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Water Engineering and Beyond

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An Exciting Conference for All

By Troy Larson

I hope to see you in Madison May 28 through May 30 for CSWEA's 98th Annual Conference. This is the last stop in Madison before the 100th Annual Conference that will be held in Illinois in 2027, and we are going to raise the bar to start the countdown towards that centennial event.

Our plans for the Madison conference are ambitious, as we want to have a memorable and valuable experience for all the members of CSWEA who attend. The young professionals (YPs) will be front and center in this conference, as they have been for years. The YPs are planning many things, including a service project at the Henry Villas Zoo! This year's local tours are going to be memorable as well. We will tour the Sun Prairie Water Pollution Control Facility and the stormwater tour will be on the grounds of Epic in Verona, where their extraordinary campus will serve as a backdrop to conversations on stormwater management. We will be hosting a golf outing at the scenic Pleasant Prairie golf club and a 5K walk/run for those looking for some activity. Rick Wilcox, who is nationally renowned at his craft, will entertain our crowd at the meet and greet social hour. The social hour will be held in an extraordinary space within the Madison Public Library, which has views of the Wisconsin Capital.

As always, the technical committee has put together an exceptional show, where technical experts from the Central States area and beyond will share their thoughts on many different topics central to our water workforce. This year's technical program will also feature an operations track for the people interested in practical applications as well as an ethics track for those in need of refresher credits.

Additionally, the conference will celebrate the success of our operations competition teams and will have opportunities for people to try some of the competitions that they are working to master. The banquet dinner is a great opportunity to network and share gratitude for those that are doing so much to improve our industry. Many thanks to the local arrangements committee under the leadership of Cathy Wunderlich and the technical committee led by Steven Graziano. Please circle May 28 to 30 on your calendar and plan to join us in Madison!

On another note, the strategic plan has been completed but work will continue as we implement our strategy to remaining technically excellent, offering networking opportunities and providing opportunities to grow our water workforce. I believe that the strategic plan has come together in a very practical manner and reflecting the values of our membership in a way that will sustain and improve the Association. Special thanks to Amy Underwood, who will roll off the executive committee as a past president, during the conference, her contributions have been exceptional, and she has been a driving force during the development of the plan.

I want to close my final article as President with a sincere *thank you*. I am grateful for your support during the past year. It's a highlight of my career and greatly appreciated. Thank you! CS

Water Environment Federation
the water quality people

House of Delegates Discuss 2025

Written by Anna Munson

Anna Munson

Liz Heise

The WEF House of Delegates is comprised of representatives from all of the WEF member associations (MAs), as well as "Delegates-at-large," who can apply to represent various underserved groups. The purpose of the House of Delegates is to serve as the liaison between the MAs and WEF. The HOD held a quarterly update call in December where the following was discussed:

1. **WEF is focused on expanding participation.** The water industry needs professionals from all backgrounds. It will be important as we go forward in our industry toward the goal of "one water" that we engage beyond just engineers, and even operators. We need water communicators, water architects, water strategists, etc.
2. **The "Our Blue World" film will be released shortly.** MAs will have access and are encouraged to have screenings, as well as are requested to work with their partner universities to have screenings. If you are interested in hosting a screening, please reach out to Liz or Anna for the WEF Toolkit that provides a step-by-step guide on how to host a screening.
3. **WEF employees are moving around and WEF has had a lot of turn over recently.** The Board is working on implementing the strategic plan: How can we have the biggest impact globally? Who can we partner with globally to move the water sector forward?
4. **WEF is also evaluating WEF Board vs WEF staff attendance at different MA conferences to determine who will have the best impact at the event.** Some of the smaller MAs may benefit from a WEF staff member supporting in lieu of a board member. They are looking at reducing the amount of travel expected of board members. Board members also will not be attending the Winter Meeting, nor will the CLC.
5. **WEF Executive Director Ralph Exton released a statement**. He noted that WEF is engaged in with a realtor to sell the WEF building because it is underutilized since the majority of WEF staff works from home. They are looking at other spaces that are smaller to rent.
6. **All are welcome and encouraged to attend a WEFMAX event.** WEFMAX is hosted by different MAs as an opportunity for MA leaders to exchange ideas and to bring back to their organization.

In 2025, the three WEFMAX events will be held in:

- Oklahoma City, OK, April 2-4. Hosted by OWEA. Theme: Building Bonds – Cultivating Community and Culture in MAs
- Salem, MA, April 30-May 2. Hosted by NEWEA. Theme: Workforce Development – It's Not Witchcraft!
- Palm Springs CA, June 4-6. Hosted by CWEA. Theme: VIBE – Value, Inclusion, Belonging, Equity

7. The Budget Committee Update

- Now is the time to get started on grant applications!
- They noted that WEF has been working in a deficit since COVID but is still financially strong.
- The Residuals and Biosolids Specialty Conference and the Innovations in Process Engineering conference will be combined this year as a pilot to reduce overhead costs.
- There have been consistently strong WEFTECs so they are not changing that, but looking at how to further engage exhibitors.
- Looking at trying to create a balanced budget for next year instead of continuing to operate in a deficit

8. New seminar on the horizon: The HOD DEI Committee is going to have a seminar on belonging and inclusion and is looking for an MA to present on DEI efforts

9. The Water Fly-in is coming up! The HOD Water Advocacy Work Group provided an update on the Water Fly-in, which will be on April 8-9 in Washington, DC. Everyone is encouraged to attend. WEF will provide guidelines for how to optimize your experience.

10. A drop in the bucket: The HOD Circular Water Economy Work Group is collecting water stories, they will be reaching out to MAs.

11. The Implementation of the HOD Strategic Plan: The HOD Strategic Plan Work Group is looking to create a "dynamic" action plan for HOD members to implement the "HOD Strategic Plan," which is different than the WEF Strategic Plan. The goals of the HOD Strategic Plan are *Knowledge Sharing* and *Engagement.*

The WEF Membership Committee is also looking at trying to improve communication between MAs and has implemented regional chairs to work with each of the MAs. A similar initiative is taking place within the WEF SYPC to try to connect MA YP chairs with each other so they can network and see what other MA YP groups are doing successfully and provide support.

If you have any questions about WEF or WEF updates, please contact Liz (*e.heise@trotter-inc.com*) or Anna (*amunson@hazenandsawyer.com*). CS

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Strength and Community

By Patrick McNamara

I've always felt that our WI section of CSWEA has been a welcoming and hard-working group of people. The kind of people who take their work seriously, but not themselves too seriously, and like some good clean humor. I do too. I always *felt* that our section was strong, but after serving as Chair for a year I *know* that it is. This role comes with so much support, including shared knowledge from people who have been here before and new energy from people jumping on board to help. Our work is extremely important, our tasks are serious, and our people and meetings are a whole lot of fun. If you are reading this and have been on the fence about jumping onboard, I urge you that now is the time, and there will be a lot of people ready to welcome you and support you. You can see the list of officers and committees that might interest you here: *www.cswea.org/wisconsin/about-us/officers*.

You can also find a lot of the officers at our spring events. Depending when you read this, you might still have a chance to catch our WI Spring Biosolids Symposium on March 18 in Stevens Point. This is a great event hosted jointly by the Wisconsin Wastewater Operators Association. Then, we have the meet-and-greet on April 21 and the Education Seminar on April 22 in Madison, WI. We will have a full room with excellent speakers and plenty of time for in-person networking. Last, and definitely not least, we have our beloved Annual Meeting on May 28-30. It's a little bit later this year so that you have more time to plan and to invite a colleague.

I look forward to seeing many of you again at these events and hopefully meeting new faces as well. I've thoroughly enjoyed working in this role over the past year and know that our section will thrive under the leadership of Lindsey Busch this upcoming year. I look forward to working with her and staying involved with this fantastic organization for years to come.

Have a great spring, and see you soon! CS

Focus and Winning

By Mark Enochs

This is a big year for the Minnesota Section! We are getting ready to host the CSWEA Annual Meeting next year. Every year, Central States Water Environment Association holds an annual meeting. The meeting location rotates between Minnesota, Wisconsin, and Illinois. This year's conference is in Madison starting May 28. In 2026, it returns to Minnesota.

In 2013, I had the honor of chairing the Local Arrangements Committee for the 2014 CSWEA Annual Meeting, which was held in St. Paul. What a rewarding experience! Sure, it was challenging, but it was well worth it, especially working with such fun, organized association members. We had close to 18 people working together for over a year in close coordination to make sure the everything was well prepared and of high quality: technical program, rooms, food, sponsors, social events, signs, tours, and so on. There's a lot to do.

Quentin Hahn of the Burns & McDonnell Minneapolis office is the Local Arrangements Chair for the 2026 meeting. Your help is needed. This is a wonderful opportunity to be part of a fantastic team with an important mission – to host hundreds of people for multiple days, enabling water professionals to connect and share a free exchange of technical perspectives as well as food and fun. The efforts are already underway. So, please contact Quentin at *qahahn@burnsmcd.com* to get involved.

The Minnesota Section continues to thrive. We had our first real planning session in June, shortly after the Annual Meeting. It's called the Minnesota Exchange (MNX) – you're all invited. This year each committee Chair and Vice Chair shared with each other what their committee purpose is. It was a group exercise prior to the MNX to dig into the organization's bylaws and procedures to remind ourselves what our focus should be. This re-visioning strengthened us as a Section and enabled each Committee to be more intentional and efficient.

We were well represented at the WEFTEC 2024 Operations Challenge event. Kelsey Van Deusen of Red Wing was a member of the winning team *The Pumpers* – they won 1st Place in their Division! Kelsey had a fantastic experience with Ops Challenge and encourages other MN Section members to get involved. Minnesota has so much potential to continue winning. Eric Lynne of Donohue & Associates (*elynne@donohue-associates.com*) is the MN Section Liaison with the Minnesota Wastewater Operators Association. Let him know you're interested! CS

"This is a wonderful opportunity to be part of a fantastic team with an important mission – to host hundreds of people for multiple days, enabling water professionals to connect and share a free exchange of technical perspectives as well as food and fun."

Spring Training

By Christopher Buckley

Brrrr... we are talking about the CSWEA Spring Issue, yet as I write this, it's about 10 degrees outside. I would say that we have actually had "winter" here in Illinois this year.

With the eventual spring thaw comes some of the more challenging times of the year: April showers can bring lots of overtime hours for our industry operators due to water/force main breaks and WWTP upsets. That first, big spring wet weather flush often wreaks havoc with WWTP biological operations that can take weeks of diligent effort to rectify.

Since our last chat, it has been a few months of substantial changes for many of us and, as we all know, change is hard. We have to constantly remind ourselves, indeed train ourselves, to adapt to change. I, myself, moved to a new work organization, after five great years at another firm. That was tough decision to seek new challenges; leaving a comfortable place for another that was completely different.

Our government is also changing in ways that might be challenging to our water industry. Hard to say where we may end up but as water industry professionals, it is our responsibility, indeed our duty, to keep advocating for clean water with our communities and legislative leaders. We must not let the substantial progress we have made towards this fundamental right be derailed by what may appear to be short term gains.

Let's talk about how CSWEA is supporting clean water with the Illinois Section's busy spring line-up of activities:

- CSWEA/IAWA will hold its **Annual Government Affairs Seminar** on March 12 in Springfield, where water industry professional can hear the latest and greatest from our regulators and politicians on what is coming down the proverbial legislative pipe.
- **Water's Worth It Essay:** An annual CSWSEA Tri-State effort promoting the value of water to our upcoming middle school generation. Winner receives a cash prize. Essays are due on May 1. For IL, reach out to Cassandra Barrett, Chair of the IL Public Education Committee, to assist in any way you can!
- The **Operations Committee** continues its excellent training regimen with monthly scheduled Operator Training webinars. These webinars further operator knowledge, help prepare for that next certification or get in CEUs.
- **IL Resource and Energy Recovery Committee** (R2E, formerly known as the BEER Committee) will be planning its next annual seminar for November. The committee meets the first Wednesday each month on Teams at noon. Please join us!
- Its freezing now, but May is really not that far away for **CSWEA's Annual Meeting, May 28-30.**

Watch the CSWEA website for upcoming events from all our committees. If you are interested in getting involved and don't know where to start, reach out to myself and or one of the committees that sounds interesting. Networking is an invaluable tool and helps to make us all stronger.

I am looking forward to seeing everyone out there this year at one of the many meetings, events, or social gatherings! CS

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2025 OFFICER NOMINATIONS

2ND VICE PRESIDENT MARY-FRANCES KLIMEK

Mary-Frances Klimek has been part of the wastewater industry for more than 35 years and has been a member of CSWEA and WEF for many of those years. She has served as CSWEA's Wisconsin Section Chair, Annual Conference Local Arrangements Chair, and currently is chair of the Wisconsin Section Management Seminar Committee. She is a member of the CSWEA 7S Society and has participated on committees for both CSWEA and WEF. Additionally, she has presented at seminars on topics from employee retention to activated sludge foaming. Mary-Frances has a BS in Biological Sciences. She serves on the committees assuring state certification of the Racine Unified Public Schools. Additionally, she is a member of the advisory committee for civil engineering and architectural programs at Gateway Technical College. Today, she is the Superintendent at Racine Wastewater Utility, where she has worked since shortly after graduating from college.

PWO '25-'27 ERIC LYNNE

Eric Lynne first joined WEF as an operator at the Brookings, SD WWTF, where he also served as the charter President of the SDSU Student Chapter when getting his BS and MS degrees in civil and environmental engineering. Following the advice of Ken Sedmak, Eric joined CSWEA in 2010 and gave his first presentation at an Annual Meeting. Eric has continually found ways to serve the organization and encourage others to explore our technical and social activities. Eric has served as the Wisconsin Section Student and YP Committee Chair, CSWEA YP Representative, Wisconsin Section Secretary-Treasurer, WEF Delegate, Minnesota Section MWOA Liaison, and is a member of the 7S Society. Eric puts his professional engineering license to work at Donohue as Regional Vice President of Minnesota bringing wastewater solutions to municipal clients.

