Wisconsin Rural Water Journal

Fall 2024

16th Annual Water Conservation Poster Contest

Cyber & Physical Security Training

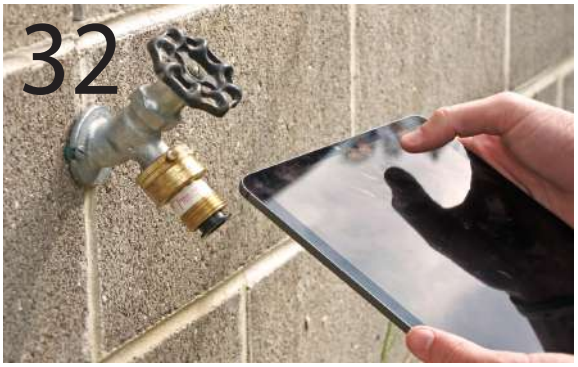
EPANET Modeling a Water System

Hauling Waste to Your Treatment Plant

Impact of Dirty Air Filters on Motor Efficiency

2024 Outdoor Expo Recap

www.wrwa.org



In Every Issue

FEATURES

OFFICIAL PUBLICATION OF THE WISCONSIN RURAL WATER ASSOCIATION

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NRWA NATIONAL RURAL WATER ASSOCIATION
America's Largest Utility Membership

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Message from the President

Dean Bergstrom,
WRWA President, Cumberland

The summer has passed, and fall is upon us. I hope your summer projects have gone well for you, and you can wrap them up before the snow starts flying. Once again, the outdoor expo was a huge success. It was another record-breaking year for attendance and for exhibitor booths. I hope you were all able to take one thing back to your community systems, from the expo, that can help in your daily activities.

The NRWA held their convention September 9th-11th in Savannah, Georgia. Many of our staff and half of our board members attended the conference. Gene Larson and I attended the yearly NRWA annual business meeting. Two board representatives from every state attended this meeting to address business matters of the association and approve appointments to the National Executive Committee. We were also informed on matters concerning federal funding that will be coming down the pipeline in the future. The USDA Rural Development Campaign that Chris has been working on with our Rural Water members is a very important part of our funding process for the next few years. Thank you for filling out the survey that he has been sending out to you all. After this meeting, I attended a sit down with other state board presidents and had a round table discussion regarding many matters including PFAS and the lawsuits between 3M, Dupont, and other pending lawsuits. There are matters that still need to be figured out on how this money will be distributed across the country for utilities that are dealing with PFAS. There will be more information about this in the future.

Gene Larson and I also attended a class about the power of the association, which was led by Bill Simpson and Michael Preston. They handle the legislative affairs in Washington D.C., and they spoke about how strong the NRWA has become. Now all of the representatives at the Capital understand what NRWA is, and the importance of clean drinking water for our Nation. Chris will be asking for letters to your representatives soon, and we would appreciate it if everyone wrote a letter of support for the industry.

Our staff and board members also attended many classes, that are like the classes we have at our Wisconsin Annual Conference. It was a great three days of coming together with all State Associations to learn about our industry.

I hope you have a great fall, and good luck to all who hunt. Until next time, stay safe.

Dean

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

Fall's Changes

Fall brings us through a season of changes which leads us to a long cold season where things are relatively difficult to work on, repair or update at our plants. Just like Spring ushers us through to Summer, where heat restricts our ability to do hard intensive labor. In Fall we are reminded to clean, repair, and prepare for the Winter. This can be one of the more busy times of the year, with limited time to get a lot of work done before the snow arrives. Hopefully we have a long list of "to-dos" that has served us well so many past years. Things are slow to change, generally, in the water/wastewater world since the equipment is expensive and doesn't update for years on end. We serve a stable population, and the infrastructure is mostly well built and installed, so maintenance is not something that is overwhelming.

But just as Fall signals us to start preparing for Winter, our regulatory agencies are signaling us to start preparing for changes coming up soon. Lead inventories are due to be finished by October 16, 2024. Remember when that was so far away? Well, then is now! By October 16, 2024, all public water systems must submit their initial inventory, make their initial inventory publicly available and submit required information about inventory methods and completeness and how the inventory was made publicly accessible. By November 15, 2024, you must send consumer notices to all consumers served by service lines classified as lead, galvanized or unknown requiring replacement. I wouldn't count on a grace period since we had several years to get this done.

For most of us, PFAS testing is a thing of the past, but for around 10% of us we must keep testing and monitoring for this compound. DNR needs data, so any positive test results will have to continually follow the test regiment determined by DNR regulators. Unfortunately, not a cheap thing to do. Make it easier on yourself and just get the testing routine going and tough it out. It is an expense that can maybe be recouped some day, so keep track of your time and materials for future reimbursement (but don't hold your breath).

Fall changes mean something for Wisconsin Rural Water also. We are in the middle of a program that will hopefully bring more funding back into the USDA Rural Development programs for our rural municipalities to use for funding infrastructure upgrades and new construction. This program is going through some funding pains that are worrying us about the ability of our rural systems to maintain and improve their older infrastructure and enable affordability, public health, economic vitality and sustainability. Soon you will be seeing a call for a letter to your congressman from me, asking for their concern to keep this monumental program as viable as it's always been. It is very easy to write such a letter, and we'll be talking about that soon. Everybody should be able to name their congressman and have the chance to speak to them. That's what most of them are there for.

So, while we are enjoying the best parts of Fall, hunting, fishing, colored leaves, cooler weather and all the beauty Fall brings us, please be aware of the call of Fall to get things in order for the next few months. And guess what! We'll be right there to help you with all the things you may need. Count on WRWA to make your seasons better.

Chris

"Like" us on Facebook

We get letters and emails!

We'd love to hear from you…

Good afternoon,

I'm reaching out to thank the WRWA crew with your assistance on our DNR issued Boil Water Advisory.

It wasn't long into our issues (I believe before we were officially under a boil notice) that Herschel our district board member reached out offering assistance through the Wisconsin Rural Water Association. He was very thoughtful with his call and made it clear that he didn't want to come off as intrusive, instead asking if it was okay for him to send resources. He was in contact with Annie, and she was down here within a couple of hours to start flushing hydrants in our system. Annie also returned the next day to continue flushing with our crew and testing chlorine residuals throughout.

I just wanted to take a minute to thank the entire staff at Wisconsin Rural Water for being such an outstanding resource at times like this. Keep up the great work and dedication to educating Wisconsin on safe drinking water.

Sincerely,

The City of Fennimore
Jordan Fritche, Director of Public Works

Good Morning

This Email is support of the WRWA and the amazing employees that have helped me in the past. So far, I have only had the pleasure of meeting Brooke Klingbeil and Todd Weich but I will tell you they are amazing. Having Todd to help with the water side and Brooke on the wastewater side. It's nice knowing that I have help and help can be on site within a few days or less. It's nice having the technical help too, Because I am not an advanced computer person. Brooke has helped me so much this summer with my emergency response plan and my wastewater assessment. I just can't even begin to explain. But she is a treasure. I work on a small Rez and I only have one coworker to run 2 departments. We try our best but having that extra help is awesome.

I truly hope this great organization keeps up the great work cuz us small departments really appreciate it.

Ken McNinch, Public Works Director
Sokaogon Chippewa Community

Dear WRWA Team,

I am writing to express my sincere gratitude for the exceptional support provided by your programs. As a small business, we rely heavily on the resources and connections made possible through WRWA, and your ongoing efforts have been invaluable in helping us better serve our customers.

The conferences you organize are consistently well-attended, and we truly appreciate the opportunity to share water/wastewater/pump knowledge with fellow industry professionals. These experiences not only help us grow as a business but also allow us to contribute to the larger mission of providing clean, efficient, and sustainable water solutions in Wisconsin.

Thank you again for your continued support and dedication. WRWA's work ensures that businesses like ours can stay informed, connected, and empowered to make a difference.

Sincerely,

Janice Peterson, Marketing Manager
Wisconsin Pump Works

Cyber & Physical Security Training

Brenda Staudenmaier,
WRWA Training Specialist

Wisconsin Rural Water Association is hosting a virtual training event on December 16th titled "Cyber & Physical Security for Water and Wastewater Utilities," featuring staff from the Cybersecurity and Infrastructure Security Agency (CISA). This timely training will cover crucial de-escalation tactics, addressing a critical need in the industry. Water and wastewater utility workers frequently encounter challenging situations that demand skillful handling and de-escalation techniques. Here are some common scenarios and strategies for managing tense encounters:

Customer Interactions

SEWAGE BACKUPS

When faced with irate customers dealing with sewage backups in their basements, operators should:

- Remain calm and empathetic
- Acknowledge the customer's frustration
- Explain the situation clearly and outline steps being taken
- Provide estimated timelines for resolution
- Offer resources for cleanup and temporary accommodations if needed

WATER SHUTOFFS AND BOIL NOTICES

During main breaks or contamination events requiring shutoffs or boil notices:

- Communicate proactively through multiple channels
- Have a clear, concise explanation ready
- Provide specific instructions and timelines
- Set up information hotlines and update frequently
- Offer alternative water sources when possible

ENCAMPMENT ENCOUNTERS

When dealing with homeless individuals in restricted areas:

- Approach calmly and respectfully
- Explain the safety concerns necessitating relocation
- Offer information on available shelters and services
- Involve trained outreach workers when possible
- Avoid confrontation and call for backup if needed

FLOODING EVENTS

For residents impacted by overflows and flooding:

- Prioritize safety and evacuation if necessary
- Provide clear information on the cause and expected duration
- Offer resources for temporary housing and cleanup
- Keep residents updated on mitigation efforts
- Be prepared to address concerns about water quality and health risks

WORKPLACE CONFLICTS

To de-escalate tensions with coworkers:

