any questions you may have.

Fairways and Greens,

Brooke

Rural Water
FINANCING AGENCY

Wisconsin Rural Water Association supports Rural Water Financing Agency

The Rural Water Financing Agency provides interim construction funding to borrowers with a USDA takeout (or other approved permanent lender).

The Agency* has made over $1 billion in interim loans to borrowers with a USDA takeout!

Includes the Agency's predecessor organization (Kentucky Rural Water Finance Corporation)

STREAMLINED PROCESS

1. Submit an application online via ruralwaterfinance.com
2. Legal document preparation
3. Construction bidding, USDA takeout letter
4. Interim loan closing, funds available for disbursement
5. Construction completion, USDA loan closing/interim loan payoff

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Please reach out to one of the contacts below to learn more.

Chris Groh, Executive Director
Wisconsin Rural Water Association
cgroh@wrwa.org
715.340.2055

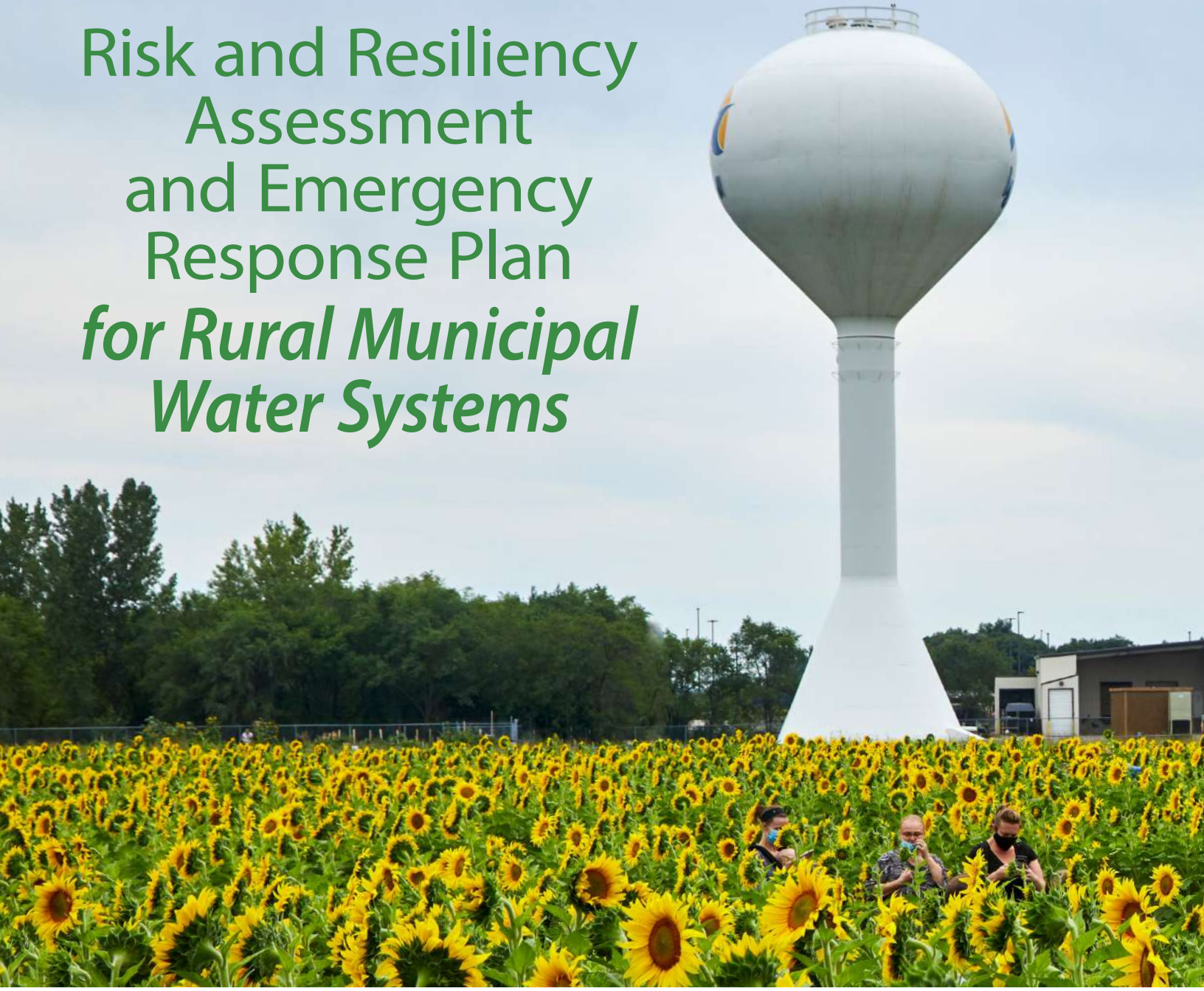
Gary Larimore, President & CEO
Rural Water Financing Agency
g.larimore@krwa.org
270.535.5921

Nick Roederer, Managing Director
Raymond James (Program Underwriter)
nick.roederer@raymondjames.com
502.741.3686

Kristen Millard, Director
Raymond James (Program Underwriter)
kristen.millard@raymondjames.com
859.232.8249

Daniel Olson, Corporate Trust Relationship
Consultant Regions Bank (Program Trustee)
daniel.olson@regions.com
615.770.4357

Risk and Resiliency Assessment and Emergency Response Plan *for Rural Municipal Water Systems*



Seth Petersen,
WRWA EPA Water Technician/Training Specialist

RRA is a thorough evaluation of a public water system to identify potential threats, assess weaknesses, and determine how well your system can handle and recover from potential disaster.

Municipal water systems are essential for public health, economic activities, and overall quality of life. Ensuring their reliability and security is crucial due to the various natural and man-made risks we face. This article explains the important processes of Risk and Resiliency Assessment (RRA) and Emergency Response Plan (ERP) for rural municipal water systems.

UNDERSTANDING RISK AND RESILIENCY ASSESSMENT (RRA)

RRA is a thorough evaluation of a public water system to identify potential threats, assess weaknesses, and determine how well your system can handle and recover from potential disaster. This process is required by America's Water Infrastructure Act (AWIA) of 2018 for water systems serving over 3,300 people, and it must be updated every five

years. (Side note: EPA has an RRA and ERP process for communities under 3,300 that, if done with your EPA Water Technician or Circuit Rider, could earn a Water Operator up to 10 Continuing Education Unit's.)