WEF DELEGATE '25-'28 AUTUMN FISHER

Autumn Fisher has been a member of CSWEA and WEF since 2015 and is an Advanced Wastewater Operator in the state of Wisconsin, with 18 years of experience operating and optimizing wastewater treatment processes. She has presented at CSWEA's Annual Conference, WEFTEC, and the WEF Nutrient Removal and Recovery Symposium. Autumn is a member of the 7S Society and actively serves on several committees and organizing bodies, including as the 2025 CSWEA Annual Conference Local Arrangements Committee Silent Auction Chair, WI Section Membership Committee Chair, and Education Seminar Committee Immediate Past Chair. Additionally, she has served as the Innovation and Technology Committee Chair. She holds an undergraduate degree in Chemistry from the University of Wisconsin-Oshkosh and a master's degree in Project Management from the University of Wisconsin-Platteville. She currently works as a Client Services Manager and Operations Specialist for Donohue & Associates, Inc. CS

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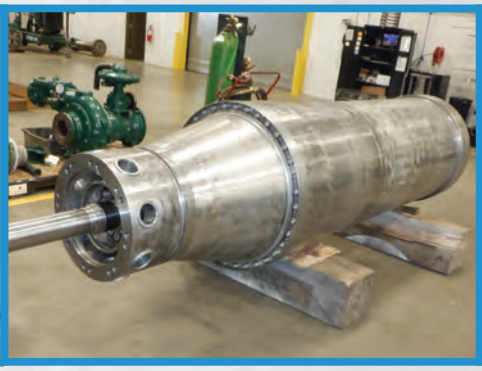

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Megan Livak

Director of Customer Strategy
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Falling into Water: A Career Path of Passion and Purpose

I often say I "fell" into the water industry, but my journey has been anything but accidental. It's been a path filled with passion, purpose, and the incredible opportunity to work with dedicated water heroes from around the world – and I couldn't be happier.

My career began at a consulting civil engineering firm, where I was introduced to the water industry through the New Jersey Water Environment Association (I'm originally from Jersey). Involvement in the NJWEA Young Professionals subcommittees and events ignited a deep-seated passion for making a positive impact. As I became more involved on the local level, I also had the opportunity to get more involved on the WEF level. Attending the Utility Management Conference's YP Summit in Austin, TX, was a pivotal moment, confirming my desire to dedicate my career to water. From that point on, I was determined to pursue a career in water so I shifted my focus and began exploring how I could transition into this field, despite feeling I didn't have the specific skillset it would require.

After months of hard work, persistence and determination, I had the incredible opportunity to join the Water Environment Federation as the Students and Young Professionals Manager on the Association Engagement Team, where I created, supported, and guided international student and young professional programs and collaborated with volunteers nationwide. While at a member association leadership event, I met Mohammed Haque, CSWEA Executive Director, who introduced me to the Global Water Stewardship (GWS). I was immediately drawn to Mo's passion for the organization, which matched my passion for protecting public health and the environment. He invited me to join GWS on their 2019 August Service Trip to Costa Rica. There, I fell in love with the mission of the organization which aimed to bring wastewater education to Costa Rica and empower communities to build and invest in their wastewater infrastructure. They had also just created a student design competition for Costa Rican students, and being well versed in the WEF SDC, I was excited to be a resource.

One trip to Costa Rica turned into many, and I've had the amazing opportunity to forge relationships with local Costa Rican utilities, universities, students and volunteers across the country. We've taught elementary and middle school kiddos about the importance of water in their communities; challenged university students to develop designs for problem statements within their communities; empowered rural communities to build wastewater infrastructure to eliminate flooding and protect their local water environments; developed operator training programs; and started the first ever wastewater conference of its kind, amongst so many other things. In the process, we've formed lasting relationships with locals as well as other GWS volunteers and I am so honored to be a part of this passionate group of volunteers.

Receiving the Water Stewardship Award this past May was such an honor. This award exemplifies passion, volunteerism and leadership towards improving the global water environment and I am humbled to be a recipient. I can't wait to continue our work across Central America. Pura Vida. CS

Adam Clark

Chief Wastewater Operator
Stevens Point Wastewater Treatment Plant, Stevens Point, WI

If you've ever toured the wastewater treatment plant in Stevens Point, you've likely had the pleasure of meeting Adam Clark, the facility's dedicated Chief Wastewater Operator. Since stepping into this role in 2017, Adam has become a cornerstone of the plant's operations, overseeing a team of four operators and ensuring the plant's day-to-day processes run smoothly. Adam's leadership and expertise play a crucial role in managing the plant's advanced treatment processes and contributing to the clean water mission that drives CSWEA and the wastewater industry as a whole.

The Stevens Point facility treats 2-million to 2.5-million gallons of wastewater daily and operates 15 lift stations throughout the city. During Adam's time as Chief Operator, the plant has undergone modernization efforts, including Class A Biosolids drying and the replacement of six pneumatic ejector lift stations with submersible pumping stations to reduce maintenance needs and eliminate confined spaces. The facility also boasts advanced treatment capabilities, such as biological phosphorus removal, anaerobic digestion, and the previously mentioned, state-of-the-art sludge dryer that produces Class A biosolids. These processes, not often commonplace in facilities of similar size, have positioned the plant as a leader among smaller wastewater facilities.

Adam's passion for wastewater treatment began during his time at the University of Wisconsin-Stevens Point, where he earned a bachelor's degree in Soil and Waste Resources in 2009 with a focus on wastewater treatment operations. After starting his career in Racine, he gained diverse experience in Oshkosh, Sheboygan Falls, and Stevens Point, where he joined as an operator in 2012 before being promoted to chief operator.

Reflecting on his career journey, Adam highlights the critical role of hands-on learning and fostering a positive work environment. He takes pride in the mutual respect and camaraderie within his operations team, which creates an enjoyable and motivating atmosphere that drives them to perform at their best.

In addition to his role at the plant, Adam serves as Vice Chair of the Wisconsin Operations Committee for CSWEA. His involvement began about four years ago, inspired by colleagues who encouraged him to join. Adam emphasizes the importance of the wastewater community's collaborative spirit, describing it as a network where professionals readily share knowledge and lend support to one another. This cooperation, he explains, is instrumental in driving innovation and addressing challenges across the industry. Adam's dedication to this ethos is evident in his efforts to assist other facilities by sharing insights from the Stevens Point sludge dryer project. From design to operation, Adam and his team spent countless hours consulting with engineers and visiting other plants to learn from their experiences. Now, they frequently host tours and answer questions from other facilities considering similar upgrades. This proactive sharing of knowledge not only helps individual plants avoid common pitfalls but also strengthens the industry overall by reinforcing a sense of community and unity within the wastewater treatment mission.

Looking ahead, Adam sees challenges like PFAS management as critical for the industry's future. He acknowledges the financial and technological hurdles involved but remains optimistic about the younger workforce's passion and drive to innovate. He believes that the new generation of operators is driven to make an impact, which will help tackle these emerging challenges.

Outside of work, Adam is an avid waterfowl hunter and shotgun sports enthusiast, frequently traveling to North Dakota or Manitoba for hunting trips. He also enjoys spending time with his wife, their seven-year-old son, and their family dog. Whether troubleshooting equipment at the plant or engaging in CSWEA activities, Adam demonstrates an unwavering dedication to clean water and fostering connections within the industry. His efforts continue to bolster both the Stevens Point facility and the broader CSWEA community. Be sure to introduce yourself and say hello the next time you see him. CS

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Mark Enochs

President, MNX inc.

Mark Enochs has spent more than 30 years shaping the water and wastewater industry through a career that spans public service, consulting, and entrepreneurship. As the President and sole operator of MNX inc, a manufacturer's representative firm based in Minnesota, Mark manages a portfolio of 27 manufacturers across the Upper Midwest, serving both municipal and industrial sectors with a focus on advanced process equipment. For the past decade, Mark has provided clients with seamless support from project inception through equipment startup.

Mark's passion for the water quality industry was ignited during childhood when exploring creeks and learning about environmental stewardship, creating a deep connection to nature. His path led him to The Ohio State University, where he earned a degree in environmental engineering. He started his career as an NPDES permit writer for the Ohio Environmental Protection Agency, where he authored rules and guidance for wastewater discharge permits, troubleshooted failing wastewater treatment plants, and worked to simplify the permitting process. One of his key achievements was creating a streamlined, one-sheet application specifically for gas station owners, who often struggled with the lengthy and complex process of obtaining discharge permits for replacing underground storage tanks. This innovation reduced approval times from six months to just two weeks, allowing these small-scale applicants to meet environmental requirements efficiently while maintaining compliance.

After his time with the Ohio EPA, Mark moved on to the City of Columbus, where he served as a wastewater process engineer. He later transitioned to the consulting engineering field, working for both a mid-sized national firm and a large international engineering firm. His work in consulting brought him to Minnesota, where he managed a large, multi-year, multi-million-dollar program for a major client. After his stint in consulting, he started MNX inc. and then acquired Parsons Engineered Products, fully transitioning to representing advanced process equipment manufacturers as a vendor as well as providing customized online training resources.

Drawing on his extensive experience, Mark has observed a growing emphasis on pretreatment in both industrial and municipal wastewater treatment, which is increasingly driven by the need to manage risks to public and environmental health. This focus has grown to include addressing difficult contaminants such as PFAS, metals, and fats, oils, and grease (FOG).

Mark also highlights the challenge of balancing competing priorities. Achieving regulatory compliance is crucial, but it must be done while managing costs and working within limited resources—a complex equation that requires careful planning and innovative solutions. At the same time, advancements in technology are driving progress in wastewater treatment. Mark notes the expanded use of membranes and more sophisticated monitoring and control systems as examples of tools that are reshaping the industry.

Despite these advancements, regulatory challenges remain significant, especially in tackling emerging contaminants like PFAS. Mark emphasizes the importance of weighing costs against benefits to ensure that resources are allocated effectively while achieving meaningful environmental outcomes.

Mark's contributions extend beyond his business operations. He has been an active member of the CSWEA since moving to Minnesota, serving as Chair of the Minnesota Section and Chair of the Industrial Wastes Committee. He views professional associations as vital to staying informed and connected, crediting them with providing opportunities to engage with peers, share knowledge, and address challenges collaboratively.

Outside of work, Mark enjoys spending time with his family, which includes his wife and their three grown children who live nearby. An avid musician, Mark plays both the tuba and bass guitar. He also leads Bible studies and embraces the outdoors through activities like boating, swimming, hiking, and skiing. From mentoring younger professionals to actively contributing to CSWEA initiatives and delivering impactful solutions for his clients, Mark is an invaluable asset to our community. He welcomes the chance to connect with new faces, so don't hesitate to reach out or say hello when you see him. CS

Membership Fee Increase Notice

At the January 16, 2025, Executive Committee Meeting, the CSWEA leadership decided that membership fees need to be increased due to rising costs and additional programming that CSWEA wants to continue to provide for its membership. The decision was made to propose an increase of $10 effective January 1, 2026 across all categories except for the WEF Student memberships that will remain free. The proposed increases are as follows and will be voted on at the Annual Business Meeting on May 30, 2025.

	Current	Proposed
Associate Members (CSWEA Only)	$45	$55
Professional/Executive/Academic/Operators	$45	$55
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The CSWEA Dues Increase is effective January 1, 2026.

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30TH ANNUAL CSWEA EDUCATION SEMINAR | APRIL 22ND 2025

Starting Strong:
Preliminary and Primary Treatment as the Key to Resource Recovery

STARTING STRONG: Preliminary and Primary Treatment as the Key to Resource Recovery

Mark your calendars for the CSWEA 30th Annual Education Seminar to be held in person on April 22, 2025 at the Monona Terrace in Madison, WI. We have an exciting program to discuss trends in resource recovery for utilities in the Central States region. Often times, resource recovery technologies are focused on concepts such as energy production, natural gas recovery via RIN programs, nutrient harvesting, biosolids beneficial reuse, and water reuse; however, recent innovations in preliminary and primary treatment are enabling and even accelerating the adoption and impact of resource recovery solutions in our industry. Join us as we discuss how preliminary and primary treatment are pillars to achieve resource recovery.

MIDWEST STUDENT DESIGN COMPETITION (MSDC)

The 6th Annual MSDC will be held concurrently with the Education Seminar on April 22. University Students from CSWEA and surrounding States will be presenting their environmental and wastewater design projects. Please consider attending these presentations to learn about their contributions to the water industry and support these budding professionals. Presentations will start at 10:00 am.

30th ANNUAL CSWEA EDUCATION SEMINAR SPEAKERS


Dr. Glen T. Daigger, PhD, PE


Matt Magruder


Tim Gualandri, PE


Nathan Qualls, PE


Joe Watson


David Henderson


Shanna Czeck


Mark Eddington, PE


Dr. Sudhir Murthy, PhD, PE

MEET & GREET/DINNER

Attend a meet and greet reception on April 21, the day before the MSDC, from 5:00 pm until 6:30 pm, where both university students and seminar presenters will be available for networking at the Monona Terrace.

After 6:30 pm, attendees are welcome to join us for a social event at the Great Dane Pub & Brewery. If interested in attending, please sign up when registering.