- Address issues privately and promptly
- Listen actively without interrupting
- Acknowledge emotions and validate concerns
- Focus on facts and finding solutions
- Involve HR or management when appropriate

Potential Scenarios:

- Disagreements over shift schedules or workload distribution
- Conflicts arising from miscommunication or misunderstandings
- Frustrations over equipment failures or system malfunctions

THEFT PREVENTION

To deter potential thieves targeting utility vehicles:

- Park in well-lit, visible areas when possible
- Use robust locks and security systems
- Mark tools and equipment with identifiable markings
- Maintain an updated inventory of all vehicle contents
- Train workers on situational awareness and reporting procedures

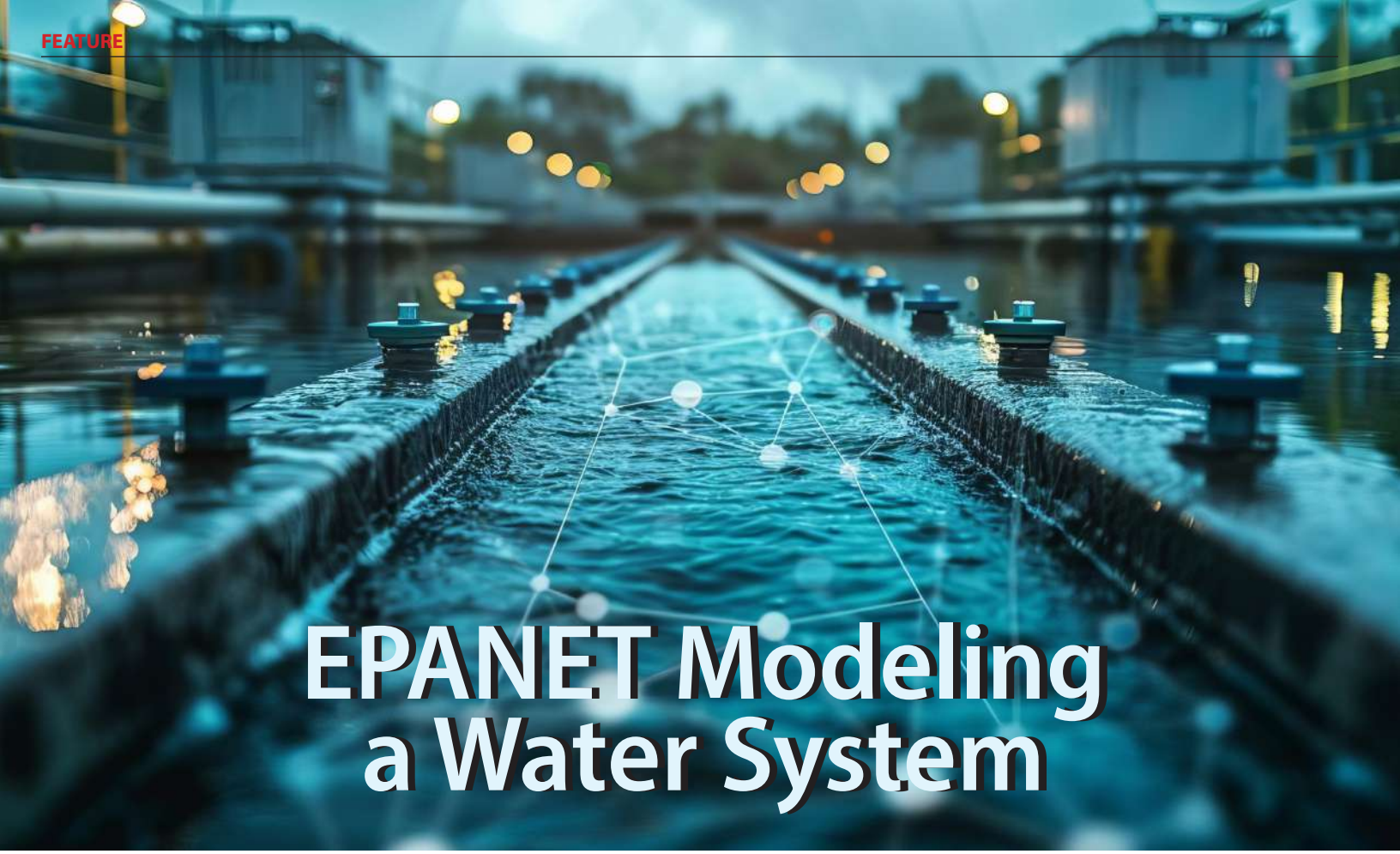
If confronted by a would-be thief:

- Prioritize personal safety above property
- Remain calm and avoid escalation
- Comply with demands if threatened
- Contact law enforcement immediately after the incident
- Provide a detailed description of the suspect and any vehicle involved

By employing these de-escalation tactics, utility workers can help manage tense situations, prioritize safety, and maintain positive relationships with the communities they serve. Use the QR code to find a full list of our training calendar.

Brenda

CORPORATE GOLD MEMBERS



EPANET Modeling a Water System

Dan Wundrow,
WRWA Water Circuit Rider

Once you have a basic water system model, regular testing is crucial to ensure the system functions as it should.

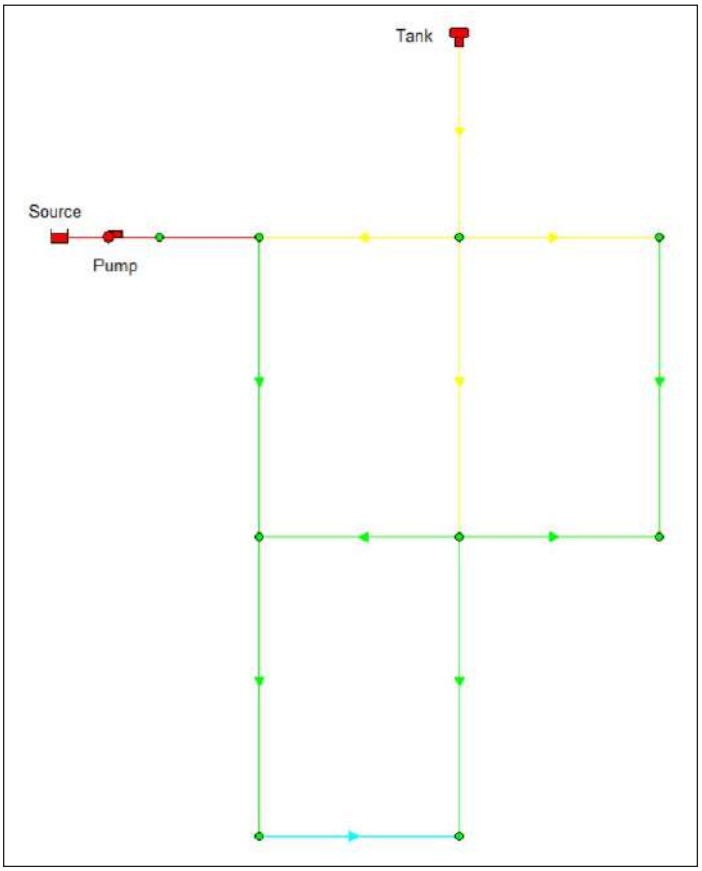
Most of us used to build or play with models as kids, whether we were bored, or our parents were trying to keep us out of their hair. I would lean more towards the latter. We gained some extraordinary skills from building or playing with them. I immensely enjoyed building and painting the model cars, which helped me paint a few trucks and pieces of heavy equipment later in life. Now, what does this have to do with water? Over the last month, I've been exploring a free water modeling program that I believe could be a valuable addition to your work.

This modeling program is similar to what engineers use to help develop your water system and help with water system problems. By no means should you stop consulting with your engineers. This is a tool that can be added to your technology toolbox. Today, we will explain this program and some basic capabilities. This program is EPANET. You can find the link to download it at https://www.epa.gov/water-research/epanet. I want to put this out there right now. This is not a program you will learn in a matter of hours. A 200-page User manual is just the essential operation and a quick start to make a model—the rest you will have to learn as you go.

Like GIS mapping, developing a model of your water system will take time. If you are going to try this, I recommend that you start slow. Spend a few hours a week or a few hours a month developing and making the model accurate. It will also be helpful if you are currently utilizing a platform for GIS mapping. (If you are not, you need to contact one of the WRWA staff to help you get set up with GIS mapping.) To create a model of your system, you will need the pipe's length, the pipe's size, the pipe's elevation, and the pipe's demand. You will also need to know the head and flow of the well pump. You will also need to know the elevation, diameter, minimum, initial, and maximum water levels of the water tower. All of this will give you a very simplistic model of your water system. Once you have a basic water system model, regular testing is crucial to ensure the system functions as it should. I found that running this test regularly as I built a model helped me find my mistakes sooner rather than later. Trust me, you will make mistakes, and that is okay. The user manual is also a good idea for building a model.

What can this modeling program do for you? The possibilities are endless. The training provided with this program delves into a system-wide fluoride treatment, demonstrating how fluoride moves throughout the system, dosage levels at junctions within the model, and the drastic decrease in levels if the fluoride pumps are turned off at intervals. The same can be done with chlorine. I experimented with a model, introducing 0.5ppm of chlorine in the water tower, then turning off the chemical feed pump and running a simple simulation. Within 3 hours, the chlorine level in the water tower and its vicinity dropped to zero, with only a trace remaining in the outer areas of the system. It was fascinating to play with the model and apply different scenarios to see how they would impact water quality.

Another powerful feature is the pressure layer combined with directional flow. Setting the simulator to 72 hours allows you to observe the flow direction and pressure hour by hour. If you then manipulate the system by closing a valve or section of the water main and rerun the test, you can pinpoint where the pressure changes and how the water flow direction shifts in the distribution system. This tool can be a game-changer for those troubleshooting a suspected closed valve, providing insights that could lead to a solution..