KEY PARTS OF AN RRA:

- **Risk Identification:**
  - Natural Hazards: Extreme cold, floods, severe storms, droughts.
  - Man-made Threats: Cyber-attacks, vandalism, terrorism, contamination.
  - Operational Risks: Mechanical failures, power outages, supply chain issues.
- **Risk Analysis:**
  - Likelihood Assessment: Estimating how likely each risk is.
  - Impact Assessment: Evaluating the potential consequences on water quality, supply, infrastructure, and public health.
- **Vulnerability Assessment:**
  - Identifying critical assets like treatment plants, distribution networks, and storage facilities.
  - Assessing how exposed and susceptible these assets are to the identified risks.
- **Resilience Evaluation:**
  - Measuring the system's ability to adapt, withstand, and recover from disruptions.
  - Reviewing existing measures and finding areas for improvement.
- **Risk Prioritization:**
  - Ranking risks based on their severity and likelihood.
  - Prioritizing actions to address the most significant risks.

DEVELOPING AN EMERGENCY RESPONSE PLAN (ERP)

An ERP describes what municipal water systems should do during emergencies to ensure continued water service and protect public health. The ERP is based on the RRA findings and focuses on maintaining operations, rapid response, and effective recovery.

Essential Elements of ERP:

- **Emergency Response Team (ERT):**
  - Creating a team with clear roles and responsibilities.
- **Communication Plan:**
  - Developing internal and external communication procedures that ensure reliable communication with employees, emergency services, regulatory agencies, and the public.
- **Response Procedures:**
  - Making specific action plans for different types of emergencies (e.g., contamination, natural disasters).

continued on page 30

continued from page 29

- Establishing immediate response procedures to minimize impact and ensure safety.

- **Resource Management:**
  - Identifying and securing essential resources (e.g., backup power, chemicals, spare parts).
  - Establishing mutual aid agreements with neighboring utilities and emergency services.
- **Public Notification Systems:**
  - Developing strategies for timely and accurate public notifications during emergencies.
  - Using multiple channels (e.g., social media, local media) to reach affected populations.
- **Continuity of Operations:**
  - Ensuring critical functions and services continue during and after an emergency.
  - Developing contingency plans for alternative water supply sources and treatment processes.
- **Training and Exercises:**
  - Conducting regular training and emergency drills.
  - Ensuring all personnel know the ERP and their specific roles during emergencies.

INTEGRATION OF RRA AND ERP

Integrating RRA and ERP is essential for a municipal water system. The RRA provides insights into potential risks and vulnerabilities, directly informing ERP development. This ensures emergency response strategies are comprehensive and effective. The ERP should be regularly updated based on new risk assessments and changing threats. The RRA will identify mitigation strategies to reduce vulnerabilities and make emergencies less of an emergency.

CONCLUSION

Ensuring the safety, reliability, and resilience of municipal water systems is crucial. The processes of Risk and Resiliency Assessment and Emergency Response Planning are essential. By identifying risks, assessing vulnerabilities, and developing comprehensive response strategies, municipal water systems can protect public health, sustain services, and recover quickly from disruptions. This important work lays the foundation for a secure and resilient future for our communities. Please reach out to a WRWA Water Technician or Circuit Rider for assistance in developing a RRA and ERP for your community.

Have a great summer!

Seth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2024 Outdoor Expo

EXPO INDIVIDUAL REGISTRATION INFORMATION

August 22, 2024 - WRWA State Office/Technology Center
350/351 Water Way, Plover, WI
East of Highway 39/51 and north of County Highway B

GENERAL INFORMATION

WRWA Outdoor Expo will be held Rain or Shine

Water/Wastewater training CEC's offered
FREE safety T-Shirt with paid attendance

INDIVIDUAL REGISTRATION FORM

System/Firm_____

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Attendee Name_____ DNR Cert. # _____

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Attendee Name_____ DNR Cert. # _____

Address_____

City_____ State_____ Zip_____

Phone_____email_____

Cancellation date August 2, 2024

Pre-Registration

Attending ___ x $85 = _____

Onsite Registration

Attending ___ x $95 = _____

Send payment and form to: WRWA, 350 Water Way, Plover, WI 54467

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Go to www.wrwa.org - MUST fax completed form(s) to (715) 344-5555 or email the completed form(s) to wrwa@wrwa.org

Questions Please Cal WRWA at (715) 344-7778

2024 Outdoor Expo

WRWA OUTDOOR EXPO 2024 AGENDA

Thursday, August 22, 2024 ~ WRWA State Office & Technology Center

350/351 Water Way, Plover, WI 54467

(6 Municipal Water and 6 Wastewater Credits)

Office Building Classroom

8am – 9am	Got P? Lagoon Phosphorus Treatment Methods. Patrick Ingle, Triplepoint Environmental *(WRWA Corporate Member)*
9am – 10am	Upgrading BOD & Ammonia Treatment Capacity for Small & Rural Communities & Giving a Second Life to Aging WWTPs. Juntao Li, *Technologies Ecofixe, Inc.*
10am – 11am	Navigating a Lagoon-Based WWTP Upgrade. Lenny Larson, ISG *(WRWA Associate Member)*
11am – 12pm	What you should do early to keep your pump running longer. Joshua Voigt, Flygt a Xylem Brand *(WRWA Associate Member)*
12pm – 1pm	Working Lunch and Product Demonstrations (outside)
1pm – 2pm	Troubleshooting Check Valves. Doug Sprangers & Mike Barreau, Dorner Company *(WRWA Corporate Member)*

Technology Center Classroom

8am – 9am	PFAS Detected... Now What? Brad Stuczynski, PE & Jason Kirsenlohr, MSA Professional Services, Inc. *(WRWA Gold Member)* & City of Adams, WI *(WRWA System Member)*
9am – 10am	Fall Checklist: Preparing Your Water Storage Tanks for Winter. Dan Popehn, KLM Engineering, Inc. *(WRWA Gold Member)*
10am – 11am	Anatomy of a Service Lateral. Calvin Williams, A.Y. McDonald Mfg. Co. *(WRWA Associate Member)*
11am – 12pm	Just Because a Tank Coating Looks Good Doesn't Mean it is Good. James Orr, James Orr Coating Inspection, LLC. *(WRWA Gold Member)*
12pm – 1pm	Working Lunch & Safety Review and Product Demonstrations (outside)
1pm – 2pm	Hydrostatic Testing Procedures for Ductile Iron Pipe. Shawn Smith, McWane Ductile *(WRWA Associate Member)*

RURAL AMERICA RELIES ON RURAL DEVELOPMENT

NRWA NATIONAL RURAL WATER ASSOCIATION

USDA RURAL DEVELOPMENT WATER PROGRAMS ENSURE AFFORDABILITY

AFFORDABILITY FOR RURAL COMMUNITIES

Affordability is the key factor for small and rural communities in their decisions to upgrade and enhance water services for their customers.