Monona Terrace
1 John Nolen Dr, Madison, WI 53703

The Great Dane Pub & Brewery
123 East Doty Street, Madison, WI 53703

30TH ANNUAL CSWEA EDUCATION SEMINAR | APRIL 22ND 2025

Starting Strong: Preliminary and Primary Treatment as the Key to Resource Recovery

8:00-8:10: WELCOME AND INTRODUCTIONS

8:10-9:00: KEYNOTE: WHY RESOURCE RECOVERY REQUIRES ADVANCED PRELIMINARY AND PRIMARY TREATMENT

SPEAKER: DR. GLEN T. DAIGGER, PHD, PE, BCEE, NAE, CAE
PROFESSOR OF ENGINEERING PRACTICE AT THE UNIVERSITY OF MICHIGAN
PRESIDENT AND FOUNDER OF ONE WATER SOLUTIONS, LLC

We all learned in our wastewater treatment classes in school about how biological treatment systems remove soluble BOD5. Just think about the math we all learned relating the effluent soluble BOD5 (or the readily biodegradable COD) to the process solids resident time (SRT). This is because bacteria only directly metabolize soluble organics. This is all good and fine, but the organic matter in many wastewaters (including municipal wastewater) is in particulate and colloidal form, not soluble. Biological systems can treat particulate and colloidal organic matter, by a variety of mechanisms, but this requires energy inputs and simply converts more than half of the particulate and colloidal organic matter to biological sludge which is difficult to convert into useful products. Recovery of carbon for useful purposes requires it to be removed upstream of the biological system, which is where advanced preliminary and primary treatment systems come in. Fortunately, an increasing number of options (beyond conventional primary clarifiers) are becoming available and will be discussed.

DETAILED BIO:

Dr. Glen T. Daigger is currently Professor of Engineering Practice at the University of Michigan and President and Founder of One Water Solutions, LLC, a water engineering and innovation firm. He previously served as Senior Vice President and Chief Technology Officer for CH2M HILL (now Jacobs) where he was employed for 35 years, as well as Professor and Chair of Environmental Systems Engineering at Clemson University. Actively engaged in the water profession through major projects, and as author or co-author of more than 200 technical papers, five books, and several technical manuals, he contributes to significantly advance practice within the water profession. Dr. Daigger has been the recipient of numerous awards, including the Kappe, Freese, and Feng lectures; the Harrison Prescott Eddy, Morgan, and the Gascoigne Awards; and the Pohland Medal. He is a Distinguished Member of the American Society of Civil Engineers (ASCE), a Distinguished Fellow of IWA, and a Fellow of the Water Environment Federation (WEF). Dr. Daigger is also a member of numerous professional societies, including the US National Academy of Engineers and the Chinese Academy of Engineering.

9:00-9:30: FROM REFUSE TO RESOURCE: RESEARCH ON THE BENEFICIAL REUSE OF PRELIMINARY AND PRIMARY TREATMENT BYPRODUCTS

SPEAKER: MATT MAGRUDER
ENVIRONMENTAL RESEARCH MANAGER
MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

The Milwaukee Metropolitan Sewerage District (MMSD), in collaboration with Marquette University, has begun to evaluate the potential to beneficially reuse grit and scum from preliminary and primary treatment, respectively. Currently, both byproducts are collected and landfilled, but each presents an opportunity to be put back to work. During this session, you will learn about the preliminary research that has been conducted to evaluate two opportunities to divert these byproducts from landfills. The first, a collaboration with Dr. Baolin Wan, looks at the potential to take wastewater grit and incorporate it into concrete. The second, a collaboration with Dr. Damian Kokkin, looks at the feasibility of producing biodiesel from wastewater scum. There is still a long way to go, and the path forward is anything but clear for each of these alternatives, but we are seeding innovative research to explore opportunities to put these resources to work instead of paying to throw them away.

DETAILED BIO:

Matt Magruder has been with the Milwaukee Metropolitan Sewerage District for more than 15 years, and he is currently serving as the Environmental Research Manager. In addition to managing and coordinating the District's research efforts, Matt is leading MMSD's Digital Transformation Framework Project. Matt represents the District on various planning, advisory, and industry working groups including the CSWEA WI Resource Recovery and Energy Committee. He received his BS in Biology from UW-Whitewater and his MBA from Cardinal Stritch University. In his free time, Matt enjoys reading, exercising, and spending time with his family.

9:30-10:00: POSTER SESSION & BREAK

10:00-10:30: OPTIMIZING NUTRIENT SEQUESTRATION: HOW SCREENINGS AND CLEANING CAN DETERMINE THE EFFECTIVENESS OF NUTRIENT SEQUESTRATION HARVESTING

SPEAKER: TIM GUALANDRI, PE
DISTRICT ENGINEER AT THE FOX RIVER WATER RECLAMATION DISTRICT

Efficient return sidestream phosphorus capture is essential for meeting increasingly stringent regulatory limits in wastewater treatment. This presentation highlights critical operational lessons learned from FRWRD's MagPrex nutrient sequestration process. Specifically, the presentation will address how regular cleaning of the MagPrex unit is vital to sustaining effective phosphorus removal. Accumulation of non-biodegradable materials can lead to pump blockages, reduced efficiency, and downtime if maintenance protocols are neglected. Effective screening of influent prior to treatment is a critical consideration needed to minimize maintenance challenges and improve long-term system performance. By integrating these practices, wastewater operators of nutrient sequestration processes can achieve more reliable phosphorus sequestration, ensuring regulatory compliance and optimizing treatment efficiency.

DETAILED BIO:

Tim Gualandri has more than 13 years of industry experience serving as an Engineering Consultant for nearly 12 years to now, serving as the District Engineer for the Fox River Water Reclamation District (FRWRD). His experience has encompassed all facets of a project from study, design, bid services and both office and field services during construction. He has been responsible for managing engineering services for municipalities across the Country.

Mr. Gualandri has solved complex engineering challenges by utilizing innovative solutions. He has mentored under several leading wastewater experts and has onsite experience commissioning wastewater processes with plant operations staff. He volunteers his time to advance the education of wastewater topics in the industry by recently serving as the WEF Workshop Selection Committee Chair and has been on the selection committee for more than 10 years as the Water Reuse workshop subcommittee liaison. He has presented at both local, regional, and national conferences on various wastewater topics throughout his career. Mr. Gualandri is a registered professional engineer in Illinois and Oklahoma.

10:30-11:00: METALS, CATIONS, AND RESOURCE RECOVERY: HOW INFLUENT CHARACTERISTICS IMPACT PLANT OPERATIONS

SPEAKERS: NATHAN QUALLS, PE
EXECUTIVE DIRECTOR OF NEW WATER
JOE WATSON
PROCESS & PROJECT SPECIALIST AT NEW WATER

NEW Water, the brand of the Green Bay Metropolitan Sewerage District, commissioned their Resource Recovery and Electrical Energy (R2E2) project in 2018, transforming their solids processing facility into a resource recovery facility. The R2E2 facility features anaerobic digestion, electrical energy production with CHP, dewatering centrifuges, scalping dryer, fluidized bed incineration with heat recovery, and struvite harvesting. NEW Water will share their resource recovery experience including a focus on influent characteristics and their impact on struvite harvesting performance.

DETAILED BIO:

Nathan Qualls is the Executive Director of NEW Water, where he has worked for more than 16 years. Prior to his role as Executive Director, he worked as the Director of Technical Services as well as a Staff Engineer in NEW Water's Engineering Department. He has a wealth of experience in the wastewater sector, including industrial wastewater treatment prior to his work with NEW Water. Mr. Qualls has a BS in Chemical Engineering from the University of Wisconsin-Madison. He is a registered Professional Engineer in Wisconsin.

Joe Watson is the Process & Project Specialist at NEW Water, where he has worked for more than nine years. In Joe's current role he focuses on process optimization and the success of NEW Waters capital upgrade projects. Joe's Prior experience includes seven years as a Wastewater Operator, Operating NEW Waters two facilities. Joe Watson has a BS in Water Resources from the University of Wisconsin-Stevens Point as well as an AS in Natural Resources from Fox Valley Technical College.

11:00-11:30: MORNING PANEL Q&A

11:30-12:45: LUNCH WITH POSTER SESSION

12:45-1:00: FOOD WASTE SCREENING FOR ENERGY PRODUCTION: WEST LAFAYETTE RECEIVES FOOD WASTE FROM PURDUE CAFETERIA

SPEAKER: DAVID HENDERSON
UTILITY DIRECTOR OF THE WEST LAFAYETTE WATER RESOURCE RECOVERY FACILITY

West Lafayette Water Resource Recovery Facility has been producing energy from food waste for more than 15 years. This presentation will cover how taking food scraps from five dining halls at Purdue University was the first step in their energy goals. Since then, this program has evolved to accept food waste from Greek houses and multiple public drop-off points. David will discuss the benefits and challenges of their food waste program.

DETAILED BIO:

David Henderson is the Utility Director for the West Lafayette Water Resource Recovery Facility. He has worked in the wastewater industry for more than 32 years and holds a bachelor's degree from Purdue University in biology. Dave is a long-time volunteer with Scouting America.

1:00-1:15: ST. CLOUD'S FOOD WASTE TO ENERGY PROGRAM

SPEAKER: SHANNA CZECK
ASSISTANT PUBLIC UTILITIES DIRECTOR, CITY OF ST. CLOUD

The City of St. Cloud partnered with Tri-County Solids Waste Commission to host a Food Waste to Energy pilot study which used depackager equipment to separate organics from packaging. The recovered organics were anaerobically digested, along with municipal solids and other liquid high strength waste, in an effort to measure the increase in biogas production and energy production at the St. Cloud Nutrient, Energy and Water Recovery Facility. This successful pilot demonstrated the benefits of incorporating food waste into anaerobic digestion along with the impact of diverting organic waste from landfills. Following the pilot, a feasibility study was completed to determine the requirements and benefits of a full-scale facility. The City has also started a residential fats, oil and grease (FOG) drop-off program to divert this waste stream from landfills. The City is currently considering funding options for expansion of this program.

DETAILED BIO:

Shanna Czeck has been with the City of St. Cloud for eight years and is now the Assistant Public Utilities Director, working across the Department including water treatment and distribution, wastewater conveyance and treatment, hydroelectric operations, stormwater operations and renewable energy production. Shanna has worked as part of the utilities team for the recent renewable's projects including the installation of the nutrient recovery and biogas utilization projects. She is currently helping lead the utility into a new era of resource recovery including the recent food waste to energy pilot.

1:15-1:30: KISHWAUKEE WATER RECLAMATION DISTRICT PROGRAM AND TECHNOLOGIES

SPEAKER: MARK EDDINGTON, PE
EXECUTIVE DIRECTOR OF THE KISHWAUKEE WATER RECLAMATION DISTRICT

Following the great recession of 2007, economic and residential development in KWRD's service area ground to a halt. A simple plan to increase revenue through hauled waste receiving blossomed into annual seven-figure gains benefiting rate-payers and the environment alike. This presentation outlines how a medium-sized wastewater utility embraced innovation and calculated risk, to transition from a sewer plant to a state-of-the-art net-zero resource recovery facility.

DETAILED BIO:

Mark has been the Executive Director of the Kishwaukee Water Reclamation District in DeKalb, IL since 2010. He holds a bachelor's degree in civil engineering from Marquette University in Milwaukee, WI. Mark has 14 years' experience as an engineering consultant for various firms in northern IL, where he worked as a planner and designer. He is a registered Professional Engineer in IL and WI. Mark is a past president of the Illinois Association of Wastewater Agencies (IAWA) and CSWEA and is an active member of the National Association of Clean Water Agencies (NACWA) and the American Public Works Association (APWA). He is currently a trustee of the Downers Grove Sanitary District. Mark lives with his wife Lisa and three children, Ryan (18), Lily (16), and Brendan (13) in Downers Grove, IL.

1:30-1:45: **PANEL: GREASE – NUISANCE, PROBLEM OR BENEFIT. MIDWEST RAPID FIRE**

1:45-2:00: **PANEL: HOW DO WE RECEIVE FOOD WASTE AND GREASE AS A WASTEWATER UTILITY?**

2:00-2:30: **AFTERNOON BREAK**

2:30-3:00: **KEYNOTE 2: IMPACTS OF FINE PARTICULATES AND COLLOIDAL COMPOUNDS ON NUTRIENT REMOVAL AND RECOVERY**

SPEAKER: **DR. GLEN T. DAIGGER**, PHD, PE, BCEE, NAE, CAE
PROFESSOR OF ENGINEERING PRACTICE AT THE UNIVERSITY OF MICHIGAN
PRESIDENT AND FOUNDER OF ONE WATER SOLUTIONS, LLC

Bacteria directly metabolize dissolved organics and, consequently, these are the substrates of most interest for biological nitrogen and/or phosphorus removal processes. But, what about the particulate and colloidal organic matter in so many wastewaters? Are these unnecessary? Do they interfere with effective biological nutrient removal? Can they be an asset for biological nutrient removal processes? Can they be used to increase nutrient recovery? Questions such as these will be addressed in this presentation.

3:00-3:30: **ADVANCED PRIMARY TREATMENT, AAA, CARBON DIVERSION, AND NUTRIENT REMOVAL**

SPEAKER: **DR. SUDHIR MURTHY**, PE
CHIEF EXECUTIVE OFFICER OF NEWHUB WATER CORPORATION

Utilities experiencing as much as 50% load increase to biological processes are considering intensification within existing infrastructure, hydraulics and footprint. Off-loading this organic load at the front of the plant within primary treatment offers the opportunity for redirection toward anaerobic digesters. This combined increased load management and offloading has proven to be one of the most efficient ways of process intensification for many facilities in Europe. The Triple A settler or alternating activated adsorption settler is an "activated primary treatment" that can be retrofitted into existing rectangular or circular primary tanks at a hydraulic retention time of two hours and a sludge retention time of about 0.5 days. Several technology (approximately 20 worldwide) implementations demonstrate flexible designs adjusting to existing tank geometries and depths of 9-15 ft. Biosorption, bioflocculation, and bioassimilation provide percent treatment efficiencies of %COD/%N/%P of 60/25/33 removal compared with typical primary settling efficiencies of 33/9/11 removal, respectively. This settler can be used ahead of carbon removal, nitrification, phosphorus removal, or nitrogen removal plants and is intended for plants with anaerobic digestion.