The picture above shows a simple set of modeled systems. The water tower and source are being treated with 0.8 mg/L of chlorine. This snapshot was taken five hours into the simulation. You can see that no flow enters the system via the well, and the water tower supplies flow to the system. The water mains adjacent to the tower are yellow, indicating the chlorine level is at 0.5 mg/L. Green indicates a chlorine level of 0.3 mg/L, and light blue indicates a chlorine level of 0.2mg/L. During the simulation, you can observe the well pump turning on, the flow direction, and the chlorine levels changing. It was interesting to see that the section of pipe located further from the chemical addition was notoriously low on chlorine levels. When I changed the size of the water main in that area, I saw a change in the chlorine level in that section of the water main.

The EPANET modeling program is a powerful tool with a steep learning curve. This article only scratches the surface of its capabilities. It will take time and dedication to understand and fully utilize this program. However, the insights it provides are invaluable, giving you a new perspective on your engineers' work and the complexity of developing a model.

I wish you all a happy fall and a successful hunting season. I am ready for some outdoor therapy! *Dan*

CORPORATE GOLD MEMBERS

WASTING

Tony Roche,
WRWA Wastewater Trainer

Wasting is very important to the operation of an activated sludge plant no matter what the configuration.

Hello Wisconsin! I hope everyone has had a great summer! Summertime in Wisconsin always seems to go by incredibly fast, but as summer draws to a close we have more to look forward to including fall colors, hunting season, and Green Bay Packers football. At WRWA our summertime closeout is the Annual Outdoor Expo. If you had a chance to attend the expo this year you probably got to meet up with some old friends and make some new ones too. If you did not get a chance to attend the Expo this year, we hope you can make it to the show in 2025!

Part of my job at WRWA is visiting wastewater treatment plants and helping operators improve plant performance. If you operate an activated sludge plant, whether that be an oxidation ditch, a conventional aeration system, a sequencing batch reactor, or a package plant, a key performance process to remember is the importance of wasting. A common theme between benchmark parameters like sludge age, mixed liquor concentration, and food to microorganism ratio is that all are controlled by wasting. That's pretty cool!

Let's think about sludge age for a minute. Sludge age equals the mass of solids under reaction (that includes mass of solids in aeration basins plus solids in any selector tanks like anoxic zones or anaerobic zones) divided by the rate of mass wasting (mass of solids in your waste activated sludge plus mass of effluent solids). In order to determine mass, you need to know volume (ex: gallons) and concentration (ex: mg/L). Another important thing to remember with sludge age is that every plant is different, and every plant operates well at a different sludge age. Some plants run great at an 8-day sludge age while others may like to run at a 15-day sludge age. No matter what sludge age your plant likes to run at the one common theme between plants is that sludge age is controlled by wasting!

Now let's ponder mixed liquor concentration. Commonly abbreviated as MLSS (mixed liquor suspended solids), your mixed liquor concentration is determined by filtering a known volume of mixed liquor (ex: 100mL) through a filter, drying said filter, and weighing said filter. Most activated sludge plants will operate with a MLSS concentration in the ballpark of 2,500 mg/L, but again every plant is different! Some plants may like to run at 5,000 mg/L and it takes time and good data to determine what MLSS concentration your plant likes to run at. Now MLSS can be controlled by running a thicker blanket in your final clarifier (if you have one) but another common theme between plants is that MLSS concentration is controlled by wasting!

One last topic to ponder today is food to microorganism ratio. If you like math and want to determine your food to microorganism ratio (often referred to as F:M ratio) remember that F:M is pounds of BOD per day per pound of MLSS. That's a mouthful, no pun intended. To

determine your pounds of food per day take your average influent BOD concentration (now if you have primary clarification remember to use primary effluent for this calculation because that is what your microbes eat) and multiply it by your average daily flow. Once you have calculated the mass of food coming into your plant divide that number by your MLSS mass and you will determine your F:M ratio. Most plants like a F:M between 0.2 – 0.5 but remember that every plant is different! Some may like to run at a 0.1 and some may like to run at a 0.6. Again, it will take time and good data to determine where your plant likes to run. One last common theme…you guessed it…F:M is controlled by wasting! If you want to lower your F:M just cut back on your wasting and raise that MLSS concentration. On the flip side, if you want to raise your F:M you need to increase wasting and bring that MLSS concentration down.

Holy moly! That's one page of waste…I think it's time for another cup of coffee. But seriously wasting is very important to the operation of an activated sludge plant no matter what the configuration. Well, I hope this article was useful but if you ever want to chat about wasting, or really anything related to wastewater, or just life in general, please give me a call and I will help you the best I can.

If you're heading out to the duck blind in search of some green heads, or to the Chequamegon in search of a timber chicken, or to your tree stand in search of an 8-pointer, or if you're running a sucker rig and searching for Wisconsin's state fish remember to be safe and to have fun out there!

Until next time, *Tony*

CORPORATE GOLD MEMBERS

PSC WATER RATE INCREASE ORDERS ISSUED

JUNE 1, 2024 – AUGUST 31, 2024

UTILITY NAME	ORDER ISSUED	OVERALL% INCREASE
Glendale Water Utility	6/14/2024	52.13%
Schofield Municipal Water and Sewer Utility	6/14/2024	20.12%
Village of Union Center Water Utility	6/25/2024	25.07%
Whiting Municipal Water and Sewer Utility	6/25/2024	24.8%
Embarrass Water and Sewer Utility	7/3/2024	38.73%
Ripon Water Utility	7/3/2024	49.02%
Stitzer Sanitary District	7/10/2024	12.06%
Cascade Water Utility	7/24/2024	201.04%
Green Bay Water Utility	7/24/2024	15.13%
Town of Lawrence Water Utility	7/30/2024	40.26%
Village of Soldiers Grove Municipal Water Utility	8/1/2024	46.72%
Orfordville Municipal Water Utility	8/9/2024	49.07%
Ashland Water Utility	8/23/2024	44.5%
Birchwood Municipal Water Utility	8/27/2024	47.09%
Adams Municipal Water And Sewer Utility	8/28/2024	55.74%
Chetek Municipal Water Utility	8/28/2024	36.75%

PSC CONSTRUCTION AUTHORIZATIONS ISSUED

DECEMBER 1, 2023 – FEBRUARY 29, 2024

UTILITY NAME	ORDER ISSUED	CONSTRUCTION COST
Abbotsford Municipal Water Utility	6/10/24	$1,394,738
Reedsville Municipal Water Utility	7/11/24	$3,196,371
Rothschild Municipal Water Utility	7/12/24	$7,669,936
Ripon Water Utility	7/25/24	$2,958,650
Williams Bay Municipal Water Utility	7/25/24	$4,355,000
Oregon Municipal Water and Sewer Utility	8/30/24	$1,736,386

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

EXPO RECAP

Kelly Thomas,
WRWA Technical Assistance Director

I would like to thank all the exhibitors, operators and the WRWA staff for making this expo a huge success.

In case you missed it the Wisconsin Rural Water Association's Annual Outdoor Expo took place August 22, 2024. Over 90 exhibitors displayed their products to over 800 attendees. This Expo is the largest of its kind in the Midwest. Nowhere else in Wisconsin will you find a display of equipment on over 10 acres of land dedicated to the water and wastewater industry other than Plover, WI in August every year. For 22 years WRWA has gathered companies representing well drilling to wastewater treatment suppliers, helmets to boots, engineers to laboratories. Quite frankly, if you didn't see it at our Expo, you don't need it.

Not only do we offer visual attractions for operators with equipment displays, but we also offer continuing education with technical sessions for operators to sharpen their skills. Even the Department of Natural Resources takes advantage of our Expo to reach out to operators offering answers to questions about any regulatory issues and offer guidance.

And, my goodness, the food that is at this expo is ridiculous. Not only can you get coffee and doughnuts in the morning, but you can find a hot breakfast sandwich as well. For lunch we offered a hot pork sandwich with Mac and cheese. And for dessert you can find an ice cream sandwich or root beer float. And if you did not get enough for breakfast and lunch, there were plenty of other snacks you could find among the exhibitors to "fill in the cracks."

WRWA also organized a raffle with items donated by the vendors. 52 items were donated, bringing in over $7000 for WRWA.

I would like to thank all the exhibitors, operators and the WRWA staff for making this expo a huge success.

Stay safe. Stay healthy,

Kelly

"Winter Operations Small Water Systems - OTM/NN " 2024-2025

Good morning,

It's this time of the year again where I will remind all our water operators out there that winter is not too far away and will be here soon! So again, here are a few tips and things you should consider doing and checking on before winter strikes.

First off, make sure all heaters and heat tapes are turned on within your facilities. I've seen it time and time again, where just forgetting to plug in or turn them on, turns into a frozen line situation or burst pipe. Keep your pump house well heated during the cold months. Depending on your system needs, decrease levels for more turn over in your water towers or outdoor tanks. Make sure all controls are heated. Also, skirting around your mobile home should also be in place, to help keep the cold air from freezing water lines. Remember, try and make daily inspections routine during extreme months.

Next, keep a map of your distribution system handy with you. You never know when or where a frozen line or burst pipe will happen. But, when it does, you will be prepared to locate the service lines or curb stops fast and effectively. Some operators will even go out into the field and flag or GPS their service lines or curb stops. Remember heavy snow will be covering curb stops making them very difficult to locate. This will save time locating them during them stressful emergency situations. Your distribution system map should include wells, storage tanks, treatment, distribution system piping, flushing devices and valve/shutoff locations.