Skyrocketing construction costs, disrupted supply chains, and ever increasing regulatory requirements are just a few of the roadblocks rural America faces when financing critical water infrastructure.

Rural Development's Water and Waste Disposal Loan and Grant Program is a lifeline for rural America, funding clean and reliable water systems nationwide.

America has 49,397 community water systems, most of which are small. Small and rural communities lack economies of scale. Passing the costs of unfunded mandates onto customers is not feasible without assistance from USDA Rural Development.

91%
of America's water systems are small

Grant costs can cover up to 75% of total development costs for the most vulnerable communities, which is necessary to provide affordable rates. For the majority of small and rural communities, a grant/loan mix is critical to keep projects affordable. USDA RD needs an adequate amount of baseline grant funding to maintain their mission to serve rural America.

Today's Congressional policies and funding decisions are jeopardizing the ability of every community in rural America to keep water and wastewater services affordable. Budget cuts will leave USDA WEP unable to accomplish its mission. WEP is instrumental in helping rural America maintain affordable and sustainable water access for all rural people.

PROMOTION BY THE NATIONAL RURAL WATER ASSOCIATION

USDA RURAL DEVELOPMENT WATER & ENVIRONMENTAL PROGRAMS (WEP)

For many underserved communities, USDA Rural Development is the lender of first opportunity. RD exclusively serves small and rural communities. Without this program, many rural Americans will lose access to affordable safe and clean water.

In 2023, WEP excelled in their mission to serve rural America:

72% of WEP funded projects benefited communities with populations of 2,500 or less.

45% of WEP funded projects benefited communities with populations of 1,000 or less.

TELL CONGRESS NOW

KEEP RURAL AMERICA STRONG!

Scan the QR Code to learn more about how you can help keep Rural America Strong!

RURAL AMERICA RELIES ON RURAL DEVELOPMENT

NRWA NATIONAL RURAL WATER ASSOCIATION

USDA RURAL DEVELOPMENT WATER PROGRAMS DRIVE ECONOMIC OPPORTUNITY

ECONOMIC VITALITY FOR RURAL COMMUNITIES

Critical infrastructure, including adequate water service, is a basic requirement for a healthy economy, encourages employment opportunities and makes a community a desired place to live and work. The nearly 45,000 water systems in rural America are anchor institutions in their communities.

In many rural communities water infrastructure is past its useful life. Without adequate water and sanitation services, businesses move out of our rural communities, forcing the next generation to leave to find better opportunities. Those left behind are robbed of hope for a prosperous future.

Rural America's economy is driven by entrepreneurship, and made of a diverse range of operations through over 700,000 businesses. Rural areas produce most of the food we consume, provide lumber and other forest products used to build our homes and furniture, and supply the energy we consume daily.

Rural economies are deeply connected to their urban counterparts

USDA RD WEP not only provides essential services to the families that live in rural America, but also all business activities. These include small businesses, farming, manufacturing, emergency services, and more. In rural America, nearly 85% of all business establishments are small. These small businesses are critical to local economies, employing 54% of workers in their communities. Rural communities need access to funding through USDA RD WEP to thrive.

Today's Congressional policies and funding decisions are jeopardizing the economic vitality of every community in rural America. Budget cuts will leave USDA WEP unable to accomplish its mission. WEP is instrumental in helping rural America increase economic opportunities for all rural people.

PROMOTION BY THE NATIONAL RURAL WATER ASSOCIATION

USDA RURAL DEVELOPMENT WATER & ENVIRONMENTAL PROGRAMS (WEP)

In 2023, USDA RD WEP funded over $1.7 billion in projects to small and rural communities.

The average median household income for communities that received WEP funding was $37,029, half of the national average household income of $74,580.

In 2023, 308 WEP projects addressed health and sanitary challenges and 28,326 new connections provided drinking water to residents for the first time, resulting in over 400,000 individuals and households benefiting from this funding.

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RURAL AMERICA RELIES ON RURAL DEVELOPMENT

NRWA NATIONAL RURAL WATER ASSOCIATION

USDA RURAL DEVELOPMENT WATER PROGRAMS PROTECT PUBLIC HEALTH

PUBLIC HEALTH FOR RURAL COMMUNITIES

Water is a vital resource and is required for all aspects of daily life, including drinking, cooking, washing, and flushing. In order to protect public health, all Americans should have access to this resource through reliable infrastructure.

Rural America's 46.1 million residents deserve safe drinking water and clean wastewater treatment just as much as urban or metropolitan residents. While access to basic water infrastructure may be taken for granted by many American citizens, it still is not a reality for approximately 146,000 rural households.

Over the last 70 years, through billions of dollars in financial assistance through USDA RD, the U.S. has made great advancements in the standard of living in rural America. Millions now have access to safe drinking water that their parents did not have. Thousands of rural communities now have modern wastewater systems, eliminating millions of failed septic tanks, cesspools, straight pipes, and worse.

For the 27,500 public elementary and secondary schools, approximately 9.8 million students, and 1,810 hospitals in rural America, public health would be immediately jeopardized without safe drinking water and clean wastewater treatment.

Even for established water and wastewater systems, new regulations such as EPA's recent PFAS and Lead and Copper Rules results in costly operational and infrastructure upgrades. USDA RD WEP ensures rural America and its communities have access to funding when they are faced with making these upgrades to remain in compliance.

Today's Congressional policies and funding decisions are jeopardizing the public health of every community in rural America. Budget cuts will leave USDA WEP unable to accomplish its mission. WEP is instrumental in helping rural America ensure public health is protected for all rural people.