DETAILED BIO:

Dr. Sudhir Murthy is Chief Executive Officer of NEWhub Water Corporation. NEWhub is a cleantech company that provides water innovation consulting services and manages through distributors of a suite of process technologies and equipment that intensify biological nutrient removal, water reuse, and promote energy efficient/neutral water reclamation systems. The Digestivore PAD, DEMON, AvN, inDENSE AAA, DETOUR, miGRATE and MINION technologies for wastewater treatment are part of the commercial suite that he has led. Sudhir was previously the Innovations Chief for DC Water and led the development and implementation of the Authority's innovation strategy. Sudhir led the concept development for over $1 billion in new engineering and construction including enhanced water reclamation, nutrient removal, deammonification, thermal hydrolysis, advanced clarification and biosolids end-use implementations at the Blue Plains plant. He has received several WEF awards including the Ralph Fuhrman Medal for Academia-Practitioner Collaboration, the George Gascoigne Medal for Wastewater Treatment Operational Improvement and the Camp Applied Research Award. Sudhir has a MS in Environmental Engineering and PhD in Civil Engineering from Virginia Tech and is a Professional Engineer and licensed wastewater treatment plant operator. He has approximately 250 publications or presentations, approximately 25 patents, and a google scholar H-Index of 58.

3:35-4:00: **PANEL SESSION Q&A**

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- Enhance nutrient removal efficiency
- Cut energy and chemical costs

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Improved Ammonia and BOD Removal

Plagued with toxicity events and ammonia breakthrough, likely from surfactant inhibition, this municipal plant deployed Moleaer nanobubbles as a chemical-free solution. Not only did they see an increase in nitrogen removal bacteria with nanobubbles, but they also achieved:

- **66%** lower effluent ammonia
- **41%** lower effluent BOD

Improved Year-Over-Year Nitrogen Removal

Challenged with quaternary ammonium compound inhibition that hindered their biological nutrient removal process and lead to treatment instability and upsets, this municipal wastewater treatment plant turned to Moleaer nanobubbles to achieve:

- **32%** reduction in effluent nitrogen
- **18%** reduction in aeration energy
- **85%** increase in TWAS percent total solids
- **25%** increase in biogas production

98TH ANNUAL MEETING

MAY 28-30, 2025 | MONONA TERRACE, MADISON, WI

One Water for All

REGISTER TODAY (ATTENDEE)

REGISTER TODAY (UTILITY)

MONONA TERRACE

Local Arrangements Committee

Name	Organization	Role	Email
Troy Larson	Strand	2024-2025 CSWEA President	*troy.larson@strand.com*
Cathy Wunderlich	Jacobs	2025 LAC Chair	*cathy.wunderlich@jacobs.com*
Steve Graziano	Jacobs	Technical Committee Chair	*steven.graziano@jacobs.com*
Cary Solberg	Milwaukee MSD	Speaker Search Chair	*csolberg@mmsd.com*
Eric Dundee	Madison MSD	Utility Rate Promotions Chair	*ericd@madsewer.org*
Tom Mulcahy	Mulcahy-Shaw Water	Exhibits Chair	*tmulcahy@mulcahyshaw.com*
Autumn Fisher	Donohue	Silent Auction Chair	*afisher@donohue-associates.com*
Jon Butt	Mead & Hunt	Sponsorship Chair	*jon.butt@meadhunt.com*
Glenn Tranowski	Strand	5k Run/Walk Chair	*glenn.tranowski@strand.com*
Rachel Lee	LAI	Social Program Chair	*rlee@lai-ltd.com*
Eric Dundee	Madison MSD	Hotel Arrangement Chair	*ericd@madsewer.org*
Mary-Frances Klimek	Racine Wastewater Utility	Catering Chair	*maryfrances.klimek@cityofracine.org*
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Technical Program Committee

Name	Organization	Role	Email
Steve Graziano	Jacobs	Chair (WI)	*steven.graziano@jacobs.com*
McKala Kiessling	City of Oconomowoc	Committee Member (WI)	*mkiessling@oconomowoc-wi.gov*
Colin Fitzgerald	Jacobs	Committee Member (MN)	*colin.fitzgerald@jacobs.com*
Shanna Czeck	City of St. Cloud	Committee Member (MN)	*shanna.czeck@ci.stcloud.mn.us*
Chris Buckley	Jacobs	Committee Member (IL)	*chris.buckley@jacobs.com*
Brad Bennett	Urbana-Champaign Sanitary District	Committee Member (IL)	*bbennett@u-csd.com*

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Conference at a Glance

WEDNESDAY, MAY 28	ACTIVITY	LOCATION	ADDRESS
10:00 am-4:00 pm	Pre-Conference Workshop	Monona Terrace, Halls MNQR	1 John Nolen Drive, Madison, WI
10:00 am-3:00 pm	Golf Outing	Pleasant View Golf Course	1322 Pleasant View Road, Middleton, WI
12:30 pm-3:30 pm	Stormwater Tour	Epic Systems Headquarters	1979 Milky Way, Verona, WI
1:00 pm-3:00 pm	Plant Tour	Sun Prairie Wastewater Facility	3040 Bailey Road, Sun Prairie, WI
1:00 pm-3:30 pm	YP Service Project	Henry Vilas Zoo	702 South Randall Avenue, Madison, WI
6:00 pm-9:00 pm	Social Meet and Greet	Madison Public Library	201 West Mifflin Street, Madison, WI

THURSDAY, MAY 29	ACTIVITY	LOCATION	ROOM
6:30 am-7:45 am	Jim Shaw Memorial 5k Run/Walk	Lake Monona Bike Path	
8:00 am-8:45 am	Opening Session and Keynote	Monona Terrace	Grand Terrace
9:00 am-6:00 pm	Exhibits	Monona Terrace	Ballroom ABCD
9:00 am-10:00 am	Technical Sessions	Monona Terrace	Hall of Ideas EFGHIJ
10:00 am-11:00 am	Morning Break/Poster Sessions I	Monona Terrace	Capital Promenade
11:00 am-12:00 pm	Technical Sessions	Monona Terrace	Hall of Ideas EFGHIJ
12:00 pm-1:00 pm	Exhibitor Lunch	Monona Terrace	Ballroom ABCD
1:00 pm-2:00 pm	Technical Sessions	Monona Terrace	Hall of Ideas EFGHIJ
2:00 pm-2:30 pm	Break/Poster Sessions II	Monona Terrace	Capital Promenade
2:30 pm-3:30 pm	Technical Sessions	Monona Terrace	Hall of Ideas EFGHIJ
3:30 pm-3:45 pm	7S Meeting	Monona Terrace	Hall of Ideas EH
3:45 pm-4:00 pm	Golden Manhole Society	Monona Terrace	Hall of Ideas FI
4:00 pm-4:30 pm	YP/New Member Meeting	Monona Terrace	Hall of Ideas G
4:00 pm-6:00 pm	Exhibitor Reception	Monona Terrace	Ballroom ABCD
6:30 pm-7:00 pm	Awards Reception	Monona Terrace	Grand Terrace
7:00 pm-9:00 pm	Annual Awards Event	Monona Terrace	Grand Terrace

FRIDAY, MAY 30	ACTIVITY	LOCATION	ROOM
7:00 am-8:00 am	State Section Breakfasts	Monona Terrace	Meeting Rooms M-R
8:00 am-8:45 am	Annual Association Business Meeting	Monona Terrace	Meeting Rooms M-R
9:00 am-12:00 pm	Exhibits	Monona Terrace	Ballroom ABCD
9:00 am-10:00 am	Technical Sessions/Operators Track	Monona Terrace	Hall of Ideas EFGHIJ
10:00 am-11:00 am	Morning Break	Monona Terrace	Hall of Ideas
11:00 am	Silent Auction Bids Due	Monona Terrace	Ballroom ABCD
11:00 am-12:00 am	Technical Sessions/Operators Track	Monona Terrace	Hall of Ideas EFGHIJ
12:00 pm-1:30 pm	Annual Association Meeting and Luncheon	Monona Terrace	Grand Terrace
1:30 pm-3:30 pm	Technical Sessions/Ethics	Monona Terrace	Hall of Ideas EFGHIJ

REGISTRATION HOURS	DATE	LOCATION
10:00 am-4:30 pm	Wednesday, May 28	Monona Terrace
6:00 pm-9:00 pm	Wednesday, May 28	Madison Public Library
8:00 am-5:00 pm	Thursday, May 29	Monona Terrace
8:00 am-4:00 pm	Friday, May 30	Monona Terrace

EXHIBIT HALL	DATE	
2:00 pm-6:00 pm	Wednesday, May 28	Exhibitor Set-Up
6:00 am-9:00 am	Thursday, May 29	Exhibitor Set-Up
9:00 am-6:00 pm	Thursday, May 29	Exhibit Hall Open
9:00 am-12:00 pm	Friday, May 30	Exhibit Hall Open
12:00 pm-3:00 pm	Friday, May 30	Exhibitor Move Out

PRE-CONFERENCE WORKSHOP

Advancing Nutrient Trading within the Circular Water Economy

Wednesday, May 28 | 10:00 am-4:00 pm | Monona Terrace, Halls MNQR

$30 with Annual Meeting Registration | $50 for Workshop Only | Limited Space

CO-HOSTED BY

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In response to the challenges posed by nutrient pollution, some states have implemented water quality trading programs. These programs allow regulated entities to buy offsets for permit compliance. Generally, these programs will remove more nutrients from watersheds as a whole than what is required in effluent limits.

Wisconsin and Iowa have been at the forefront of water quality trading in the Midwest. These programs have focused on reducing nutrient pollution in the Mississippi River Basin. By creating a market for pollution credits, these states have encouraged innovative and cost-effective solutions to water quality problems.

Wisconsin's Nutrient Trading Program: This program allows point source dischargers to buy and sell nutrient credits, which can be generated through various measures, including advanced wastewater treatment technologies, agricultural best management practices, and wetland restoration.

Iowa's Nutrient Reduction Strategy: Iowa has implemented a comprehensive strategy to reduce nutrient pollution, including a nutrient trading program that allows farmers to generate and sell nutrient reduction credits.

Now Illinois is beginning a water quality trading program. This new approach offers WWTP's Nutrient Reduction Offset Credits for

reducing nutrient pollution through the implementation of landscape best management practices. These credits can be used to offset future nutrient discharge limits in its NPDES permits. This creates a partnership between the Districts and area farmers and landowners, and promotes early adoption by including a "nutrient bank" for use in future permit years.

Join us for a dynamic workshop focused on nutrient trading, addressing agricultural nutrient management through the circular water economy. Nutrient trading is a market-based approach to reduce nutrients in water bodies by allowing wastewater treatment plants to obtain nutrient reduction credits from farmers and landowners. This system enables entities that can reduce pollutants at lower costs to sell credits to those facing higher reduction costs (EPA).

This event will highlight challenges around nutrient reduction within the framework of the *Clean Water Act* and existing nutrient trading programs, foster a better understanding of the challenges of farmers, and begin conversations around concrete solutions to the existing problems. Experts from IL, WI, and other states in the Mississippi River basin will present their nutrient reduction strategies, offering insights into successful policies and practices.

We will examine the science and effectiveness of this approach, implementation in three States, and provide opportunity to take immediate action towards setting up your own opportunities. The watershed approach to water quality management has proven to be a valuable tool in addressing complex environmental challenges. As we continue to face increasing pressures on our water resources, it is essential to adopt a holistic perspective that considers the interconnectedness of our waterways.

This workshop offers unique opportunities for wastewater treatment plant representatives, industry, farmers, landowners and regulators to collaborate and explore actionable solutions for water quality issues.

Workshop Goals

1. Identify concrete lessons in nutrient trading you can implement in your operation.
2. Create multiple connections to follow up on implementation of a watershed-focused program.
3. Help determine opportunities for national water quality efforts.

AGENDA

10:00 am-11:00 am
Molecular Circularity and the Gulf of Hypoxia

- 10:00 am-10:30 am | Molecular Circularity
  Chemical composition/description of water, nitrogen, phosphorus –
  1. Wastewater treatment system
  2. Cyanobacteria plant growth – harmful algae blooms.
  University of Wisconsin-Madison
- 10:30 am-11:00 am | Gulf of Hypoxia
  The second largest zone of coastal hypoxia (oxygen-depleted waters) in the world is found on the Northern Gulf of Mexico, adjacent to the outflows of the Mississippi and Atchafalaya Rivers. The zone is set to increase by 5%. (ResearchGate).
  Upper Mississippi River Basin Association (UMBRA)

11:00 am-12:00 pm
Mississippi River Basin Perspectives

- 11:00 am-11:45 am | Panel Discussion with Local Representatives
  Wisconsin Department of Natural Resources
  Northern Moraine WRD
  Other Speakers TBA
- 11:45 am-12:00 pm | Q&A with the Audience

12:00 pm-1:00 pm
Lunch Spotlight:
Walton Family Foundation

1:00 pm-2:00 pm
Circular Water and Existing Solutions

- 1:00 pm-1:10 pm | Overview of circular water economy as the framework aimed at improving water sustainability – closing water loops by reducing waste, reusing water, and optimizing nutrient cycles.
  Water Environment Federation
- 1:10 pm-1:45 pm | Panel Discussion:
  A Look at Biosolids, Watersheds, Public-Private-Partnerships
  Milwaukee Metropolitan Sewerage District
  Other speakers TBA
- 1:45 pm-2:00 pm | Q&A with the Audience

2:00 pm-2:15 pm | Coffee Break

2:15 pm-3:45 pm | Pathway Dialogues

- 2:15 pm-2:45 pm | Rapid Exchanges | 6 minutes each
  Iowa Department of Natural Resources
  Wisconsin Department of Natural Resource
  Other speakers TBA
- 2:45 pm-3:45 pm| World Cafe (Report-Out)
  Round-table discussions with reports of the talks.