Always have clean access to your facilities during winter. Remove, plow snow away from the most important parts of your water system. Well houses, hydrants, and valves. Be sure not to expose under- ground water service lines as the snow provides more extra insulation. Keeping your fire hydrants clear and visible prevents damage from snowmobiles or plow trucks. It also helps your local fire department when they are responding to emergency.

Also check your local weather forecast throughout the winter. When the temperatures drop it may be a good idea to send out a trickle water notice to prevent any future freeze-ups to customers.

Keep a current Emergency Response Plan at the ready. Depending on the situation, it's always a good thing to have all your contact information at the ready.

These are just only a few tips to help get you through the winter. Remember be proactive in identifying and preventing any potential problems within your water system.

We at Wisconsin Rural Water Association are always here to help with you with any Technical Assistance you may need. Please feel free to Contact your nearest WI-Water Circuit Rider for any questions or concerns you may have. Also make sure you check our web site at www.wrwa.org for any Online or In-person trainings that you may need. We are the Leaders in your training needs.

Thanks for reading,

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

CORPORATE GOLD MEMBERS

HAULING WASTE to Your Treatment Plant?

Jesse Hass,
WRWA Wastewater Trainer

First and foremost, do all your research when deciding to accept or stop accepting trucked-in waste.

A topic that comes up at a lot of visits is "Hauled Waste." And the topic comes up in many different forms. I get questions like; "How much do the typical municipalities charge for hauled waste?" or what are your thoughts on taking in hauled waste or no longer taking in hauled waste. These are a few of the many questions that come up. But what is typical with wastewater, there is no cookie cutter answer to the question of hauled waste. Some plants are under-loaded, so they rely on haulers to feed their bugs. Some treatment facilities are in a competitive area for haulers so the rates can differ greatly depending on who you are competing against. So, let's dig into some considerations when thinking about hauled waste.

First and foremost, do all your research when deciding to accept or stop accepting trucked-in waste. Occasionally I am asked if a plant should accept a high strength waste source. My first question is, "Where is the waste coming from?" If a company has a waste source that is very harmful to a treatment facility and the plant cuts it off, the waste source will need to find a new home. If you are a smaller plant and someone comes to you with the deal asking if you will accept a high strength waste, be skeptical. In most cases this waste has already been detrimental to another wastewater treatment facility and now the industry needs to find a new home. Haulers and industries are trying to find the most cost-effective and convenient location to haul waste. If you have received a question about accepting a waste source from a different part of the state, for what seems a lot of money, then I would probably say that waste is extremely harmful. If it was not harmful, the wastewater treatment plants near the industry would be taking it.

The next consideration is, how will you monitor the haulers that are bringing waste in? It sounds cumbersome but you should have some sort of procedure to monitor hauled in waste. Just blindly trusting people, has killed off a lot of treatment facilities. Even though plants can get wiped out by high strength waste it's not always nefarious. If the hauled waste company has hired a new driver, he may not know that one hot load can destroy a small wastewater plant. Also, if the trucks haul a variety of wastes and are not dedicated to holding tank waste, there may be some left over waste from a previous load that can upset your plant. So, what can be done to help with this situation? The most ideal practice would be to document and sample each load and have a clear policy for unwanted waste. But I understand that sampling every load is not feasible and not cost-effective. With most places not having the staff, time or budget to sample each load, a compromise is to have each hauler leave a sample and then sample randomly. The haulers will not know how often you are sampling, they will just know that you have collected a sample from each load. Also, another thing I would recommend is only letting haulers dump when someone is at the facility. I have heard numerous horror stories of treatment facilities giving a key to haulers and hot loads getting dumped when no one is at the facility.

The next things to consider are what types of waste you will bring in, is the revenue worth the wear and tear on your plant and are the loadings affecting treatment. If you are making money from haulers, but you are using a lot more chemicals to treat the waste brought in, you may not be making as much as you think. Another idea to think about is how will the waste be accepted at your plant. Is your treatment plant set up properly to take in waste. Some facilities are designed to take in hauled waste, waste is dropped off in aerated storage tanks and is fed into the plant slowly. Smaller plants that are getting lower phosphorus or nitrogen limits can really struggle with hauled waste that is slugged through the plant. Also, does your plant have a decent way to screen out hauled waste. I know of a couple systems where there is no way to screen out the hauled waste and it causes a lot of problems at the facility.

After doing all your research and if you decide to take in waste, the last things to consider are what types of waste are you going to accept and how much are you going to charge. You want to be competitive with neighboring communities but also need to make sure you are generating revenue. The rates vary greatly from region to region in the state. Check around and see what the neighboring communities are charging. Give me a call if you need more information. I can get some information as well. If you would like, email me your rates at jhass@wrwa.org and I will compile the data for people who ask.

Jesse

CORPORATE GOLD MEMBERS

IMPACT OF DIRTY AIR FILTERS ON MOTOR EFFICIENCY IN BLOWERS

Matt Rettler,
WRWA Energy Efficiency Circuit Rider

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

Dirty air filters can have a significant impact on a power bill because of the loss of efficiency from the motor. Before we discuss how that can happen, we need to understand what motor efficiency really is. Motor efficiency is defined as the ratio of mechanical power output to electrical power input, expressed as a percentage. It is influenced by various factors including load, motor design, and operating conditions. The general formula for efficiency is: η=Electrical Power Input / Mechanical Power Output×100. Finding the efficiency of a motor is easy, but adding in all the other variables is where it gets complicated. For motors that aren't using a VFD, they operate at their highest efficiency when they are at full designed load. For many standard motors, the efficiency at full load can range from 85% to 95%. Adding a VFD can maintain the motors efficiency at lower speeds and loads. So why does adding in the variables make finding the true efficiency harder?? Let's look at one variable…. a dirty air filter.

In many industrial and municipal applications, including wastewater treatment plants, blowers are crucial components responsible for moving air through a system. These blowers are powered by electric motors, and their efficiency is essential for optimal performance and energy consumption. Aeration uses anywhere from 40-60% of a plant's total power usage. One critical factor that can affect the efficiency of a blower motor is the condition of the air filters. Dirty or clogged air filters can significantly impact motor efficiency, leading to increased energy consumption and potential damage to equipment.

So how does a dirty filter affect efficiency? Well, it all starts with increased airflow resistance. Filters are designed to trap dust, debris, and other particles to prevent them from entering the blower and causing damage. Over time, these filters become clogged with particulate matter, leading to increased airflow resistance. When airflow is restricted, the blower must work harder to move the same volume of air, which requires more energy. This increased workload translates directly to lower motor efficiency and increased power consumption. The easiest way to put this in perspective is to think of drinking a glass of water through a straw. Now, using the same glass and straw, add a thick milkshake and it takes much more energy to drink the contents!!

As a filter becomes clogged, the amount of overall airflow through the blower decreases. The reduction in airflow can impair the blower's ability to perform its intended function of aeration. As the blower struggles

to maintain adequate airflow, the motor operates less efficiently. This inefficiency arises because the motor must exert more effort to achieve the required air movement, leading to higher energy usage and potential overheating. Think again back to the milkshake. You get much less milkshake each try than you would water because of the resistance.

Everyone who has gone inside your blower room knows that it is both loud and warm. It takes energy to create heat, and this leads to greater inefficiencies. Any heat generated from an electric source is wasted energy. The hotter it is, the more energy wasted. Elevated temperatures will cause premature failures of bearings, windings, and blower components.

Now you may have a little better understanding why it is difficult to figure out the true efficiency of a motor. Air restriction is just one of many variables to take into consideration. Others can include pipe sizing, number of bends in your piping, air density, blower wear, piping leaks, diffuser type and condition, and every other item that is part of the system's performance. One way to help optimize efficiency is to perform regular maintenance. Maintenance is key to optimizing the usage of power in your aeration system. Keeping components clean helps reduce heat and increase the overall efficiency of equipment. Regular checks of your piping and diffuser patterns can alert an operator to potential failure points in the system. And last but not least is adding an energy assessment to your maintenance plan to get another set of eyes on the equipment to look for additional ways to operate efficiently. Contact me today for your energy assessment. Matt 715-498-2664 or mrettler@wrwa.org *Matt*

CORPORATE GOLD MEMBERS

NEW Disinfection Requirements for Wisconsin Wastewater Treatment Systems

Brooke Klingbeil,
WRWA EPA Wastewater Technician

These updated disinfection rules are part of Wisconsin's effort to keep its surface waters safe for recreation.

This morning, we woke up to two excited boys, ready for their first day of first grade and second grade. It's a day full of mixed emotions—I'm a bit sad at how quickly summer passed, but also proud of how much they've grown and changed over the last few months. I'm glad they're eager to return to school, reconnect with friends, and meet their teachers. Now, if only time could slow down a bit. Though summer is officially over, the disinfection season continues through September. On the topic of change, here's some important information about potential updates that Wisconsin Wastewater Treatment Facilities might face in their upcoming permit terms.

The Wisconsin Department of Natural Resources (DNR) has recently changed its disinfection rules for wastewater treatment facilities, affecting how municipal and privately-owned plants handle their discharges into surface waters. These changes are based on updates to the state's water quality standards, especially concerning E. coli limits, to protect recreational use of these waters. The draft Disinfection Policy Guidance explains the new disinfection schedules, showing the differences between lagoon and non-lagoon systems and outlining the steps needed to comply within the five-year permit term.

These updated disinfection rules are part of Wisconsin's effort to keep its surface waters safe for recreation. State regulations require that all surface waters meet E. coli standards during the recreation season, from May 1 through September 30. The DNR estimates that in the next ten years, around 100 more municipal wastewater treatment facilities will need to upgrade or install disinfection systems to meet these standards.