PROMOTION BY THE NATIONAL RURAL WATER ASSOCIATION

USDA RURAL DEVELOPMENT WATER & ENVIRONMENTAL PROGRAMS (WEP)

Since 1972, USDA RD WEP has been the consistent source of support for rural communities to complete necessary upgrades to their water and wastewater facilities.

During 2023, WEP obligated more than $1.6 billion in loans and grants, with 73.5% of projects addressing a health and sanitary issue.

The projects funded support more than 1.1 million rural residents, including approximately 28,326 new service connections.

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RURAL AMERICA RELIES ON RURAL DEVELOPMENT

NRWA NATIONAL RURAL WATER ASSOCIATION

USDA RURAL DEVELOPMENT WATER PROGRAMS CREATE SUSTAINABILITY

SUSTAINABILITY FOR RURAL COMMUNITIES

Small and rural communities rely on access to affordable loan and grant opportunities through USDA Rural Development to make repairs, upgrades, and to build new critical infrastructure for their communities.

While affordable financing is a vital component for these communities, it is not the complete solution. After these projects are completed, the need for training for water and wastewater operators does not go away. Technical assistance ensures the government's and public's investment is secured. For small and rural communities to remain sustainable, they need ongoing training and technical assistance.

Last year, Circuit Riders directly helped to protect the health and safety of 30,721,691 people - 42% of rural America.

1 in 5

Americans Live in a Rural Community

Technical assistance for small and rural communities includes providing training, energy audits, certification, financial management, environmental compliance, governance, and on-site technical assistance necessary to ensure that water and wastewater facilities operate at the highest possible level. Through the grants provided through USDA WEP, these services are provided at no cost through technical assistance providers like NRWA and its State Affiliates. The loss of funding for this essential technical assistance will jeopardize the sustainability of rural water systems and their communities. System managers will be forced to choose between not addressing ongoing operational and management issues or contracting for these services at steep costs.

Today's Congressional policies and funding decisions are jeopardizing the sustainability of every community in rural America. Budget cuts will leave USDA WEP unable to accomplish its mission. WEP is instrumental in helping rural America ensure their communities are sustainable now and into the future.

PROMOTION BY THE NATIONAL RURAL WATER ASSOCIATION

USDA RURAL DEVELOPMENT WATER & ENVIRONMENTAL PROGRAMS (WEP)

State Rural Water Associations in partnership with USDA RD WEP provide the following technical assistance to rural communities:

Circuit Rider Program

Disaster Recovery Circuit Rider Program

Wastewater Technical Assistance and Training Program

NRWA Apprenticeship Program

Manufactured Housing Program

Energy Efficiency Program

Decentralized Wastewater Technical Assistance and Training Program

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NATIONAL RURAL WATER ASSOCIATION

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- Interest rates are at an all-time low.
- More project contractors are available, increasing the number of bids, potentially lowering project costs.
- Fuel costs are low, lowering pipe related costs.
- Most material costs for projects are down.
- Shipping costs for many have decreased.
- Road and water projects are easier to schedule due to decreased volume in traffic.
- Low construction costs and available contractors are not guaranteed to last.

USDA

USDA Rural Development is committed to helping improve the econmy and quality of life in rural America. Offering loans, grants and loan guarantees are some of the ways Rural Development is supporting rural America.

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COLUMBUS UTILITIES

Columbus Utilities is composed of three operating wells, two treatment plants, two in-ground reservoirs, and one elevated tower. The combined capacity of the treatment is 2,500,000 gallons per day, of softened, iron-filtered water. Fluoride, chlorine, and orthophosphate are added to the water just prior to leaving the treatment plants.

Plant #1 is located on the north side of Columbus, it has two wells, a 4-cell iron filter, two Zeolite water softeners, two booster pumps, a 240,000- gallon ground level finished water reservoir, and a 90,000-ground level backwash reservoir. The plant has a rated capacity of 1,500,000 gallons per day. Well #1 is a depth of 575 feet was drilled in 1909. Well #2, also is 575 feet dee and was drilled in 1943. Each well has a capacity of 550 gallons per minute. Each of the two booster pumps has a capacity of 700 GPM.

Plant #2 is located on the southwest side of Columbus, and was put into service on April 27, 1994. The plant has one well, a 5-cell iron filter, three zeolite water softeners, three booster pumps, a 300,000-gallon ground level reservoir, and a 90,000-gallon backwash reservoir. The plant has a rated capacity of 1,000,000 gallons per day. Well #4 was drilled in 1992 at a depth of 677 feet with a capacity of 850 GPM. Each of the three booster pumps has a capacity of 750 GPM.

At the end of 2022, the water distribution system consisted of a 250,000 elevated tower and 180,632 feet (34.2 miles) of water main. The water main ranges in size from 4" distribution main to 16" transmission main. The water tower was erected in 1971. It replaced the 70,000-gallon water tower that was built in 1896 and is now preserved as a historic landmark. There are 375 fire hydrants connected to the distribution system.

Columbus Utilities won the "Best Tasting Water in Wisconsin" in 2023 at the WRWA conference. We were honored to win this award and was not expecting to win it. We then were entered into the NRWA "Best Tasting Water in the United States" at the annual Rural Water Rally February 6-8, 2024 in Washington, D.C. It was the 25th annual Great American Water Taste Test (GAWTT), and we won the gold metal this year for 2024! This was our first entry into this contest and I was a huge unexpected win! We are proud of this award and cherish it for not only ourselves as operators but for our community.

Since winning the GRAWTT it has been busy for us with media and visits from the Wisconsin governor. We have been featured in countless newspaper articles around the state, multiple news companies from the Madison area have come and done interviews and stories, the Wisconsin Public radio has had Jake Tanner on to talk about the award and how to improve water quality. But most importantly the Wisconsin Governor Tony Evers came to our utility office on March 12th for a tour of the facility and to taste the nations best drinking water. It was an honor to have Governor Evers here at our facility, he asked many questions about water quality here in Columbus but also throughout the state plus asked about funding issues for smaller communities like Columbus. Thankfully we had Chris Groh from WRWA and Kevin Mraz from NRWA to help with these questions, but also to get the Governor more information he can take back with him on funding issues and other topics. There was defiantly some pressure having the Governor here but our team here took it in stride and provided the best tour we could give for the Governor and his staff.