3:45 pm-4:00 pm Closing and Next Steps

Conference Highlights

Wednesday, May 28

GOLF OUTING

Pleasant View Golf Course | 10:00 am to 3:00 pm
1322 Pleasant View Road, Middleton, WI 53562

Situated on hills approximately 300 feet above Lake Mendota, Pleasant View Golf Course provides a panoramic view of the City of Madison, WI. The course offers 27 holes of well-maintained, championship golf, a nine hole, scenic par 3 course, and an outstanding practice range. The course was awarded the Gold in *Madison Magazine's* Best of Golf Courses for 2018, 2019, and 2020.

For corporate sponsorship opportunities or for outing details, contact Mel Butcher, Golf Outing Coordinator, at *mbutcher@carollo.com*.

STORMWATER TOUR

Epic Systems Headquarters | 12:30 pm to 3:30 pm
1979 Milky Way, Verona, WI 53593
Bus transportation provided

Itinerary:
12:15 pm: Check-in at Monona Terrace
12:30 pm: Bus departs from Monona Terrace
1:00 pm to 3:00 pm: Tour of Epic Campus
3:30 pm: Bus drops off attendees at Monona Terrace

Epic's campus in Verona, WI covers 1,670 acres, including 89 buildings, a working farm, and utility systems to support operations. Like their software products, Epic's campus focuses on quality, reliability, and innovation, including green roofs, solar power, geothermal systems, and more. Several individuals from Epic's facilities team will lead a tour that will be a combination of walking and bus travel to view various points of interest around Epic's campus. Tour highlights may include the following: design and operation of multi-use stormwater ponds, infiltration practices, and 40+ acres of green roofs, operation of wastewater conveyance systems including a lift station that serves an 11,400-seat auditorium and greasy waste tanks that manage waste from the seven on-campus eateries that serve 10,000+ meals per day, and much more!

Transportation is included in the tour sign-up. Please do not arrange for private transport so we can efficiently coordinate the tour logistics while on Epic's campus. The tour bus will begin at and return to the Monona Terrace upon conclusion.

PLANT TOUR

Sun Prairie Wastewater Facility | 1:00 pm to 3:00 pm
3040 Bailey Road, Sun Prairie, WI 53590

The Sun Prairie Wastewater Treatment Facility serves the community of Sun Prairie, one of the fastest growing communities in Wisconsin with a current population at 39,419. The facility meets strict effluent permit limits utilizing BNR activated sludge and anaerobic digestion. The facility treats approximately 4 million gallons of water, produces 90,000 cubic feet of gas, and generates 13 cubic yards of biosolids daily. The facility was originally constructed in 1982 with upgrades in 2002, 2005, and 2022. The most recent upgrade added new horizontal dry pit submersible influent pumps, an additional fine screen and wash press, additional primary clarifiers, primary gravity thickener/fermenter, additional secondary clarifiers, and cloth disc filters. The facility is currently in the design phase for a 2025 upgrade that will address biosolids handling. The future solids handling facility will feature a pre-digestion Class A biosolids process, an ELODE dewatering device, a solar dryer with in floor heat, and pelletizing of the material.

After the tour, attendees can gather at the downtown Great Dane Pub & Brewing Company. No shuttle bus will be arranged. Attendees will need to drive or carpool.

YP SERVICE PROJECT

Henry Vilas Zoo | 1:00 pm to 3:30 pm
702 South Randall Avenue, Madison, WI 53715

Come spend the afternoon at the Henry Vilas Zoo and work alongside other CSWEA volunteers! The Henry Vilas Zoo is one of the few free Zoos across the country with staff and supporters dedicated to conserving and protecting the wonders of the natural living world. The Vilas family donated the land on which the Zoo stands in 1904 and is named after the Vilas' son, Henry, who passed away at a young age. The family stipulated the park be free to the public and has been enjoyed by Madison locals and tourists alike for over 100 years. We will be working with the Zoo's horticulturist and help with planting, weeding, mulching, and other tasks for the day.

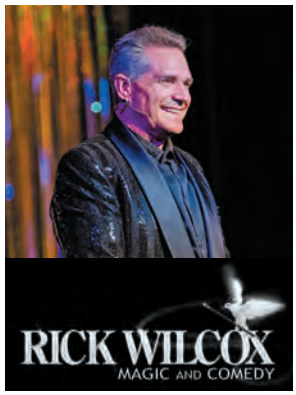
Materials and tools will be provided. Be sure to wear closed toe shoes and clothing appropriate for outdoor work. Bring a reusable water bottle to fill. For more information about this year's project, contact Rahim Ansari at *ransari@msa-ps.com*.

Conference Highlights

Wednesday, May 28

SOCIAL MEET AND GREET

Madison Public Library | 6:00 pm to 9:00 pm
201 West Mifflin Street, Madison, WI



Don't miss the pre-conference social of the year! Kick off the conference with an unforgettable evening of magic, mingling, and merriment! Join your fellow CSWEA members and exhibitors at the stunning Madison Public Library Central Library for a night of entertainment, delicious bites, and great company.

Be prepared to be dazzled as top-rated performers, Rick and Susan Wilcox, deliver captivating magical performances throughout the evening – this is a show you won't want to miss!

Enjoy heavy appetizers, refreshing drinks, and the chance to connect with old friends and new colleagues before the conference officially begins.

Mark your calendars and get ready for a magical night!

Thursday, May 29

JIM SHAW MEMORIAL 5K RUN/WALK

Lake Monona Bike Path | 6:30 to 7:45 am

Participants are asked to meet at the starting line for 6:30 am start. Directions will be provided at registration and via email.

OPENING SESSION AND KEYNOTE

Monona Terrace Grand Terrace | 8:00 to 8:45 am

We are excited to welcome Kyle Dreyfuss-Wells, Chief Executive Officer of the Northeast Ohio Regional Sewer District, as our Keynote Speaker this year. Overseeing the operation of one of the largest clean-water agencies in Ohio treating more than 75 billion gallons of water every year and providing sanitary and stormwater management services to Cleveland and 62 suburban communities across 363 square miles of the Lake Erie watershed, Kyle has an enlightening perspective related to the challenges and opportunities of balancing infrastructure needs, regulation, customers, funding, climate change and resiliency in the clean-water cycle.

Every utility has an origin story. A decision made, a problem faced, challenges perhaps unique to a region, but more common when seen through a wider lens. Kyle will connect Northeast Ohio's clean-water history with the realities of the broader Midwest, exploring the intersection of land use and water quality, the importance of water infrastructure to sustainable built spaces, and how her utility's renowned stormwater management and combined sewer overflow control efforts are accounting for the real impacts of wetter, warmer, wilder weather – all while engaging customers and a workforce for the long haul.

TECHNICAL SESSIONS

Monona Terrace Hall of Ideas EFGHIJ | 9:00 am to 12:00 pm, 1:00 pm to 3:30 pm

There will be five concurrent half-hour sessions in the morning, and then in the afternoon on Thursday. Sessions A, B, C, D and E will be from 9:00 am to 12:00 pm, with one hour break at 10:00 am.

There will be five afternoon concurrent half-hour sessions F, G, H, I and J will be from 1:00 pm to 3:30 pm, with a half-hour break at 2:00 pm. For more information, please see the Technical Program.

EXHIBITS

Monona Terrace Ballroom | 9:00 am to 6:00 pm

Exhibits showcasing the latest technology in wastewater, collection systems, treatment and many related items will be on display. Be sure to visit our fine exhibitors and thank them for their support of our association.

EXHIBITOR LUNCH

Monona Terrace Ballroom | 12:00 to 1:00 pm

The Exhibitor Lunch offers exhibitors and conference attendees to meet in a relaxing and social environment. Visit the Monona Terrace Ballroom to take part in this exciting chance to mingle.

POSTER SESSIONS

Monona Terrace Capital Promenade | 10:00 am to 11:00 am, 2:00 pm to 2:30 pm

Posters will be on display in the Hall of Ideas twice on Thursday. Presenters will be available at their posters at this time to discuss their posters and answer questions. Please stop and visit to learn more.

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Conference Highlights

Thursday, May 29

EXHIBITOR RECEPTION
Monona Terrace Ballroom | 4:00 pm to 6:00 pm

Light snacks and refreshments will be provided in the ballroom. Share some refreshments and visit with our exhibitors, and thank them for attending this year's Annual Meeting.

CSWEA ANNUAL AWARDS EVENT
Monona Terrace Grand Terrace | 7:00 pm to 9:00 pm

6:30 to 7:00 pm – Awards Reception
Connect with friends and enjoy refreshments before the Awards Banquet.

7:00 to 9:00 pm – Awards Presentations
Hear updates about CSWEA activities from the outgoing president, the vision for the year ahead from our incoming president and honor this year's award winners for the many WEF and SWEA Awards presented to the very best of our industry.

The Annual CSWEA Awards Event is a ticketed event and includes a meal. Please remember to purchase a ticket and bring the ticket to the event.

Friday, May 30

STATE SECTION BREAKFASTS AND MEETINGS
Monona Terrace Meeting Rooms K-R | 7:00 am to 8:00 am

Please attend your respective State Section's breakfast and business meeting to be updated on the activities of the section and its committees. Don't miss this opportunity to get involved and find out where you can help your section. This is a ticketed event and includes a meal. Please remember to purchase and bring your ticket with you!

CSWEA ANNUAL BUSINESS MEETING
Monona Terrace Meeting Rooms K-R | 8:00 am to 8:45 am

The Association Business Meeting will include reports from the Association Committees and Sections and the annual election of officers. We encourage everyone to attend and learn about our association's activities.

EXHIBITS
Monona Terrace Ballroom | 9:00 to 12:00 pm

Exhibits showcasing the latest technology in wastewater, collection systems, treatment and many related items will be on display. Be sure to visit our fine exhibitors and thank them for their support of our association.

TECHNICAL SESSIONS
Monona Terrace Hall of Ideas EFGHIJ|
9:00 to 10:00 am, 10:30 to 11:30 am, 1:30 to 3:30 pm

There will be four concurrent half-hour sessions in the morning, and then in the afternoon on Wednesday. Sessions K, L, M, and N will be from 9:00 am to 12:00 am, with half-hour break at 10:00 am.

There will be four afternoon concurrent half-hour sessions. Sessions P, Q, R, and S will be from 1:00 pm to 3:30 pm, with no break. For more information, please see the Technical Program.

ANNUAL CSWEA ASSOCIATION MEETING AND LUNCHEON
Monona Terrace Grand Terrace | 12:00 pm to 1:30 pm

Hear from our President and WEF Visitor as they present a summary of activities and initiatives of the organizations. We will recognize our Operations Challenge teams for their performance at WEFTEC and our newest inductees to the Golden Manhole Society and the 7S will be announced and honored. This is a ticketed event and includes a meal. Please remember to purchase and bring your ticket with you.

SILENT AUCTION
Exhibit Hall

GLOBAL WATER STEWARDSHIP

Global Water Stewardship (GWS) is dedicated to addressing sanitation challenges in developing countries by educating communities and creating sustainable solutions to protect waterways and promote public health. GWS operates entirely through volunteer efforts and relies on donor support. CSWEA recognizes the critical impact of GWS' work and contributes to its mission through proceeds from the Silent Auction held at the Annual Meeting.

Exhibitor's auction item donations, benefiting GWS, will be showcased in the Exhibit Hall. Join this vital social and humanitarian initiative by contributing auction items or placing bids to support clean water solutions worldwide.

Contact Autumn Fisher at *afisher@donohue-associates.com* for more information. Bids will be posted at 11:15 am in the registration area.