The DNR has set up two different compliance schedules for wastewater treatment facilities, depending on whether they are lagoon or non-lagoon systems. These schedules outline the steps that facilities need to take to meet E. coli limits by the end of the five-year permit term. While the schedules are similar, the first year is different depending on the type of system.

YEAR 1: Lagoon Facilities

For lagoon facilities, the first year focuses on checking if the existing system can meet E. coli limits without needing upgrades. The facility must submit a detailed report on its discharge, including an evaluation of the effluent data and the facility's ability to comply with final E. coli limits. If the report shows that the current process meets the E. coli

standards, the facility can request the DNR to modify or remove the disinfection requirement based on specific criteria.

If the evaluation shows that the current treatment does not meet E. coli limits, the facility must start developing a plan to meet these requirements. This plan will guide the actions to be taken in the following years.

YEAR 1: Non-Lagoon Facilities

Non-lagoon facilities do not have the same evaluation period as lagoon systems. Instead, they must immediately start planning for disinfection upgrades. In the first year, the facility must submit a progress report that details the development of a plan to meet the disinfection requirements and E. coli limits. This ensures that non-lagoon facilities are proactive in addressing potential compliance issues from the start.

YEARS 2 – 5: Unified Schedule for All Facilities

After the first year, the schedules for both lagoon and non-lagoon facilities merge. The following years are designed to make sure that all facilities move steadily towards full compliance by the end of the permit term.

- **YEAR 2:** The facility must submit a plan outlining the necessary upgrades to meet the disinfection requirements. This plan should include details of the proposed upgrades and can be shortened if the changes are minor.
- **YEAR 3:** The facility must submit final construction plans for the required upgrades. These plans need approval from the DNR before construction can begin, ensuring that the upgrades will meet the E. coli limits.
- **YEAR 4:** A progress report on the construction upgrades must be submitted to keep the DNR informed about the facility's progress towards compliance.
- **YEAR 5:** The facility must complete all construction work and achieve compliance with the final E. coli limits. This step aligns with the start of the final disinfection season, ensuring the facility meets water quality standards during the key recreation period.

The DNR knows that these upgrades could be financially tough for municipalities. To help ease the cost, several funding options are available. The Clean Water Fund Program (CWFP) offers low-cost financing, including subsidized loans and principal forgiveness, to lessen the financial impact on municipalities. Additionally, the National Rural Water Loan Fund offers another option, with flexible financing specifically designed to help small communities with infrastructure upgrades.

As you near the end of your current permit term, I recommend contacting your compliance engineer to determine if your facility is impacted by this rule revision. You can find more details, including the draft policy and a funding guide, on the DNR website. If you have any questions, don't hesitate to reach out to me.

Tight Lines,

Brooke

16th Annual Water Conservation Poster Contest

Andrew Aslesen,
WRWA Source Water Specialist

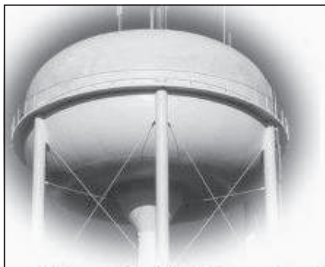
WRWA is pleased to announce the 16th annual Water Conservation Poster Contest. This year's theme is "Drip Drop, Make It Stop". We're trying to keep things fun with a catchy phrase, but it's more than that, it encourages students to think about how water is wasted, whether it's a leaking fixture or pipe, or wasteful ways we use water in our everyday lives. We want to challenge students to think about what we all can do to stop water waste and preserve and protect water for future generations.

We invite and encourage all water operators, wastewater operators, municipal employees, board members or families to help promote the water conservation poster contest and distribute the informational flyer found in this issue of the journal or on our website (www.wrwa.com/contests). Please consider giving the flyer to the schools in your communities (both public and private schools) or giving it directly to teachers or other school staff that you know. Additionally, the water conservation poster contest can be a great way for utilities to connect with their local schools. It can provide an opportunity to educate students and the public on issues that utilities face every day and how water and wastewater utilities are working to protect the environment and conserve natural resources. The poster contest is open to public, private & home school students in 2nd through 6th grade anywhere in Wisconsin. Participants are asked to create a poster that depicts a message of water conservation that relates to this year's theme. As part of the project, teachers have the opportunity to discuss the importance of our water resources and water conservation with their students. Teachers can even request that Wisconsin Rural Water Association staff give a groundwater presentation at their school using our 3D sand tank groundwater model. Posters are submitted to the Rural Water office near the end of February, where they are reviewed and the top 15 posters from each grade are taken to and displayed at our Annual Technical Conference in March. Conference attendees choose the winning posters by voting for their favorite poster from each grade. The two posters from each grade that receive the most votes are awarded first and second prize. First place winners receive a $100 cash prize, and second place winners receive a $50 cash prize. Again, this year we are rewarding teachers who put the time and effort into participating in the contest by putting them in a drawing for one of five $100 Amazon gift cards. This incentive directly rewards teachers in a tangible way and was very popular with the five winners last year.

In the last fifteen years, the Water Conservation Poster Contest has continued to be an outstanding success. For the 2024 contest there were almost 800 participating students from 30 teachers at 19 different schools. This year we would like to reach even more students, but we need your help! Please join us in promoting this year's poster contest by distributing the information on the contest to schools in your community and encouraging them to participate. If you have any questions or need additional entry forms, feel free to contact me; **Andrew Aslesen, WRWA Source Water Specialist at Aaslesen@wrwa.org or calling 715-321-3451.** *Andrew*

WRWA
Wisconsin Rural Water Association

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



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

---

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

Chris Groh, Executive Director
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715.340.2055

Gary Larimore, President & CEO
Rural Water Financing Agency
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Is It Our Water or You?

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.

The other day, I dropped off a DBP sample at the water system I used to work at. A newer resident stopped in to ask about getting his water shut off so a plumber could replace the inside valve and remove an old water softener. The discussion turned to the pros and cons of softened water when the customer mentioned, "I can't drink the water here. I'm from the country, and this water tastes terrible to me." We discussed his water supply. His kitchen tap wasn't hooked up to the softener and he's on a looped water main that has an ample flow of fresh water passing by. His home was built in the 1980's and has copper plumbing from the main to the tap.

I've heard people say they can't drink the water a few times before. Personally, I like our water and drink it every day without any issues. In fact, we receive very few complaints about the taste. The customer went on to say, "We get our water from the grocery store's gallon fill station, and we go through five a week." I smiled and couldn't wait to tell him that the water at the grocery store was the same water he gets at home. He laughed and admitted that the taste issue might not be that easy to blame on the water system.

Although we don't receive many official complaints about water taste, I do hear from customers with opinions, especially if they don't like the taste. This made me consider what factors affect the taste of water:

1. Mineral Content: The presence of minerals like calcium, magnesium, potassium, and sodium can give water a distinct taste. For example, higher calcium

levels can make water taste "hard," while sodium can give it a slightly salty taste.

2. pH Level: The acidity or alkalinity of water, measured by its pH level, can influence its taste. Water with a lower pH (more acidic) may taste slightly sour, while water with a higher pH (more alkaline) might have a more bitter or metallic taste.

3. Chlorine: Many municipalities add chlorine to water as a disinfectant. These chemicals can give water a noticeable taste and odor, often described as "bleachy" or "chemical."

4. Dissolved Gases: Gases like carbon dioxide (CO_2) can dissolve in water, affecting its taste. Oxygen and other gases can also contribute subtle flavors.

5. Organic Compounds: Naturally occurring organic compounds can influence water's taste, sometimes giving it an earthy or musty flavor. These compounds can vary depending on the source of the water.

6. Pipes and Plumbing: The materials used in plumbing, such as copper, galvanized or lead, can leach into water, imparting a metallic or "stale" flavor.

7. Water Source: The origin of the water (e.g., groundwater or surface water) can affect its taste due to varying levels of natural minerals, organic matter, and other substances. For example, water from a well might taste different from water sourced from a river.

8. Temperature: The temperature of the water can influence its taste perception. Cold water often tastes fresher or more refreshing, while warm water might bring out different taste notes, such as a metallic or mineral taste.

Most of us in the industry are familiar with these factors. However, there's another aspect to water taste that we need to recognize: every person is different, and their experience with us and our water shapes their opinions. There's a physical component to taste, and there's also a mental or subjective part that we can't control. What we can control is our reaction when these comments are brought to us. Talking through the situation, investigating and recording the results and following up are great ways to keep the experience positive and ensure that hopefully the only thing a customer can be critical of a water system is the taste of their water.

It's crucial that operators take water taste seriously. There are factors within our system that can change the taste of our water in one area compared to another. Every complaint should be recorded and followed up with an investigation. Sometimes these issues can't be easily explained, or sometimes customers don't want to hear that their own taste preferences might be the reason they don't like the water. These are tricky situations that need to be handled professionally.