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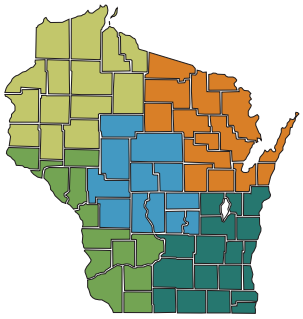

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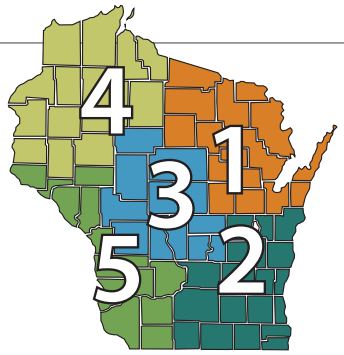
WRWA
System Member List



DISRICT 1 (Northeast)

**2YK, LLC
Algoma
*Allouez
Antigo
*Ashwaubenon
Bailey's Harbor WWTP
Bear Creek
Bellevue
Birnamwood
Black Creek
Bonduel
Bowler
Brazeau Sanitary System #1
Cecil
Clintonville
Coleman
Combined Locks
Crandon
Crivitz
Dale Sanitary District No. 1
Darboy Sanitary District #1
*De Pere
Denmark
Eagle River
Egg Harbor
Elcho Sanitary District
Embarrass
Ephraim
Fish Creek Sanitary District #1
Florence
Forest County Potawatomi
Freedom Sanitary District #1
**Geiss Inc
Gillett
Goodman Sanitary District #1
Grand Chute
*Green Bay
Greenville Sanitary District
Gresham
**Hiawatha Mobile Homes Estates
Hobart
Holland Sanitary District #1
Hortonville
*Howard
Iola
*Kaukauna
Kewaunee
Kimberly
Krakow Sanitary District #1
Lake Tomahawk Sanitary District No. 1
Lakeland Sanitary District #1
**Lakeland Village
Lakewood Sanitary District #1
Laona Sanitary District #1
Lawrence Utility District
Ledgeview
Lena
Little Chute
Luxemburg
Manawa
*Marinette
Marion
Mattoon
Menominee Tribal
*Merrill
**Merrill Area Public Schools
**Natural Beauty Growers
New London
Niagara
Nichols
Oconto
Oconto Sanitary District #1
Oconto Falls
Oneida Nation Utility
Peshtigo
Phelps Sanitary District #1
Pound
Pulaski
Rhinelander
Russell Sanitary District #1
Scandinavia
Scott
Seymour
Shawano
Shawano Lake Sanitary District #1
Shiocton
Sister Bay
Sokaogon Chippewa Community
Sturgeon Bay
Suamico
Suring
**Three Lakes Northernaire Sanitary District
Three Lakes Sanitary District
**Thunder Properties, LLC
Tigerton
Tomahawk
Wabeno Sanitary District No. 1
Waupaca
Wausaukee
Weyauwega
White Lake
**Wisconsin Veterans Home
Wittenberg
Wrightstown
Wrightstown Sanitary District #1

DISTRICT 2 (Southeast)

**7 Mile Fair Inc.
Adell
Albany
Algoma Sanitary District #1
Allenton Sanitary District
**Antioch Storage LLC
Arlington
Ashippun Sanitary District
**Asset Development Group Inc.
**Autumn Ridge Water System, LLC
*Beaver Dam
Belgium
Belleville
*Beloit
Beloit Sewer Department, Town of
Big Bend
Black Earth
Bloomfield
Blue Mounds
Brandon
Brillion
Bristol
Brodhead
*Brookfield, Town of
Brookfield, City of
Brooklyn
Brownsville
Browntown
Burlington
Caledonia Water Utility District
Cambria
Cambridge
Cambridge – Oakland Wastewater Commission
Campbellsport
Cascade
Cedarburg
**Cedar Crest Specialties Inc
Cedar Grove
**Cedar Lake Home
Chilton
Cleveland
Clinton
Clyman
Columbus
**Concordia University Wisconsin
Consolidated Koshkonong Sanitary District
Cottage Grove
**Country Aire Mobile Home Park
Country Estates Sanitary District
**Country View Estates
Cross Plains
**Crystal Lake RV Park
*Cudahy
**Dakota Capital Park
Dane
**Dairyfood USA, Inc.
Darien
De Forest
Deerfield
Delafield
*Delafield-Hartland WPCC
Delavan
Delavan Lake Sanitary District
**Don's Mobile Manor Inc
Dousman
Eagle
East Troy, Town of
East Troy, Village of
Eden
Edgerton
Elkhart Lake
Elkhorn
**Erin School District
Evansville
Fairwater
Fall River
*Fitchburg
*Fond du Lac
Fontana
Footville
**Foremost Farms USA
*Fort Atkinson
*Fox Crossing
Fox Lake
Fox Point
Franklin
Fredonia
Friesland
Fulton
**Geneva National Services
Genoa City
*Germantown
Glenbeulah
*Glendale
**Grande Cheese
**Great Valve Homes Inc.
*Greendale
**Hale Park Meadows Water Trust
Harmony Grove Sanitary District
Harrison
Hartford
Hartland
**HB Performance Systems Inc.
Hilbert
**Holy Family Convent
Horicon
Hustisford
Iron Ridge
Ixonia Sanitary District #1
Jackson
*Janesville
Jefferson
Johnson Creek
Juda Sanitary District
Juneau
Kellnersville
Kewaskum
Kiel
**Kikkoman Foods Inc
Kohler
Lake Como Sanitary District #1
Lake Geneva
**Lake Meadows Water Trust
Lake Mills
Lannon
Larsen – Winchester Sanitary District
LeRoy Sanitary District #1
Liberty Sanitary District No. 1
Lodi
Lomira
Lowell
*Madison
*Manitowoc
Maple Bluff
Maribel
Marshall
Mary Hill Park Sanitary District
Mayville
Mazomanie
McFarland
*Menasha
Menasha Utility District
Menomonee Falls
*Middleton
Milton
*Milwaukee
Mishicot
Monona
*Monroe
Monticello
Mount Horeb
Mukwonago
*Muskego
**Natural Oven's Bakery Inc.
*Neenah
New Berlin
New Glarus
New Holstein
Newburg
North Fond du Lac
Northern Moraine Utility Commission
*Oak Creek
Oakfield
*Oconomowoc
Omro
Oostburg
Oregon
Orfordville
*Oshkosh
Palmyra
Pardeeville
**Pat's Services, Inc.
*Pewaukee, City of
Pewaukee, Village of
*Pleasant Prairie
Plymouth
**Plymouth Joint School District
Plymouth Town Sanitary District #1
Portage
Poynette
*Racine
**Rainbow Lake Manor
Randolph
Random Lake
Reedsville
Reeseville
Rio
Ripon
**Robert William Park Water Assoc
Rochester Sewer Department
**Rock Prairie Montessori School
**Rock River Leisure Estates Cooperative
Rosendale
S & R Egg Farm, Inc.
**St. Benedict's Abbey
St. Cloud
St. Nazianz
Salem Utility District
Saukville
**Shady Hill Mobile Home Park
Sharon
Sheboygan, Town of
Sheboygan Falls
Sherwood
*Shorewood
Shorewood Hills