Technical Program

THURSDAY, MAY 29

Session	A	B	C	D	E
	WATERSHED MANAGEMENT	**DISINFECTION**	**ARTIFICIAL INTELLIGENCE AND DIGITAL SOLUTIONS**	**OPTIMIZATION**	**COLLECTION SYSTEMS AND CONVEYANCE**
Moderator	**McKala Kiessling**	**Shanna Czeck**	**Colin Fitzgerald**	**Chris Buckley**	**Brad Bennett**
8:00 am-9:00 am	**Keynote Speaker: Kyle Dreyfuss Wells**				
9:00 am-9:30 am	Why Extreme Rainfall Events Appear to Happen Much More Often than Expected **Nathan Zick**	Let There Be Light! Constructing and Commissioning a Multi-Phase UV Disinfection Replacement on Lake Michigan **Matthew Sokolowski**	Maximizing Efficiency and Augmentic Operational Decision-Making: A Case Study of Hybrid Modeling at Fond Du Lac Wastewater Treatment and Water Resource Recovery Facility **Aryan Emaminejad**	Designing to Low DO: Full-Scale Implementation of Suboxic Biological Nutrient Removal **Natalie Beach**	Regional I/I Reduction Program Cost-Effectiveness Evaluation: A Madison, WI Case Study **Jennifer Hurlebaus**
9:30 am-10:00 am	Identify, Prioritize, and Build: A GSI Program from Concept to Execution **Olivia Sims**	Teaching an Old Dog New Tricks: Troubleshooting and Optimizing Chlorine Disinfection Systems **Arun Mande**	Enhancing Flood Resilience Using AI and Digital Tools **Cristina Popa**	Low DO Operation for Biological Nutrient Removal and Densification at Green Bay **Gretchen Gutenberger**	Getting to the ROOT of the Problem... an Asset Management Plan in Action **Amanda Leipard**
10:00 am-11:00 am	**Break/Poster Session I**				
11:00 am-11:30 am	Nutrient Reduction Strategies for the Rock River Watershed: A Collaborative Approach to Tackling Phosphorus Pollution **Karoline Qasem and Jeff Reininger**	PAA Pilot Study Provided Invaluable Data and Operational Experience for the Fox Metro Water Reclamation District **Michael Ott**	O&M Centered Digital Support Tools **John Rickermann**	How Are We DOing? A Comparison of SSWRF's New and Existing Aeration Systems Operating During Construction **Matthew Sokolowski**	The MCES Minneapolis Interceptor Study: Using Tools and Data to Prioritize System Improvements and Minimize Risk **Walter Atkins**
11:30 am-12:00 pm	Watershed Approaches to Achieving Regulatory Compliance for Nutrient Removal: Illinois Crosses the Rubicon **Mohammed Haque and Bartlett Durand**	Pioneering Potable Reuse in Tennessee: Unveiling the State's Inaugural Water Reuse Pilot **Emily Evans**	Out With the Old, in With the New: A Systematic Approach to System-Wide PLC Renewal **Brendan Wolohan**	Decarbonization of Biological Nutrient Removal **Leon Downing**	Digital Tools Streamlining Collection System Operations and Management **Jennifer Baldwin**
12:00 pm-1:00 pm	**Lunch**				
Session	**F**	**G**	**H**	**I**	**J**
	MANAGEMENT	**BIOSOLIDS**	**SAFETY**	**INTENSIFICATION**	**COLLECTION SYSTEMS AND CONVEYANCE**
Moderator	**Shanna Czeck**	**Chris Buckley**	**Steve Graziano**	**Brad Bennett**	**Colin Fitzgerald**
1:00 pm-1:30 pm	Leading in the Age of "Be Ready for Anything, Anytime" Panel Discussion **Rick Warner, Thomas Sigmund, Shannon Spurlock, Cory Williams**	Streamlining Digester Improvements: Lessons Learned from Design and CMAR **Sheamus Togher**	Safety Fundamentals for Wastewater Treatment Plants **Robert Evangelisti**	Like Rome, Wet Weather Treatment Capacity Can't Be Built in a Day – But Improved Settleability Can Shift the Paradigm Quickly, Allowing the Colosseum to Wait **Ken Kamper**	Protecting a Park Using CIPP and CIPMH Rehabilitation **Lexi Duve**
1:30 pm-2:00 pm		When the Landfill Says No More Sludge: ELODE May Be the Answer **Terry Boyer**	Deadly Digesters and Bad Biogas: Safety from Hard Lessons-Learned **Matthew Williams**	Nanobubble Technology: A Novel Approach to Wastewater Treatment Intensification and Enhanced Nutrient Removal **Andrea White**	MMSD Edgewood Avenue Near Surface Collector **Jon Meyer and Matthew Bednarski**
2:00 pm-2:30 pm	**Break/Poster Session II**				
	PUBLIC POLICY	**BIOSOLIDS**	**PFAS**	**R&D AND NOVEL APPROACHES**	**NUTRIENTS**
2:30 pm-3:00 pm	Tips and Tricks for Federal Funding **Emily Platt**	Biosolids Regionalization: Better When We're Together **Adam Parmenter**	Wet Weather Sampling of Urban Waterways for a PFAS Treatment Pilot **Daniel Stockard**	Pilot Testing and Implementation of ANITA™ Mox at UCSD NEP **Terry Boyer**	Heart of the Valley Effluent Filtration **Christine Wood**
3:00 pm-3:30 pm	Wastewater-Based Surveillance for Monitoring the Circulation of Respiratory and Enteric Diseases in Wisconsin **Adelaide Roguet**	D.O.G.E. Biosolids **Eric Lynne**	Seven Habits of Highly Effective PFAS Source-Trackers **Michelle Young**	Cloth Media Filter in Series for Phosphorus Removal: Pilot Test Study **Joseph Martirano**	Put the Lime in the Blended Sludge and Shake It All Up: Centrate P Removal Improves Secondary Performance **Colin Fitzgerald**

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Technical Program

FRIDAY, MAY 30, 2025

Session	K	L	M	N	O
	PFAS	**R&D AND NOVEL APPROACHES**	**NUTRIENTS**	**OPERATIONS**	**COLLECTION SYSTEMS AND CONVEYANCE**
Moderator	**Steve Graziano**	**McKala Kiessling**	**Colin Fitzgerald**	**Chris Buckley**	**Shanna Czeck**
8:00 am-9:00 am	**Annual Member Association Business Meetings**				
9:00 am-9:30 am	PFAS Data Guidelines and Implications to Fate through Thermal Processes **Lloyd Winchell**	Intensifying Research and Innovation for a Resilient and Sustainable Future **David Diehl**	Planning and Implementation of Low-Level Phosphorus Treatment **Troy Larson**	Benefits of Using Microscopes to Aid in Wastewater Operations with Case Study **Adib Amini and NEW Water Operations Staff**	Illinois Utilities Conquer Resiliency Challenges Using Sewer-Monitoring Technology and Real-Time Data **Megan Livak**
9:30 am-10:00 am	Novel Wastewater Treatment Process for PFAS Removal **Paul Rodriguez**	Innovative Applications of Pile Cloth Media Filtration: Primary Filtration, Dual-Use and Tri-Mode Wet Weather Treatment for Wastewater Challenges **Vedansh Gupta**	Flexible BNR Design to Meet Current and Future Facility Needs **Don Esping**		Pressure Pipe Condition Assessment: Force Main Focus **Michelle Carter**
10:00 am-11:00 am	**Break**				
11:00 am-11:30 am	PFAS Reduction in Landfill Leachate and Biosolids **Patrick McNamara**	Microaeration Part II: The Impact of Sulfur Transformations **Matt Seib**	Flexibility in Biological Phosphorus Removal System Design: Case Studies **Nick Bartolerio**	What We Learned at WEFTEC and Beyond: Panel Discussion **CSWEA Operations Team**	Expanding a Pump Station in the Floodway **Adam Ross**
11:30 am-12:00 pm	PFAS Assessment of a Rotary Drum Dryer **John Ross**	Secondary Treatment Intensification: MOB Process Trial to Enhance Capacity and Improve Sludge Settleability at Winona, MN WWTP **Erik Anderson**	Nitrate: The Next Chapter in Nutrient Regulations **Abram Peterson**		Trend Setters: A Wastewater Pump Station and Its Surge Tank **Robert Walton**
12:00 pm-1:00 pm	**Association Meeting and Luncheon**				

Session	O	P	Q	R
	R2E	**ENGINEERING ETHICS**	**CAREER AND PERSONAL DEVELOPMENT**	**COMMISSIONING AND STARTUP**
Moderator	**Matt Magruder**	**Cary Solberg Jessica Mederson**	**Rahim Ansari**	**Brad Bennett**
1:00 pm-1:30 pm	Navigating the D3/D5 Split: Renewable Natural Gas and Co-Digestion **Eider Alvarez Puras**	Engineering Ethics and Resiliency in the Built Environment	Bridging The Gap Between Young and Seasoned Professionals **Natalie Cook Elizabeth Heise Mike Piller**	Screenless IFAS System Eliminates Media Loss and Reduces O&M Costs for the City of Peterborough **Lauren Takitch**
1:30 pm-2:00 pm	Developing GHG Inventory Tools for Water and Wastewater Treatment Facilities: A Utility's Effort to Quantify and Reduce GHG Emissions **George Kontos**			SCWO for Orlando: A Case Study on Commissioning Supercritical Water Oxidation for the Elimination of PFAS in Biosolids and Reduced Reliance on Biosolids Land Application **David Garb**
No Break				
	R2E	**ENGINEERING ETHICS**	**CAREER AND PERSONAL DEVELOPMENT**	**COMMISSIONING AND STARTUP**
2:00 pm-2:30 pm	Recovering Nutrients... and Trust! A Case Study in Communication Strategies for Biosolids **Katelyn Skornia**	Engineering Ethics and Resiliency in the Built Environment	Essential Skills for Success: Team Development, Leadership, and Productivity **Liz Kramer Quentin Hahn**	Formation of Granular Sludge with Low Strength Wastewater **Brett Quimby**
2:30 pm-3:00 pm	Two Birds, One Test: Off-Gas Testing for Assessing Aeration Efficiency and Microbial N2O Stress Insights **Michelle Young**			Start from Scratch: Construction through Startup for a 0.35 MGD Greenfield Municipal Facility **Natalie Cook**

Presenters

KEYNOTE PRESENTER

Wednesday May 28 | 8:00 am

KYLE DREYFUSS WELLS

Kyle Dreyfuss Wells is the Chief Executive Officer of the Northeast Ohio Regional Sewer District. Northeast Ohio Regional Sewer District is a regional entity providing sanitary and stormwater management services to Cleveland and 62 suburban communities in Northeast Ohio. As CEO, Ms. Dreyfuss-Wells oversees one of the largest clean water agencies in Ohio, a district that treats 90 billion gallons of water every year, thanks to the work of more than 750 employees. She works closely with seven trustees and eleven directors managing hundreds of miles of sewer and stream networks, a multi-billion dollar 25-year Project Clean Lake program, and a regional wet-weather strategy for the health of Lake Erie and more than one million residents. Ms. Dreyfuss-Wells was formerly Deputy Director of the District's Watershed Programs, including the Regional Stormwater Management Program and the applica9on of stormwater control measures to reduce combined sewer overflows through green infrastructure. Ms. Dreyfuss-Wells graduated summa cum laude from Ohio State University with a Bachelor of Science degree in biology. She earned master's degrees with honors in both public affairs and environmental science at Indiana University's School of Public and Environmental Affairs and volunteered in Samoa for the Peace Corps.

SPECIAL GUEST

COREY WILLIAMS, WEF TRUSTEE

Corey Williams is a member of WEF's 2024-2025 Board of Trustees. Williams currently serves as President and CEO of SmartCover Systems, the innovation leader for intelligent, real-time sewer monitoring systems.

Water Environment Federation® the water quality people®

Equipped with a bachelor's degree in civil engineering from Kansas State University, Williams has been a WEF member for his more than 30-year career. He is the co-founder and moderator of both the Water and Wastewater CIO and CFO Forum, which aims to bring together innovative water and wastewater utility leaders and create a valuable space for knowledge transfer and networking. Williams has also authored more than 75 papers in IT, OT, IoT, and the smart water and innovation space for the water industry.

CAREER AND PERSONAL DEVELOPMENT TRACKS

Track 1
Career Focus: Bridging The Gap Between Young and Seasoned Professionals
Presenters: *Natalie Cook, Donohue & Associates; Elizabeth Heise, Trotter & Associates; and Mike Piller, Johnson County Wastewater*
Duration: 1 hour

Track 2
Essential Skills for Success: Team Development, Leadership, and Productivity
Presenters: *Liz Kramer, City of St. Cloud; and Quentin Hahn, Burns & McDonnell*
Duration: 1 hour

MODERATOR: RAHIM ANSARI, MSA PROFESSIONAL SERVICES

Rahim Ansari is a Wastewater Engineer at MSA Professional Services. He earned his bachelor's degree in civil and environmental engineering in 2021 and his master's degree in environmental engineering from the University Wisconsin – Madison 2024. Joining MSA in 2021, Rahim has assisted in the planning, design, and construction of wastewater treatment facilities and carries experience in activated modeling and design, biological and chemical phosphorus removal, pilot testing, lift station design, and biosolids planning, management, and design. Rahim has been the Chair of the WI Section Student and Professionals Committee since 2022 and is passionate about engaging the next generation of water industry leaders and environmental stewards. In his free time, Rahim enjoys playing and coaching tennis, Wisconsin's many rivers and streams.

NATALIE COOK, DONOHUE & ASSOCIATES

Natalie Cook is a Wastewater Process Engineer with Donohue & Associates. She has her Bachelors in Applied Mathematics and Masters in Environmental Engineering from the University of Wisconsin – Madison. Her work covers all inside the fence wastewater treatment plant design, but her favorite projects are in biological nutrient removal. She lives in Chicago, where she spends her free time eating, playing with her dog, and teaching and performing circus arts. Ask her about that last one, I dare you.

ELIZABETH HEISE, TROTTER & ASSOCIATES

Liz earned her bachelor's degree in Biological Engineering and master's degree in Environmental Engineering from the University of Illinois. Liz is a wastewater project manager with more than nine years of experience. Specializing in the design and implementation of sustainable wastewater treatment solutions, she has successfully led numerous projects in Northern Illinois. Within CSWEA, Liz has served as the Illinois Section YP Chair (2017-2019), the LAC Chair (2024), GWS Chair (2019-2023), and is currently serving as a CSWEA Delegate. Additionally, Liz is the current Students and Young Professionals Community Chair for WEF and is involved in the Municipal Resource Recovery and Design Community as the Design Subgroup Chair in the Nutrient Removal Group.

MIKE PILLER, JOHNSON COUNTY WASTEWATER

Mike serves as the Collections Program Manager for Johnson County Wastewater (JCW), bringing nine years of experience in wastewater collection system projects. He earned a technical degree in civil engineering from Lake Superior College in Duluth, MN, in 2014 and a bachelor's degree in management and project management from Park University in 2023. Passionate about enhancing utility coordination and public outreach, Mike leads JCW's Collection System Asset Management Program, overseeing municipal coordination projects, pipe and manhole rehabilitation, private I/I removal, emergency repairs, and more. An active member of Kansas WEA, he also plays a key role in WEF SYPC, currently serving as the 2nd Vice Chair. Originally from Superior, WI, Mike grew up in the heart of the Northland, where he developed a strong appreciation for infrastructure and community service. He is excited to be at CSWEA's 98th Annual Conference.

LIZ KRAMER, CITY OF ST. CLOUD

Liz Kramer currently serves as the Sustainability Coordinator for the City of Saint Cloud, MN. Liz started with the City in 2018 after graduating from Gustavus Adolphus College. Since then, she has assisted with creating and maintaining the City's Energy Fund Budget, tracking key performance indicators, analyzing data, and coordinating community sustainability projects, public education efforts, and grant applications and management. Liz is currently the Student and Young Professional Chair of CSWEA and serves on the CSWEA Executive Committee, as well as the MN Section Operations, Safety, and Laboratory Committee Chair.