If you have any questions or need assistance, please reach out to me or your circuit rider for help. Have a great end to summer and fall. *Seth*

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A glance at the 2024 Outdoor Expo

2024 WRWA Outdoor Expo Winners

PRIZE	DONATED BY	WINNER(s)
65" TV	Adaptor	Carl Rudi
Generator	Core & Main	Kyle Gruetzmacher
Safety Boots	Hy-Test Safety Shoe Service	Tony Burton
9'x 9' Badger Canopy Tent	MSA	Tim Foster
$100 Cash	B & M Technical Services	Dan Silvernale
360 Swivel Chair	Granse/Trio	John Spreda
$50 Menards	Ayres	Christopher Massart & Casey Jakubek
Milwaukee Neck Light	First Waterworks	Brad McGowan
Money Tree	WRWA Staff & Board	John Spreda
$300 yeti	Crane Engineering	Dale Klueger
Milwaukee M12 Cordless Lithium-Ion Drill/Driver & Hex Impact Driver	William/Reid	Harold Scheiber
YETI Hopper Flip 8 cooler & Yeti	LAI, Ltd	Christopher Massart
$50 Kwik Trip	Municipal Well & Pump	Dale Klueger, Todd Hanson, Scott Dennee, Dan Markart
Milwaukee Tool Package	Energenics	Chad Kramar
$100 Cabelas	Dorner	Ted Kraus
Blackstone Tabletop	Sherwin-Williams	Chance Curtis
Two Chairs/Cooler/Beer	Northern Lake Service	Garrett Grossen
Yetti Hopper Flip 8	ISG	Chad Kramar
$50 Kwik Trip	Commercial Testing Lab	Nic Schmeiser, Chad Wolter
Igloo Cooler	CBS Squared	Ramon Kundtson
$50	Sealing Systems, Inc	Chance Curtis
Yeti Roadie & 2 Stanley Tumblers	Hawkins	Joe Galewski
Yeti Bucket & Accessories	HK Solutions Group	Jason Kirsenlohr
St. Croix Rod	Xylem	Nate Smolarek
Traveling Slow Cooker	UEMSI	Allen Mankiewicz
LED Jobsite Speaker	American Flow Control	Dean Bergstrom
22in Blackstone	USG Water	Steve Yaeger
PulseTech Therapy Gun	M.E. Simpson	Don Hart
RTIC Backpack Cooler	P.J. Kortens	Erich Hintz
Schunacher Jump Starter	KLM	Justice Rueth
Milwaukee Grease Gun	Ferguson	Justyn Krueger
Big Frig Cooler	DSG	Curt Hebbe
Lifetime Cooler & Travel Tumblers	JWR	Aaron Torgerson
Igloo Cooler & Twist n Chug Bottle	ADS	Scott Dennee
$100 Visa	Dixon	Kris Spindler
Backpack Hunting Package	Water Well Solutions Group	Tyler Bessette
$50 Menards, Cap, Bottle Opener	Ford Meter Box	Christopher Massart, Brad Stuczynski
Menards Bucket of Tools & Trail Camera	Badger Labs	Ryan Flick
BattleChip Match Game	SEH	Roger Kielszewski
Backpack & Golf Balls	Roth Professional Sevices	Christopher Massart
Milwaukee Pack Out Cooler	Visu-Sewer	Jacob Cutts, Christopher Massart
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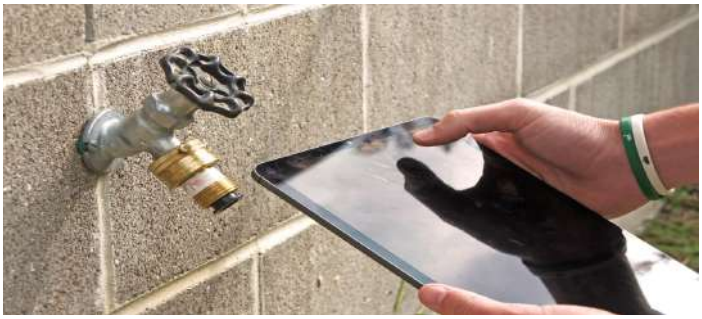
3 Yeti Tumblers	Sensus	Curt Hebbe
$100 Kwik Trip	L.W. Allen	Victor Trimble
$50 Dicks Sporting Goods	Utility Logic	Jason Leverance, Roger Kieliszewski

Thank You

WRWA Outdoor Expo sponsors & all those that participated!

From Pipe to Tap: How GEC Helps Ensure Safe Drinking Water Across Wisconsin

Engineers • Consultants • Inspectors



Since its founding in 1912, General Engineering Company (GEC) has been dedicated to serving the best interests of our clients. For over 110 years, GEC has proudly served Wisconsin and the surrounding areas from our main office in Portage. Throughout our history, GEC has provided professional engineering services to many public and private clients, many of which we have long-standing partnerships with today.

In the 2010s, GEC took a step forward to further support our clients by offering cross-connection control inspections. Our expansion in 2012 allowed us to reach more communities than ever before. Today, GEC serves over 25 communities across Wisconsin, from Jackson County to Rock County, supporting commercial, public authority, and industrial properties.

With years of experience and thorough training, GEC's inspectors are experts in cross-connection control. Some might be wondering, what is cross-connection? Picture this: a pipe carrying safe, potable drinking water connects with a pipe containing unsafe, non-potable water or other liquids. This connection can cause non-potable water to siphon or backflow into the potable system, posing a severe contamination threat.

In line with the Safe Drinking Water Act of 1974, the Wisconsin Department of Natural Resources (WDNR), under NR 81.15, mandates that every municipal water supplier develop and implement a comprehensive cross-connection control program. This program aims to eliminate all existing cross-connections and prevent future ones.

GEC is at the forefront of supporting commercial, public authority, and industrial clients with cross-connection inspections and training. We maintain these inspections every two years, unless the risk is equivalent to or less than a residential property, in which case the inspection frequency can extend to ten years. Communities can request and receive approval for alternative inspection schedules from the DNR for specific property types, with the most common being a six-year frequency.

Residential inspections are conducted every 10-20 years, depending on the community's water meter replacement schedule. Many communities align their cross-connection inspections with the water meter replacements.

Before diving into the specifics of residential inspections, let's explore some common potential cross-connections in a home. These include a hose submerged in a pool or in a bucket filled with cleaner, a laundry sink with a hose near the drain, and a pesticide sprayer connected to a garden hose. Fortunately, many of these risks can be mitigated with proper precautions, benefiting both residents and the community. Here's how residents can assist their communities:

1. Keep the ends of hoses clear of contaminants.
2. Check hose bibbs for vacuum breakers. Most hardware stores now carry hose bibb vacuum breakers for threaded faucets. We recommend anti-freeze vacuum breakers for outside faucets, as they require less maintenance during Wisconsin winters and are self-draining.

So, what do we suggest to our communities? A key tip is to maintain clear communication about cross-connection inspections with businesses and residents. The DNR requires information on the total number of properties in each category and their inspection frequency, how many were inspected in the calendar year, how many were non-compliant, and how many remain non-compliant from the previous year. The DNR will review the community's cross-connection control program during the sanitary survey, which is completed every three years. The community must keep their forms for that period for their DNR representative to review. Records can be maintained in hard copy or digitally.

By proactively managing cross-connection control, GEC helps ensure the safety and quality of drinking water for communities across Wisconsin. Our commitment to thorough inspections, effective communication, and compliance with regulatory standards not only protects public health but also fosters trust and reliability among our clients.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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.

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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.

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 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.

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 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

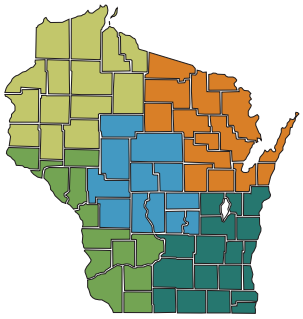
Decentralized Wastewater Technical Assistance and Training Program

TELL CONGRESS NOW

KEEP RURAL AMERICA STRONG!