*Associate Members (Over 10,000 pop.) **Other Than Municipal

Slinger
Somers
*South Milwaukee
Stoughton
*Sun Prairie
**Sunnyfield Acres Water Association
Sussex
**The Knolls Water Co-Operative
Theresa
**Tremain Mobile Home Park
**Trevor-Wilmont Consolidated Grade School District
Troy Center Sanitary District #1
**Twin Lakes Park Co. Op. Inc
*Two Rivers
Union Grove
Valders
Verona
Waldo
Walworth
*Walworth County Metro Sewerage District
Waterford
Waterloo
*Watertown
*Waukesha
Waunakee
*Waupun
*Wauwatosa
**Wendorf Enterprises 2 LLC
*West Bend
Westport
**Wheatland Estates Mobile Home Park
**Wheel Estates, Inc Mobile Home Park
Whitelaw
*Whitewater
Williams Bay
Wind Point
Windsor Sanitary District #1
Winneconne
**Winneconne Community School District
Wyocena
**Yorkville

DISTRICT 3 (Central)

Abbotsford
Adams
Alma Center
Almond
Amherst
Athens
Berlin
Biron
Black River Falls
**Brakebush Brothers, Inc.
Brockway Sanitary District #1
Camp Douglas
Cashton
**Cawley Creek Village Inc.
Chelsea Sanitary District
Chili Sanitary District #1
**Clark Co Health Care Center
Colby
Coloma
**Community Water & Sewer
Curtiss
Dorchester
Edgar
Elroy
**Fox Marquette Estates
Friendship
Gilman
Granton
Green Lake
**Green Lake Conference Center
Green Lake Sanitary District
Greenwood
Hancock
Hatfield Sanitary District 1
Hatley
Hixton
Hustler
Junction City
Kendall
Kronenwetter
Little Green Lake Protection & Rehab. District
Loyal
Lyndon Station
Maine
Marathon
Markesan
*Marshfield
Mauston
Medford
Melrose
Merrillan
Milan Sanitary District
Milladore
Montello
Mosinee
Necedah
Neillsville
Nekoosa
Neshkoro
New Lisbon
Northfield Sanitary District #1
Norwalk
Oakdale
**Ocean Spray Cranberries, Inc. - Tomah
Owen
**Pineland Park Enterprises LTD
Pittsville
Plainfield
Plover
Port Edwards
Princeton
Redgranite
Rib Lake
Rib Mountain Sanitary District
Rome
Rosholt Sewer Commission
Rothschild
Schofield
Silver Lake Sanitary District
Sparta
Spencer
Stetsonville
*Stevens Point
Stratford
Taylor
Thorp
Tomah
Union Center
Unity
Vesper
Volk Field
Warrens
*Wausau
Wautoma
Westboro Sanitary District #1
Westfield
*Weston
Whiting
Wilton
Withee
Wonewoc

DISTRICT 4 (Northwest)

Almena
Amery
Ashland
Baldwin
Balsam Lake
Barron
Bayfield
Bell Sanitary District#1
Birchwood
Bloomer
Boyceville
Boyd
Bruce
Butternut
Cable Sanitary District #1
Cadott
Cameron
Catawba-Kennan Joint Sewage Commission
Centuria
Chetek
*Chippewa Falls
Clayton
Clear Lake
Clover Sanitary District #1
Colfax
Cornell
Cumberland
Dallas
Deer Park WWTP
Downsville Sanitary District
Dresser
Drummond Sanitary District #1
Elk Mound
Emerald – Greenwood Sanitary District #1
Exeland
Fifield Sanitary District #1
Frederic
Glen Flora
Glenwood City
Glidden Sanitary District
Grandview Sanitary District #1
Grantsburg
Hammond
Hawkins
Hayward
Hudson
Hurley
Iron River Sanitary District #1
Joint Water Quality Commission of Danbury & St. Croix Chippewa Indians of WI
Knapp
Knight
Lac Courte Oreilles Public Works Department
Ladysmith
Lake Hallie
Lake Holcombe Sanitary District #1
Luck
Madeline Sanitary District
Manitou Falls Sanitary District #1
Mason
Mellen
*Menomonie
Mercer Sanitary District #1
Milltown
Minong
Montreal
New Auburn
New Richmond
North Hudson
**Northwood School District
Ogema Sanitary District No. 1
Osceola
Park Falls
Phillips
**Pleasant Valley Properties of WI, LLC
Poplar Wastewater
Port Wing Sanitary District
Prentice
Radisson
Red Cliff North
Rice Lake
*River Falls
Roberts
Saxon Sanitary District #1
Sheldon
Shell Lake
Siren
Solon Springs WWTF
Somerset
Spooner
St. Croix Falls
Stanley
Star Prairie
Stone Lake Sanitary District
**Stresau Lab Inc
*Superior Water Light & Power
Superior, Village of
**T.A.P. Investments
Tony
Trade Lake
Turtle Lake
Washburn
Webster
Weyerhaeuser
Wheeler
Winter
**Wisconsin Structural Steel
Woodville

DISTRICT 5 (Southwest)