QUENTIN HAHN, BURNS & MCDONNELL

Quentin Hahn, PE is an assistant project manager and chemical engineer focused on water and wastewater projects. He joined Burns & McDonnell after graduating with a bachelor's degree from Kansas State University in 2017. Since joining the water and wastewater industry, Quentin has worked on a variety of municipal and industrial projects, but he has substantial experience in wastewater reuse, hydraulic design, and specialty manufacturing wastewater treatment. Quentin has been involved with CSWEA for several years, serving as the Student and YP chair and on multiple local arrangements committees. He is currently the incoming vice-chair for CSWEA's Minnesota Section.

Presenters

OPERATIONS TRACK

Session 1
Benefits of Using Microscopes to Aid in Wastewater Operations
Presenters: *Adib Amini, PhD, PE, ENV SP, BCEE; and NEW Water Operations Staff*
Duration: 1 hour

This session will discuss how use of microscopes can benefit wastewater engineering and operations, simple methods one can use, examples of what wastewater samples look like, examples of bacteria that may be seen, and ways to begin use of this powerful tool. The session will be presented in conjunction with a case study at NEW Water (Green Bay, WI) – *Microscopy – The Good, Bad and Lessons Learned*, presented by NEW Water Operations Staff.

Session 2
What We Learned at WEFTEC and Beyond: The CSWEA Operations Team Discusses Bringing Value from Their Professional Organization Experiences to Their Daily Responsibilities
Presenters: *CSWEA Operations Team*
Duration: *1 hour*

This session will be a round table discussion led by the operations teams that will discuss how they use professional organization participation to network, learn and bring value to their employers. They will share practical thoughts regarding the start and optimization of processes and how professional networking benefited their facilities during capital improvement projects. This is a must-have conversation for anyone looking to increase their knowledge pertaining to operation of water reclamation facilities.

ETHICS TRACK

Engineering Ethics and Resiliency in the Built Environment
Presenters: *Jessica Mederson, Stafford Rosenbaum; and Cary Solberg, the Milwaukee Metropolitan Sewerage District (MMSD)*

JESSICA MEDERSON, STAFFORD ROSENBAUM

Jessica Mederson is a partner and member of the Board at Stafford Rosenbaum in Madison, Wisconsin. She litigates business matters in state and federal courts across the United States, focusing her practice on construction disputes, Wisconsin dealership disputes, UCC litigation, contract disputes, and employer-side employment litigation. She also advises corporate clients on contractual negotiation issues, addressing resiliency in the built environment in the face of climate change, and employment law issues. Jessica is admitted to practice in Wisconsin, Minnesota, Texas, and Florida as well as a number of federal courts across the Midwest and in Texas. She writes and presents nationally on addressing resiliency in construction projects and business operations. She also created and co-hosts a podcast, *Adapt: Climate Change and the Built Environment*, dedicated to discussing issues related to the built environment and its resiliency to climate change and extreme weather events.

CARY SOLBERG, THE MILWAUKEE METROPOLITAN SEWERAGE DISTRICT (MMSD)

Cary Solberg is an Engineering Section Manager at the Milwaukee Metropolitan Sewerage District (MMSD). He leads and supports a team of project managers focused on MMSD's water reclamation facilities, electrical systems, and instrumentation and control systems. The combined team project portfolio totals more than $800 million in active and planned improvements. 2025 will mark Cary's 30th year in the engineering profession.

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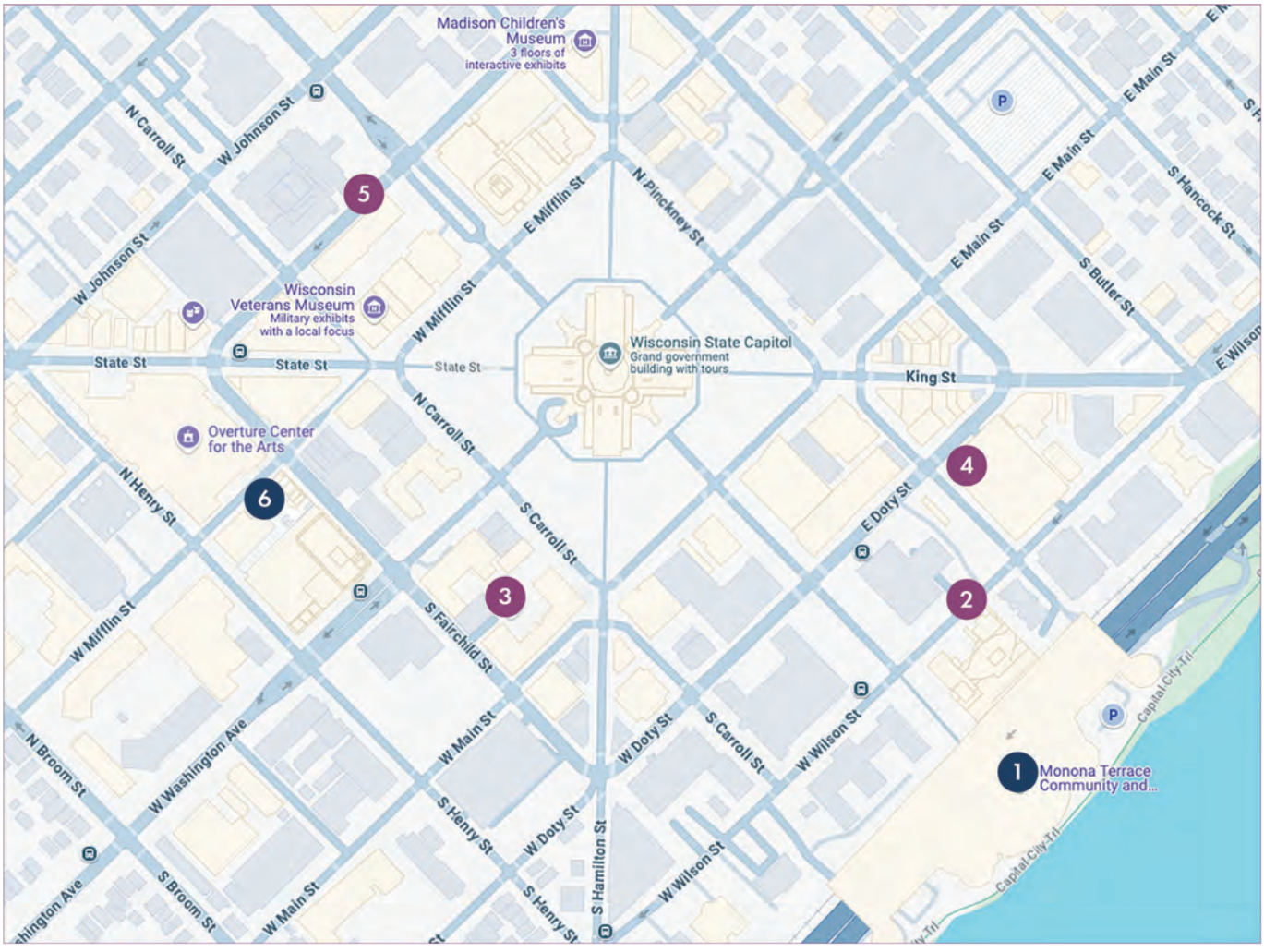
Map of Madison, Wisconsin

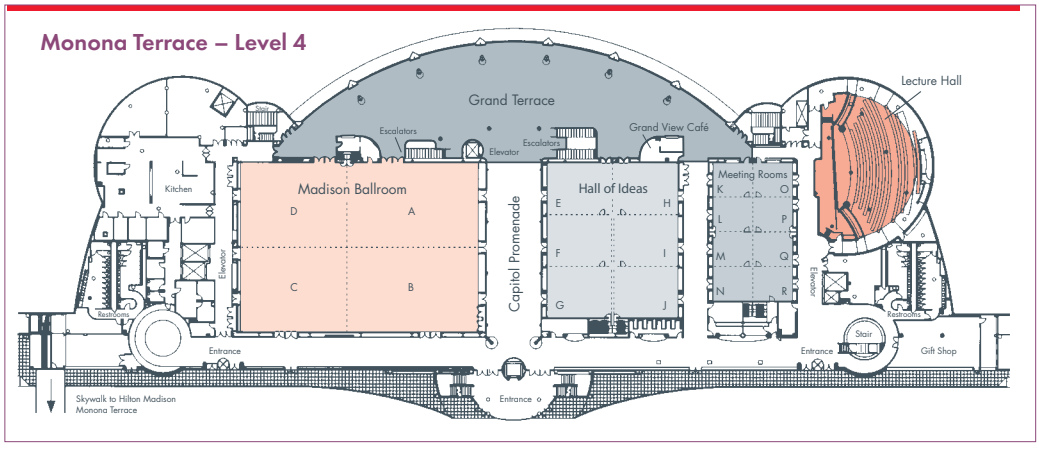


1. Monona Terrace Community and Convention Center
2. Hilton Madison Monona Terrace
3. Best Western Premier Park Hotel
4. Embassy Suites by Hilton Madison Downtown
5. The Madison Concourse Hotel and Governor's Club
6. Madison Public Library

Venue

MONONA TERRACE
1 John Nolen Drive,
Madison, WI 53703

The conference will be held at Monona Terrace in Madison, Wisconsin on May 28-30, 2025. The venue is a 250,000 square-foot, multi-level convention center. The venue is a mix of beautiful, curvy architecture that contrasts with the surrounding natural environment.



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Hotel Information

The Hilton Madison Monona Terrace is the recommended hotel for the 98th AnnualConference. Located on 9 East Wilson Street and connected to the Monona Terrace Community and Convention Center by Skywalk. The Hilton is offering a group rate for CSWEA at $159.00 per room.

Book online or call Hilton reservations at 800-445-8667 or call the hotel directly at 608-255-5100 and reference the group code: CSW.

Book Online

The Best Western Premier Park Hotel is on 22 South Carroll Street. Choose to stay in a traditional room (1-2 beds) for $179 plus tax per night, a deluxe room (1-2 beds) for $189 plus tax per night, or a king suite for $219 plus tax per night.

Book Online

The Embassy Suites by Hilton Madison are on 231 South Pinckney Street. Book a one king-sized bed, one-bedroom suite for $189.00 plus tax per night.

Book Online

The Madison Concourse Hotel and Governor's Club is located on 1 West Dayton Street, Madison, WI 53703. Rooms are $169.00 plus tax per night. . We expect that there will be great demand for these rooms, so please book early.

Book Online

We expect that there will be great demand for these rooms, so please book early.

Exhibit Hall

The Exhibit Hall will be open two days: Thursday and Friday, May 29-30, 2025. This year, there will be an Exhibitor Lunch from 12:00 pm-1:00 pm on Thursday in the Exploration Hall for those who wish to attend. As well, the conference provides longer breaks during the technical sessions with refreshments in the exhibit hall.

Exhibitor Lunch
12:00-1:00 pm
Thursday

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Badger State Inspection, LLC
Baxter & Woodman, Inc.
Berg-Johnson Associates Inc
Biorem Technologies Inc.
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COMPANY NAME
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Trotter and Associates, Inc.
USALCO, LLC
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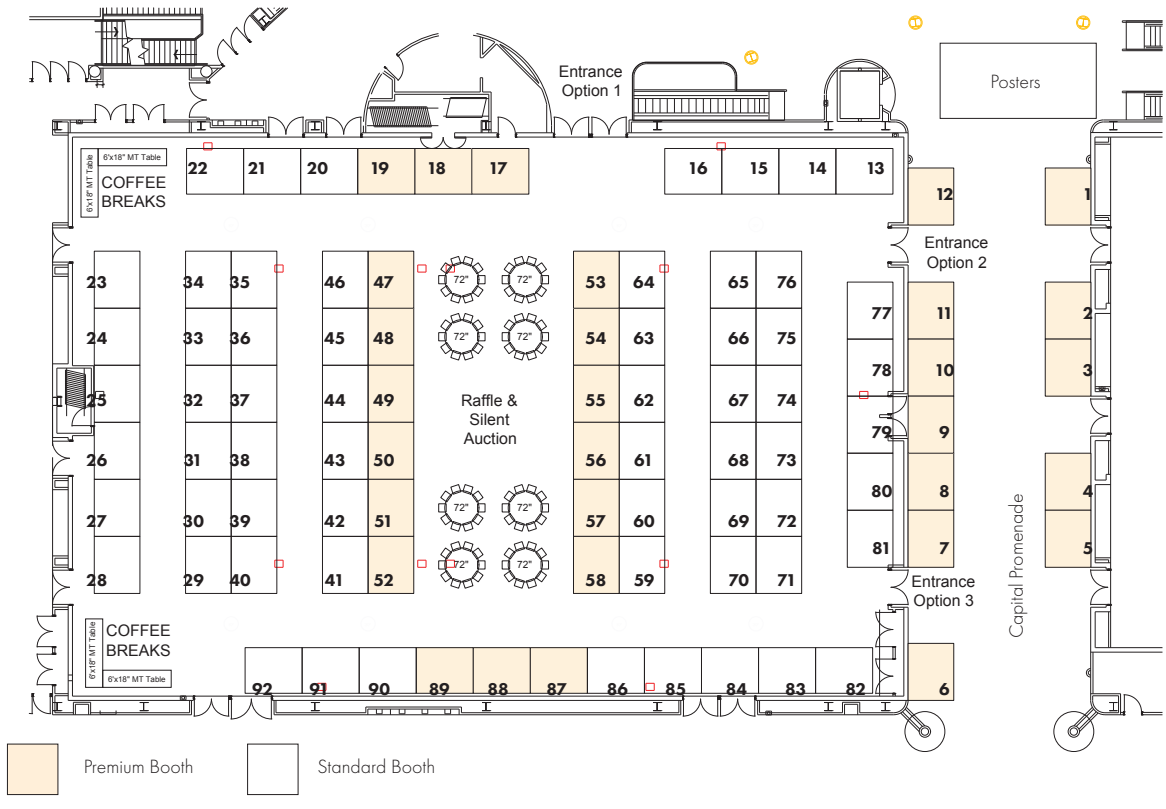
Visu Sewer, LLC.
WaterSurplus



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SSICON 2025
SEWAGE SLUDGE
INCINERATION CONFERENCE

JULY 29-30, 2025 AT THE UNION DEPOT IN ST. PAUL, MN

The sewage sludge incineration (SSI) industry continues to offer a reliable process for wastewater solids treatment. The industry has proved up to the challenges of recent regulatory changes while offering a potential solution for the current wastewater challenge, PFAS. To ensure reliable operation for the future its important for professionals operating, maintaining, designing, and optimizing these facilities to collaborate and establish lines of knowledge transfer.