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

WRWA
Business Member List



120Water
A.Y. McDonald Mfg Co.
Abbyland Foods
ADAPTOR INC.
Advanced Drainage Systems Inc.
ADVANCED MICROBIAL SOLUTIONS
ADVANCED SAFETY TECHNOLOGY INC.
AECOM
AgSource Laboratories
Air Diffusion Systems
Alden Pool/HI-EDRY
AMERICAN FLOW CONTROL
AMERICAN LEAK DETECTION
AMERICAN STRUCTURES INC.
Applied Technologies Inc.
Aqua – Pure of Wisconsin
AquaFix
Aqueous Vets, LLC
AUTOMATIC SYSTEMS CO.
AYRES ASSOCIATES
B & M TECHNICAL SERVICES
BADGER LABORATORIES
BADGER METER INC.
Badger State Inspection, LLC
Baker Tilly Virchow Krause LLP
Baker Water Systems
Baxter & Woodman Inc.
BECHER-HOPPE
Boardman & Clark LLP
Cady Aquastore Inc.
CB&I Storage Tank Solutions, LLC
CBS SQUARED, INC.
CEDAR CORPORATION
CLARK DIETZ INC.
Classic Protective Coatings Inc.
Clean Harbors
Clow Valve
COATING RESOURCES, INC.
COMMERCIAL TESTING LAB INC.
Cooper Engineering Company Inc.
Copperhead Industries, LLC
CORE & MAIN
CORRIM COMPANY FRP, LLC
Crane Engineering Sales Inc.
CRESCENT ELECTRIC SUPPLY COMPANY
CRETEX SPECIALTY PRODUCTS
CTW CORPORATION
CUES, Inc.
Dakota Supply Group
DAVY ENGINEERING CO & DAVY LABORATORIES
DELTA 3 ENGINEERING, INC.
Diamond Maps
DIXON ENGINEERING INC.
DN Tanks
DONOHUE & ASSOCIATES, INC.
DORNER COMPANY
DRYDON EQUIPMENT INC.
EJ USA, Inc.
ENERGENECS INC.
EnviroTech Equipment Company, LLC
ETNA SUPPLY COMPANY
Faith Leak Detection Services, LLC
Fehr-Graham Engineering & Environmental
FERGUSON WATERWORKS – DAVIES
FIRST SUPPLY LLC
Fischer, Harris & Associates
Flow Control Automation, Inc.
Flow Measurement & Control
Flow-Rite Pipe & Sewer Services, LLC
Fluoramics, Inc.
Flygt a Xylem Brand
FOCUS ON ENERGY
FORD METER BOX COMPANY
GENERAL ENGINEERING COMPANY INC.
Godwin a Xylem Brand
GRAEF
Granse/Trio Sales
Great Lakes TV Seal Inc.
Great Northern Environmental
Great Plains Structures
Hach
Hawkins Inc.
Huma Environmental
HYDRO CORP., INC
Hydro-Klean, Inc.
In-Control, Inc.
INFRASTRUCTURE DL, LLC
ISG Group, Inc.
INTEGRATED PROCESS SOLUTIONS INC.
J.F. Ahern Company
JAMES ORR COATING INSPECTION, LLC
JCM Industries, Inc.
JIM JOLLY SALES, INC.
JMB & Associates, LLC.
JWR INC.
Kapur & Associates Inc.
Kasco Marine
KLM ENGINEERING INC.
Kodru Mooney
KorTerra, Inc.
KUNKEL ENGINEERING GROUP LLC
L.F. George, Inc.
L – R Meter Testing & Repair Inc.
L&S ELECTRIC, INC.
L.W. ALLEN, LLC
LAI, Ltd.
LANE TANK CO INC.
LRE WATER
M.E. Simpson Company Inc.
MACQUEEN EQUIPMENT OF WISCONSIN
Maguire Iron Inc.
MALLOY ELECTRIC
MARTELLE WATER TREATMENT INC.
Martenson & Eisele Inc.
Master Meter, Inc.
MCMAHON
McWane Ductile
MEAD & HUNT INC.
Metering & Technology Solutions
Metron-Farnier & Transparent Tech.
Mid America Meter Inc.
MID CITY CORPORATION
Midco Diving & Marine Services, Inc.
MIDWEST METER, INC.
Midwest Testing
Monroe Truck Equipment, Inc.
Morgan & Parmley, LTD
MSA PROFESSIONAL SERVICES
MUELLER COMPANY
MULCAHY/SHAW WATER INC.
MUNICIPAL WELL & PUMP
Musson Brothers, Inc.
NORTHERN LAKE SERVICE INC.
P.J. KORTENS & COMPANY INC.
Pittsburg Tank & Tower Maintenance Company
Prinsco, Inc.
PUMP SOLUTIONS, INC.
Quality Flow Systems, Inc.
raSmith
R.H. Batterman & Company Inc.
RANGE DATA, INC.
Red Flint Sand & Gravel, LLC
REHAU – MUNICIPEX
Ridgeline Utility Co.
R.N.O.W., INC.
RES
ROBERT E. LEE & ASSOCIATES INC.
ROTH PROFESSIONAL SOLUTIONS
RUEKERT & MIELKE INC.
Rural Water Financing Agency
Sabel Mechanical LLC.
SEALING SYSTEMS INC.
SEILER GEOSPATIAL
SENSUS USA, INC.
SERWE IMPLEMENT, LLC.
SHERWIN WILLIAMS
SHORT ELLIOTT HENDRICKSON INC.
Soderholm/Watts
STAAB CONSTRUCTION CORPORATION
STARNET TECHNOLOGIES
Strand Associates Inc.
Subsurface Instruments, Inc.
SUMMIT INFRASTRUCTURE
TEAM LABORATORY CHEMICAL CORP.
THE EXPEDITERS, INC.
Thein Well Company
Therma-Tron-X, Inc.
TOWN & COUNTRY ENGINEERING, INC.
TRIPLEPOINT ENVIRONMENTAL
Tri-State Pump & Control, Inc.
Trotter & Associates, Inc.
UEMSI/HTV
United Systems & Software, Inc.
USA BLUEBOOK
USEMCO Inc.
USG WATER SOLUTIONS
UTILITY LOGIC
VERMEER-WISCONSIN INC.
VIERBICHER ASSOCIATES INC.
VISU-SEWER LLC
Water Conservation Services, Inc.
WATER SURPLUS
WATER WELL SOLUTIONS SERVICE GROUP INC.
Waterly
WILLIAM/REID LTD.
WISCONSIN PUMP WORKS
Wisconsin Surplus Online Auction

Members in **"BLUE BOLD & ALL CAPS"** are Corporate Members
Members in **"RED BOLD & ALL CAPS"** are Corporate Gold Members


DEPENDABLE. JUST LIKE
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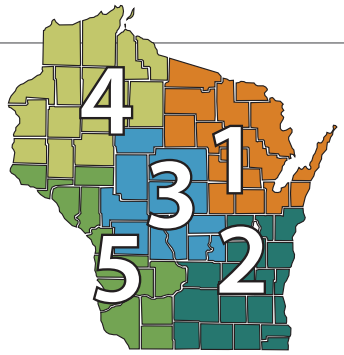
SYSTEM DESIGN & MAINTENANCE | PORT-A-TOWER | TELEVISING & LOGGING
MUNICIPALWELLANDPUMP.COM

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
**KD Plumbing Inc.
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
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

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

Shorewood Hills
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
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)

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

BACT Samples and Public Notice

In addition to the minimum water samples per month dependent on community population, don't forget about your quarterly groundwater samples from each well prior to treatment

Todd Weich,
WRWA Water Circuit Rider

Whether we like it or not, everyone's favorite time of year is right around the corner. At our annual fall Outdoor Expo, there were a handful of new faces along with a lot of familiar faces! One question that I seem to get asked a lot lately is a basic one. How to take a drinking water BACT sample. So, I decided it would be beneficial to all of us, including me, to refresh on something that sometimes gets overlooked but is extremely important.

According to code **NR 809.31**, it states that all water suppliers for all public water systems shall collect total coliform samples at approved sites within your distribution system. Make sure you are only pulling samples from approved locations. However, if your locations are not available due to many reasons, make sure you review, revise, and resubmit for approval prior to using it. If you are looking at revising your approved monitoring site plan, a few things to keep in mind are is it accessible by the operator when needed, is the sample tap a brass or stainless steel smooth bore sampling tap, and is the sample tap located in a clean and maintained area free of unsanitary items (i.e. a dirty sink in the corner, a mop faucet, etc.). Another thing to keep in mind; is there an option to make a simple improvement to the tap to make it more functionable?

The monitoring plan is very important because if you do end up getting a positive sample, the plan states where the samples are to be taken. Operators are to collect a set of repeat samples within 24 hours of being notified. Code **NR 809.31.2.b** states that an operator shall collect at least one repeat sample from the sampling tap where the original positive samples was taken, and at least one repeat sample at a tap within 5 service connections upstream and at least one repeat sample at a tap within 5 service connections downstream of the original sampling site as well as a raw water sample from all wells. It also states that if a positive sample is at the end of the distribution systems, or one service connection away from the end of the distribution system, the water operator shall take all required repeat samples. On a more serious note, if a water operator takes more than one repeat sample at the monitoring location required and more than one repeat sample is E coli positive, the water system has then violated the E coli mcl and must comply with **NR 809.327**.

If a sample does happen to come back positive, a public notification is required for ALL public water systems as part of the Safe Drinking Water Act. Depending on the severity of the situation, it will fall under 1 of the 3 tiers set forth and can range from 24 hours to a 1-year notice required.

Most common is Tier 1 Notices due within 24 hours, with notice to the DNR. According to the Wisconsin DNR, these include, as mentioned above, E. coli in the distribution system, or failure to test following any repeat coliform positive sample; nitrate, nitrite, or total nitrate and nitrite maximum contaminant level violation or failure to take a sample following any exceedance of the nitrate or nitrite MCL; Chlorine dioxide maximum residual disinfectant level violation, or failure to take a required sample; waterborne disease outbreak or other waterborne emergency; and other violations or situations which pose an immediate risk to public health. During a Tier 1 notice, the Municipality must notify the public by radio, tv, hand or direct delivery, or posted notices in conspicuous locations.

Let's touch upon public notices and what should be included in a clear and easily understood manner:

- Description of the situation
- When it occurred

- Any potential adverse health effects
- The population at risk
- Whether an alternative water supply should be used
- Actions that should be taken
- What the Municipality is doing to correct the problem
- When the Municipality expects to resolve the problem

After issuing a notice, a copy of the notice and a certification must be sent to your DNR representative within 10 days. To meet the requirement, the DNR also stated that the following statement may be used to satisfy the certification requirement:

I certify that the information and statements contained in this public notice are true and correct and have been provided to consumers in accordance with the delivery, content, format, and deadline requirements in Subchapter X of Chapter NR 809, Wisconsin Administrative Code.

Signature:

Date:

Also make sure you are familiar with your monitoring frequency within your water system. Water samples are to be taken at regular intervals determined by the population of your community as shown below.

Population served/Minimum number of samples per month

25 to 1,000 (Serving a municipality) / 2	4,901 to 5,800 / 6
1,001 to 2,500 / 2	5,801 to 6,700 / 7
2,501 to 3,300 / 3	6,701 to 7,600 / 8
3,301 to 4,100 / 4	7,601 to 8,500 / 9
4,101 to 4,900 / 5	8,501 to 12,900 / 10

In addition to the minimum water samples per month dependent on community population, don't forget about your quarterly groundwater samples from each well prior to treatment. Did I mention to take the samples from a non-threaded, stainless steel or brass tap?

Let's get back to the basics.

After you have determined that the desired locations are approved and the sample taps are in good condition, here are a few basic steps to remember to take a proper BACT sample.

1. Turn the sample tap on to flush with water for 30 seconds to 1 minute, or more.
2. Using a torch, flame around the tap and up into the tap opening to sanitize the tap (careful not to burn any gaskets inside the tap).
3. Repeat step 1. (An easy way to remember this is FFF! Flush, Flame, Flush.)
4. Reduce water flow to pencil width.
5. Prepare the bottle and remove the plastic seal without the cap maintaining any contact with contaminates (i.e. do not set the cap down).