**Advanced Plumbing Systems
Alma
Altoona
Arcadia
Arena
Argyle
Augusta
Avoca
Bagley
Bangor
Baraboo
Barneveld
Bay City
Belmont
Benton
Blair
Blanchardville
Bloomington
Blue River
Boscobel
Bridgeport Sanitary District
Campbell
Cassville
Cazenovia
Chaseburg
Cobb
Cochrane
Coon Valley
Cuba City
Darlington
**De Soto Area School District
**Dell Creek Estates
Dickeyville
Dodge Sanitary District #1
Dodgeville
Durand
Eastman
Eleva
Ellsworth
Elmwood
Ettrick
Fairchild
Fall Creek
Fennimore
Fountain City
Galesville
Gays Mills
Genoa
Gratiot
Hazel Green
Highland
Hillsboro
Hollandale
Holmen
Independence
Ironton
Kieler Sanitary District #1
*La Crosse
La Farge
La Valle
Lake Delton
Lancaster
Lincoln Sanitary District #1
Linden
Linden Sanitary District No. 1
Edmund
Livingston
Loganville
Lone Rock
Maiden Rock
**Marell Mobile Home Courts
Merrimac
Mineral Point
Mondovi
Montfort
Mount Hope
Muscoda
Nelson
North Freedom
*Onalaska
Ontario
Osseo
Patch Grove
Pepin
Pigeon Falls
**Pinewood Court Inc.
Plain
*Platteville
Potosi-Tennyson
Prairie du Chien
Prairie du Sac
Prescott
Readstown
Reedsburg
Rewey
Richland Center
Ridgeway
Rock Springs
Rockland
Sauk City
Seneca Sanitary District #1
Sextonville
Shelby Sanitary District #2
Shullsburg
Soldiers Grove
South Wayne
Spring Green
Spring Valley
St. Joseph Sanitary District #1
Stoddard
Strum
Trempealeau
Viola
Viroqua
Wauzeka
West Baraboo
West Central Wisconsin Biosolids Facility
West Salem
Westby
Whitehall
Wiota Sanitary District
Wisconsin Dells
Yuba

*Associate Members (Over 10,000 pop.) **Other Than Municipal

Preparing for a Sanitary Survey

Annetta Von Rueden,
WRWA Water Circuit Rider

The sanitary survey is also an opportunity to update the DNR's records, provide technical assistance, and identify potential risks that may affect drinking water quality.

Hello everyone. Hope you are enjoying another summer. Precipitation is bountiful this year, as opposed to last year. July 1st already. Hopefully things will dry up a bit.

Speaking of time flying, this may be the year your DNR water sanitary survey is due. Have three years gone by already? The purpose of a sanitary survey is to evaluate the system's source, facilities, equipment, operation, maintenance, and management as they relate to providing safe drinking water. The sanitary survey is also an opportunity to update the DNR's records, provide technical assistance, and identify potential risks that may affect drinking water quality.

How do you prepare for the survey? Let's take a look. Some items on the checklist may include:

Is the source adequate in protection, physical components, and capacity?

- Has an acceptable wellhead protection program been designed and implemented?
- Are unused wells properly abandoned and reports on file with the DNR?
- Are all sources adequately protected from unauthorized access to facilities, such as fencing, gates around facilities, security systems in place, buildings and windows locked and secure, security lighting installed to deter vandals and break-ins, and good landscaping practices.
- Are well construction reports on file with the DNR and are wells accurately maintained?
- Are the source capacity and the back-up source sufficient to meet current and future demands?

Storage Facilities

- Is the storage capacity sufficient to meet water use demands?
- Are interior inspections done every 5 years with a complete drain down every 10 years.
- Are acceptable contamination prevention methods implemented and the storage facility protected from flooding?
- In the case of ground reservoirs, is emergency power available for pumping?
- Are adequate security measures in place at the storage facility?

Wellhouse – pump facilities

- Is the type of pump(s) and capacity of the pump(s) appropriate and sufficient for the system?
- Does the discharge piping and its subordinate parts meet NR811 requirements?
- Are the pumping controls in good working condition?
- Is there emergency power available to operate the pumps?
- Is the raw sample tap acceptable, and are there any unprotected cross-connections?

Water Treatment

- Is the current treatment acceptable for public health?
- Are softening, sedimentation and filtration processes adequate and in good working order?
- Are the chemical pumps in proper operation, transfer lines and injection points free of build-up?
- Is the chemical storage protected from contamination with an overlapping cover, sealed openings, and made of approved material?
- Are chemical storage / spill containment practices sufficient with chemical handling and spill response protocols in place?
- Is the water system protected from accidental chemical overfeed with an anti-siphon device and power outlet linked with the well pump power?

- Are there any unprotected cross connections within the water system facilities?
- Is the treatment facility O & M complete, and appropriate testing and record keeping practices being used for the testing of the water quality?

Distribution System

- Be sure your distribution system map is available and up to date.
- Are there adequate fire flows throughout the distribution system, and is there adequate system pressure throughout the distribution system? (minimum of 35 psi)
- Hydrant flushing and valve exercising programs should be current. Hydrants flushed every 2 years and valves every 4 years.
- Does the system have an acceptable cross-connection control ordinance and inspection program?

Water Quality Monitoring and Reporting

- Is the monitoring site plan on file with the DNR up to date, or does it need to be reviewed or expanded?
- Are the sampling faucets, locations, and the sampling procedures acceptable?
- Are bench sheets, on-site logs, monthly operational reports, and cross connection reports accurate and up to date and readily available?
- All customer water quality complaints documented and kept on file?

Operator Certification

- Is the operator certified with the appropriate grade of certification, and fulfilled continuing education requirements?
- Is the "operator -in-charge" assigned to the water system and on file with the DNR?

This is a good opportunity to employ good housekeeping measures. Sweep, mop and a fresh coat of paint will look really nice. Pick up any debris laying around such as unused containers, remove and properly dispose.

Remember, your Circuit Rider is here to help. Give us a call anytime.

Looking forward to seeing you all soon!

Annie

Todd Weich,
WRWA Water Circuit Rider

When it comes to a Vulnerability Assessment, the municipality should be assessed to their susceptibility to disasters.