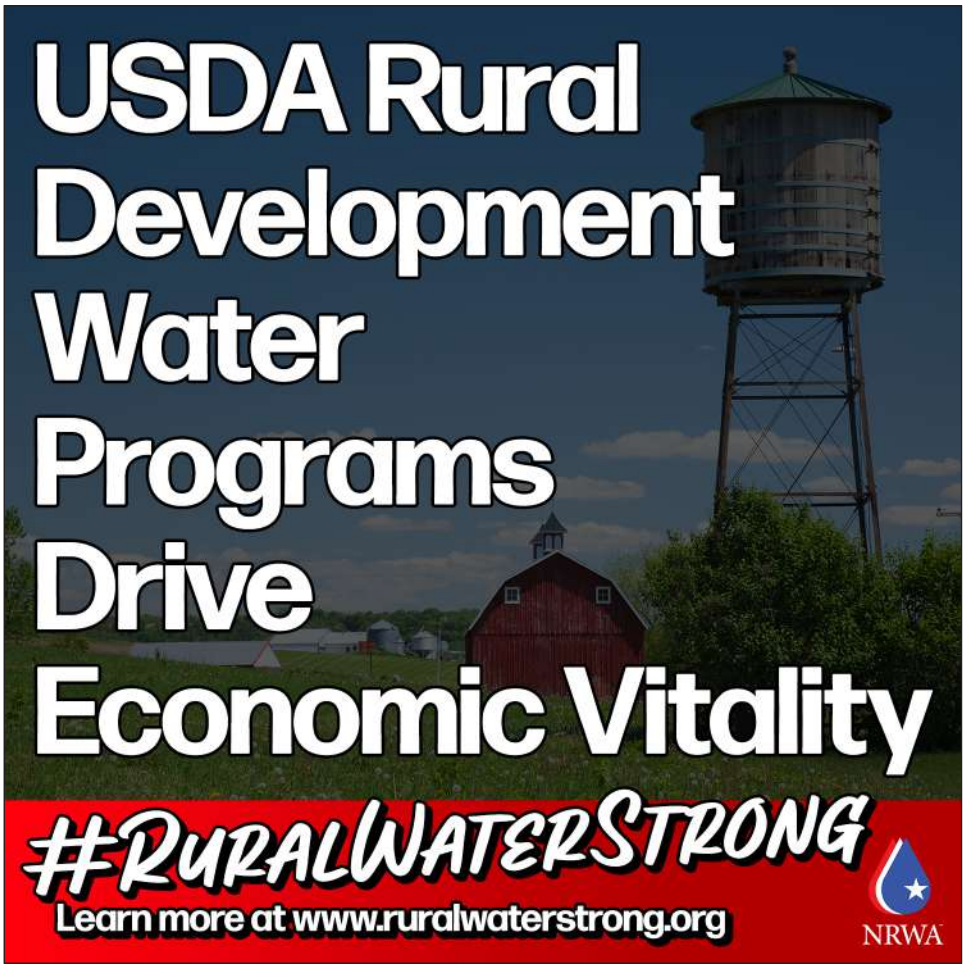
*DO NOT RINSE the bottle.

6. Fill the bottle to the line marked.
7. Immediately recap bottle tightly and store in a cool location.
8. Complete the necessary chain of custody.
9. Ship to lab.

*Remember: No matter what lab you are using, tap to test is 30 hours.

Have a great fall, and good luck to those participating in hunting activities! Feel free to reach out to your Wisconsin Rural Water Circuit Rider for any and all technical assistance.

Todd



Valve Excercising

It is recommended to have distribution valves in good working order before hydrant flushing.

Annetta Von Rueden,
WRWA Water Circuit Rider

Hello to All! Hope you had a great summer. Not counting the good times you had dealing with storms. There were sure a fair amount. Old timers, yes, I am speaking for myself, say if it was a wet summer, that moisture pattern continues throughout the winter. Look out! Last winter we were certainly spoiled. I purchased a little snowblower to hopefully my husband's surprise. We will see about that. As the old saying goes, work smarter, not harder. At least we can be prepared to work ahead of Mother Nature.

One task that could be done to get ahead of the game is valve exercising. It is no fun trying to locate valves during a main break when you really need them. Especially in the bitter cold. Ask any old timer.

It is recommended to have distribution valves in good working order before hydrant flushing. Distribution valves are provided to isolate the areas in the distribution system. A complete program of inspection, exercising, and maintenance of valves on a regular basis can help avoid serious problems when the need to use a valve arises.

Routine inspections should include:

- Verify the accuracy of location of the valve boxes on the distribution map. Make all corrections on the map right away.
- Remove the cover, inspect the stem and top nut for any obvious damage or leaking.
- Close the valve fully, recording number of turns to fully closed position.
- Reopen slowly to restore system flow and pressure.

Per DNR code, distribution valves should be operated for a minimum of two to four years. Hydrant valves every seven years.

Planned valve exercising verifies valve locations, determines whether or not the valve works, and extends the life of the valve by cleaning the dirt and grit from the valve seat and gates. Valves should be exercised in both directions. Fully closed and fully open, number of turns, and direction of operation to be documented.

One of the most important factors in maintaining valves are the availability of current and correct maps of the distribution system. Verify often that it is accurate and keep the map up to date by immediately recording any changes such as replacements, or additions.

Distribution valves are the key components of the water distribution system. It is cost effective to keep them operable so that they are there when you need them. If you need to borrow a valve turner, WRWA has them available, give your Circuit Rider a call.

Good Luck hunting this fall and be safe out there. *Annie*

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UP THE CREEK

Ken Blomberg,
WRWA past Executive Director

In a technical sense, autumn's equinox arrives in late September when the Sun crosses the equator and the duration of day and night stands equal. But in reality, fall blows in with a vengeance in October when cold fronts and blustery winds sweep down from Canada. When average temperatures drop more than twenty degrees and suddenly autumn unfolds before our very eyes. Fall is right around the corner and now's the time to taste the sounds, sights and smells of the season.

Northern geese will pass through in noisy gaggles. Cranes will trumpet from nearby harvested fields and secluded marshes. Wood ducks will cry as they patrol backwater sloughs and river bottoms. On rare occasions, male ruffed grouse may drum, rooster pheasants crow and tom turkeys gobble. Buck deer will soon grunt for mates and from hedgerow thickets, migrating songbirds will warble. Autumn music will be with us until the season's final curtain call.

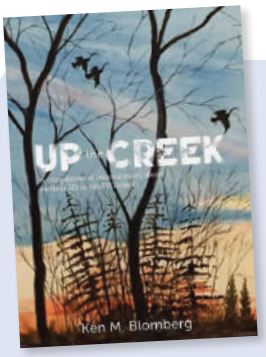
In autumn, the brilliant shades of yellow, orange, and red overrule the green pigments in leaves that thrive only in warm weather. As temperatures drop and daylight hours diminish, autumn pigments kick in and leaves transform like magic, sometimes overnight. This is the moment to explore the countryside to view its full glory. Time is of essence as the winds of the season will eventually send the foliage to the forest floor. These are, as my cousin from Sweden would say, "stop the clock" moments. If only the full spectrum of fall's colors and weather could last for months, not just a few short-lived weeks. A yearly calendar containing twelve months of Octobers, would truly be a dream come true.

Who among us can gaze across the landscape at this moment in time without wonder? What power - beyond the science of it all - creates the brilliant shades of yellow, orange, and red? We know the green pigment in leaves is chlorophyll and thrives only in warm weather. As temperatures drop and daylight hours diminish, carotene and anthocyanin pigments persist and cause leaves to appear yellow and red respectively. Picture postcard beauty beyond description, lies in view and can soften even the hardest of souls. I dare to ponder - who really controls the paintbrush?

For hunters, October means following the course of migrant game birds. For birders, it's time to keep an eye on the sky and in the bush. Throngs of juncos, warblers, fox sparrows and robins will invade northern states soon. Waterfowl and cranes will stage in large numbers throughout our state. Geese chase their flyways and woodcock slip in quietly – without fanfare and in the dark of night – their initial rides on the wave of northwesterly winds. Dogwood thickets and alder bottoms become transitory homes for woodcock - their secluded whereabouts only uncovered by investigating bird dogs and hunters.

Step outside, take a deep breath and smell the season. Fallen leaves, pine needles and brown grasses soaking in the morning dew arouse our senses like nothing else. Exhale and see your breath for perhaps the first time since last winter. Enjoy the tang of frosty mornings and crisp moonlit nights. Until next spring, you'll smell nothing more refreshing.

October will light the first fire of the season in the woodstove – another milestone of the year. Outside our back door is a growing pile of oak firewood thanks to relatives and friends – as well as assorted elm, maple and popple - thanks to the woods that envelops our creek. Together, in October, we greet the chill that accompanies the season.



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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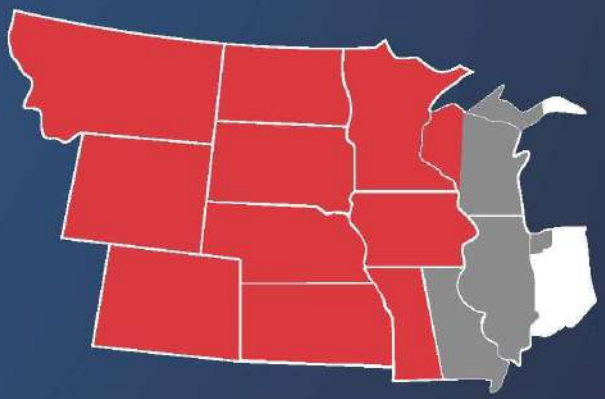

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Office Closed for Christmas Day	December 25, 2024
Office Closed for New Year's Day	January 1, 2025
WRWA Annual Conference (Green Bay)	March 24 - 28, 2025

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