Hello to all! I am assuming this spring and beginning of summer was a busy and wet one for each and every one of you! Speaking of wet; this spring produced more than normal rainfall precipitation. One thing that Wisconsin Rural Water Association can help with for future unexpected mother nature is the development of an Emergency Response Plan. An Emergency Response Plan is a beneficial resource to your Municipality due to the purpose of describing strategies, resources, and procedures not only with natural disasters (wildfires, tornados, flash flooding, long term power outages, etc.) but also man-made, cyber-attacks, and even as small as main breaks and disgruntled employees that threaten life, property, and the environment. Your Circuit Rider is ready to help with the creation of this plan and can make it very detailed or in a format to meet the minimum standards. The Wisconsin Department of Nature Resources (NR 810.23(1)(2)) states that ERPs must include at minimum a list of state and local emergency contacts, a system for establishing emergency communications, any mutual aid agreements that the utility has with other communities (sharing personnel, equipment, and other resources), standard procedures for emergency water production, and a means for communication information.

In addition, WRWA offers assistance with Risk and Resiliency Assessments and Vulnerability Assessments. These 2 assessments are tools we can use to help or identify weakness within the system. Once a weakness is identified, we can address the issues in the Emergency Operations Plan. A Risk and Resilience Assessment shall include the risk to the system from disasters, the resilience of the pipes, intake, treatment, storage and many more areas of the system, monitoring practices of the system, the financial infrastructure, the use and storage of chemicals, and the operation and maintenance of the system.

Keep in mind that Utilities must review, update, and recertify every 5 years!

When it comes to a Vulnerability Assessment, the municipality should be assessed to their susceptibility to disasters. To achieve this, start by conducting a system wide assessment to determine which components are critical to the operation and how they may be affected by a disaster, performing an inventory of the main components (treatment facility, collection system, pump stations, power supply, SCADA, etc.), and lastly identify what improvements and mitigating actions can be taken to lessen the impact of multiple different kinds of disasters while taking into consideration the reliability, susceptibility, maintenance requirements, ease of repair, etc.

There is a lot of detail in the development of an Emergency Response Plan so it will take some time and patience. If you partner with your WRWA Municipal Circuit Rider, it can be a little less stressful!

Todd

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UP THE CREEK

Hunter's Moon

Ken Blomberg,
WRWA past Executive Director

Who among us doesn't marvel at a full moon? Which one is your favorite? I, for one, look forward to autumn's Hunter's Moon - the same one farmers wait for and known as the Harvest Moon. From the Farmers Almanac's list of the full Moon names we find these words, wolf, snow, worm, pink, flower, strawberry, buck, sturgeon and harvest. These annual once-a-year celestial events have influenced man since the dawn of time. Native Americans kept track of the seasons by giving each month's full moon a distinguishing name. Early settlers followed suit and created a few new names of their own.

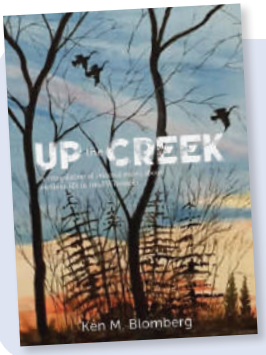
December and winter secure their grips on us around the same time the full Cold Moon appears. At times folks called it the moon before Yule, or a long night's moon. During the cold month of January, wolves howled and the tribes gave the moon its Wolf name. Settlers often called it the moon after Yule. February brought on the heaviest snow and by all accounts the name Snow Moon.

As March brought warmer temperatures and thawing, it also brought earthworms to the surface and hungry migrant birds like robins and woodcock – and the Worm Moon. Other names for this full moon of seasonal change include words like sap and Lent. April invokes thoughts of spring flowers - like herb moss pink, or wild ground phlox, one of the earliest widespread flowers of the spring – thus the Pink Moon. April's full moon also took on names like sprouting grass, egg and fish. But just as April showers brought May flowers, the month of May brought on the Flower Moon, or for some, thoughts of corn planting and milking moons.

June in turn, gave us the Strawberry Moon, acknowledging the short harvest season of this tasty fruit. That brings us to this month's full moon - July's Buck Moon - which occurs while new antlers of buck deer grow and are covered with a velvety fur. At times, this month's moon is called thunder or hay. August's Sturgeon Moon is at times referred to as a red, green corn, or grain moon.

The Harvest Moon of September occurs closest to the autumn equinox. In two years out of three, the Harvest Moon comes in September, but in some years, it occurs in October. The Hunter's Moon of October is often referred to as the blood or sanguine moon. The Beaver Moon occurs in November when a supply of warm winter furs is gathered. At times, it was referred to as the Frosty Moon.

Whatever you wish to call them, full moons tend to stop us in our tracks and make us ponder celestial events. John Alden Knight, author of stories of solunar theories and events and the book Moon Up – Moon Down, once said, "Fish feed, animals move about, birds will sing and fly from place to place, in fact, all living things will become more active, more alive, during certain Solunar (moon) periods than at other times of apparent equal value…and mental conditions (in humans) become markedly aggravated during the full of the moon."



Autographed copies of Blomberg's *Up the Creek, Letters from Art and Wisconsin Bird Hunting Tales* are available from the author at **eaupleinekennels@gmail.com.**

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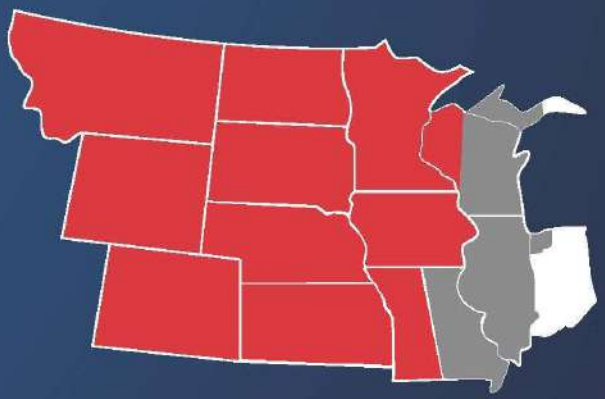

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WRWA Calendar

WRWA Outdoor Expo	August 22, 2024
Office Closed for Labor Day	September 2, 2024
Office Closed for Thanksgiving	November 28 & 29, 2024
Office Closed for Christmas Eve (1/2 Day)	December 24, 2024
Office Closed for Christmas Day	December 25, 2024
Office Closed for New Year's Day	January 1, 2025
WRWA Annual Conference (Green Bay)	March 24 - 28, 2025

WRWA Office Hours:
Monday – Thursday 7:00am – 4:00 pm • Friday 7:00am – 11:00am

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