This conference is focused to benefit the utilities who own and operate SSIs and will cover advanced topics on these facilities. The "classroom" portion of the conference agenda (Tuesday, July 29) has been tailored to address common questions raised by both fluid bed and multiple hearth-based SSI utilities on what it takes to keep facilities operating or transition to a new incineration technology. The "tour" day (Wednesday, July 30) offers attendees the opportunity to visit two different facilities that represent both the fluid bed and multiple hearth technologies primarily used in Canada and the US. Attend the conference to learn more about SSIs and perhaps more importantly make connections with utilities and other professionals serving these facilities!

Hyatt Place St. Paul (180 Kellogg Boulevard East) is offering a group rate for attendees of the conference if they book before June 30. Book a room by scanning the QR code on this page, or call 1-888-492-8847, press 1 for New Reservation, and mention the group rate code: G-CSRB.

Day	Time	Activity/Presentation	Presenter
July 29	9:00 am-9:15 am	Welcome/Intro	Lloyd Winchell, Brown and Caldwell
	9:15 am-9:45 am	General Refractory Repair	Sean Conlon, Industrial Furnace Co.
	9:45 am-10:15 am	MHI Utility O&M Experiences	TBD
	10:15 am-10:30 am	Open Discussion on Continuing MHI Operations	Facilitated Discussion
	10:30 am-10:45 am	Morning Break	
	10:45 am-11:15 am	NEW Water (Green Bay) MHI to FBI Transition	Aaron Eichhorst and Jake Becken, NEW Water
	11:15 am-11:45 am	Permitting and Procuring a Fourth FBI at Metro (St. Paul)	Stephen Norton, Metropolitan Council
	11:45 am-12:00 pm	Open Discussion on Permit Compliance	Facilitated Discussion
	12:00 pm-2:00 pm	Lunch	
	2:00 pm-2:15 pm	Ash Recycling	Persephone Ma, Brown and Caldwell
	2:15 pm-2:30 pm	Calculating "New" versus "Existing" Status	TBD
	2:30 pm-2:45 pm	PFAS Incineration Research Updates	Lloyd Winchell, Brown and Caldwell
	2:45 pm-3:30 pm	Cake Complications: Feeding and Chemistry	Nicholas Merchant-Wells, NEORSD
	3:30 pm-3:45 pm	Afternoon Break	
	3:45 pm-4:00 pm	Cladding MHI/FBI/Ducts	TBD
	4:00 pm-4:30 pm	Show and Tell (Case studies with Group Discussion)	Nicholas Merchant-Wells, NEORSD
	4:30 pm-4:45 pm	Future Research Needs?	Facilitated Discussion
	4:45 pm-5:00 pm	Wrap Up	
July 30	8:00 am-8:05 am	Welcome	
	8:05 am-9:00 am	Intro to Metropolitan Council, Metro FBIs, and Seneca MHIs	Metropolitan Council Operations Staff
	9:00 am-12:00 pm	Morning Tour	
	12:00 pm-1:00 pm	Lunch	
	1:00 pm-4:00 pm	Afternoon Tour	

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NUTRIENT TRADING

A Watershed Approach to Water Quality:

A New Tool for Communities

By Bartlett Durand, Chief Executive Officer
Nature's Registry, Subsidiary of the Applied Ecological Institute

The concept of a watershed as a functional unit for water quality management has gained significant traction in recent decades. This holistic approach recognizes that water bodies are interconnected, and that actions taken in one part of a watershed can have far-reaching consequences. It helps bridge the divide between the highly-regulated waste water industry (primary treatment of water with NPDES permits) and the lightly-regulated agricultural industry and greater landscape.

The Illinois EPA has just entered into a first of its kind agreement with the Northern Moraine Sewerage District to allow the district to meet its phosphorus reduction requirements by working it its watershed, through a trading program between the plant and farmers/landowners in the area. This approach provides flexibility in approach, the opportunity to stack funding, and a cultural shift in how communities consider water quality.

The *Clean Water Act*: A Powerful Tool, But Limited Reach

The *Clean Water Act* of 1972 is a landmark piece of environmental legislation that has significantly improved the quality of US waters. It established a national goal of eliminating pollutant discharges into navigable waters. However, the Act primarily regulates point source pollution, such as wastewater treatment plants and industrial facilities.

Nonpoint source pollution, which originates from diffuse sources like agricultural runoff and urban stormwater, is more challenging to regulate. While the *Clean Water Act* does provide some tools to address nonpoint source pollution, such as voluntary Section 319 funding, its effectiveness is often limited. This regulatory gap highlights the need for a comprehensive, watershed-based approach to water quality management.

The Gulf Hypoxia Task Force: A "Watershed" Moment

One of the strongest drivers to adopt a watershed approach in action is the Gulf Hypoxia Task Force. Formed in 1998, this interagency task force was established to address the growing problem of hypoxia, or oxygen depletion, in the Gulf of Mexico. Hypoxia occurs when excessive nutrient pollution, primarily nitrogen and phosphorus, fuels algal blooms. As these algae die and decompose, they consume oxygen in the water, creating hypoxic zones where marine life cannot survive.

The Mississippi River Basin, which drains 41% of the contiguous US, is the primary source of nutrient pollution to the Gulf of Mexico. The task force recognized that addressing this issue required a coordinated, watershed-scale approach involving multiple states, federal agencies, and stakeholders.

The Gulf Hypoxia Task Force: A Focus on Phosphorus

While both nitrogen and phosphorus contribute to hypoxia, the Gulf Hypoxia Task Force has placed a particular emphasis on phosphorus, which has found its way into NPDES permits and watershed planning. Scientists determined that phosphorus is often the limiting nutrient in many aquatic systems, meaning that it is the nutrient that is most likely to stimulate algal blooms when it is in excess.

In the Mississippi River Basin, agricultural runoff is a significant source of phosphorus pollution. At the same time, phosphorus is a critical element for life, essential for human nutrition and growth – as well as for plant growth (which then fuel the body's need for phosphorus). However, the phosphorus cycling from fertilizer to plant to human to waste (and potentially back into the soil as fertilizer) is out of balance. Agricultural practices like fertilizer application, manure management, and especially soil erosion can lead to elevated phosphorus levels in waterways. By targeting phosphorus, the task force aims to reduce the frequency and severity of hypoxic events in the Gulf of Mexico.

Local Issues: Algae Blooms

Over the past decade, harmful algal blooms (HABs) have become an increasing concern for water quality in Illinois, affecting lakes, reservoirs, and rivers across the state. These blooms, often fueled by excess nutrients from agricultural runoff, wastewater discharges, and other sources, can pose significant risks to aquatic ecosystems, recreational activities, and even drinking water supplies. Major incidents have been reported in bodies of water such as Lake Shelbyville, Lake Bloomington, and the Fox Chain of Lakes, where nutrient pollution has led to recurring blooms, particularly during summer months. These blooms, especially those caused by blue-green algae, can produce toxins that threaten both aquatic life and public health.

Illinois has also faced heightened concerns about the safety of drinking water, with some lakes and reservoirs experiencing HABs that raise the potential for contamination. In response, state and local agencies have increased monitoring efforts and issued public health advisories during bloom events. Despite these efforts, nutrient pollution remains a significant

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challenge, particularly in agricultural regions, making it difficult to fully mitigate the frequency and intensity of HABs. While progress has been made with initiatives aimed at reducing nutrient runoff, the growing prevalence of these blooms highlights the need for continued action to protect Illinois' water quality.

Trading Programs: A Market-Based Solution

In response to the challenges posed by nutrient pollution, some states have implemented water quality trading programs. These programs allow polluters to buy and sell pollution credits, incentivizing them to reduce pollution beyond regulatory requirements.

Wisconsin and Iowa have been at the forefront of water quality trading in the Midwest. These programs have focused on reducing nutrient pollution in the Mississippi River Basin. By creating a market for pollution credits, these states have encouraged innovative and cost-effective solutions to water quality problems.

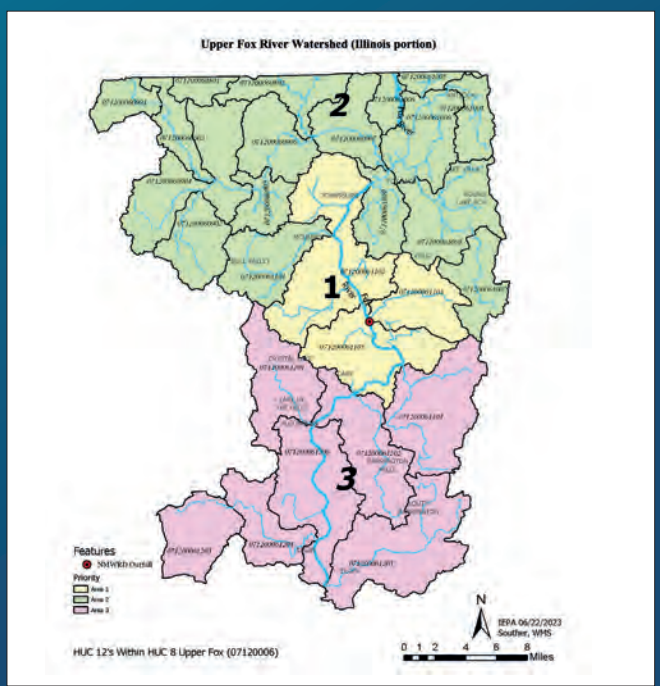
- **Wisconsin's Nutrient Trading Program:** This program allows point source dischargers to buy and sell nutrient credits, which can be generated through a variety of measures, including advanced wastewater treatment technologies, agricultural best management practices, and wetland restoration.
- **Iowa's Nutrient Reduction Strategy:** Iowa has implemented a comprehensive strategy to reduce nutrient pollution, including a nutrient trading program that allows farmers to generate and sell nutrient reduction credits.

Illinois: A Complex Water Quality Landscape

Illinois faces a complex water quality challenge due to a combination of factors, including urban runoff, agricultural runoff, and industrial discharges. The state's waterways, such as the Illinois River and Lake Michigan, are impacted by nutrient pollution, sediment, and other contaminants.

To address these issues, Illinois has implemented a variety of strategies, including:

- **Nutrient Reduction Strategies:** The Illinois Environmental Protection Agency (IEPA) has developed nutrient reduction strategies for specific watersheds, focusing on reducing phosphorus and nitrogen loads.
- **Watershed-Based Planning:** The state has adopted a watershed-based approach to water quality management, recognizing the importance of addressing pollution at its source.
- Regulatory Programs: The IEPA regulates point and nonpoint sources of pollution, including wastewater treatment plants, industrial facilities,
and intensive agricultural operations.
- **Public-Private Partnerships:** The state has partnered with local governments, conservation organizations, and agricultural producers to implement best management practices and restore degraded ecosystems.



A New Tool: PTOW – Illinois EPA Memorandum of Understanding

The new Memorandum of Understanding (MOU) is a cooperative agreement between the Illinois Environmental Protection Agency (Illinois EPA) and the Northern Moraine Water Reclamation District (NMWRD). The primary goal of this MOU is to establish a framework for a watershed-based nutrient reduction offset process. This process aims to reduce nutrient pollution in the Upper Fox River watershed by incentivizing the implementation of Best Management Practices (BMPs) in the region.

Key Points of the MOU:

- **Nutrient Reduction Offsets:** NMWRD can earn credits for reducing nutrient pollution through the implementation of BMPs. These credits can be used to offset future nutrient discharge limits in its NPDES permits.
- **BMP Implementation:** NMWRD's farmer and landowner partners will implement best management practices such as cover crops, filter strips, and wetland restoration in the designated watershed areas.
- **Monitoring and Reporting:** NMWRD will monitor the effectiveness of the BMPs and report the results to the Illinois EPA.
- **Offset Ratios:** Different offset ratios will be applied based on the location of the BMPs and the modeling tools used to estimate nutrient reductions. This provides flexibility in location and methodologies, and ensures that *more* phosphorus is removed from the watershed than would happen at the plant alone.
- **Certification and Verification:** BMPs must be certified by qualified professionals, and the offset credits will be verified by the Illinois EPA.
- **Banking of Offsets:** NMWRD can bank unused offset credits for future use.
- **Duration of the Agreement:** The MOU will be in effect for 20 years.

By collaborating on this watershed-based approach, the Illinois EPA and NMWRD aim to improve water quality in the Upper Fox River watershed and protect the environment.

The Cost-Benefit Analysis: Gray Infrastructure vs. Agricultural BMPs

A critical question in water quality management is how to allocate resources effectively. One approach is to invest in gray infrastructure, such as advanced wastewater treatment technologies, to reduce nutrient pollution. While this can be highly effective, it can also be very costly.

On the other hand, investing in agricultural best management practices can provide significant benefits at a lower cost. BMPs, such as cover crops, conservation tillage, and nutrient management plans, can reduce nutrient runoff and improve soil health.

A cost-benefit analysis can help determine the most cost-effective approach to reducing nutrient pollution. In many cases, a combination of gray infrastructure and agricultural BMPs may be the most optimal solution. However, it is important to consider the long-term implications of each approach, including factors such as climate change, population growth, and technological advancements.

By understanding the limitations of traditional regulatory approaches and embracing a watershed-based perspective, we can develop more effective and sustainable solutions to water quality challenges.

The Future of Watershed-Based Water Quality Management

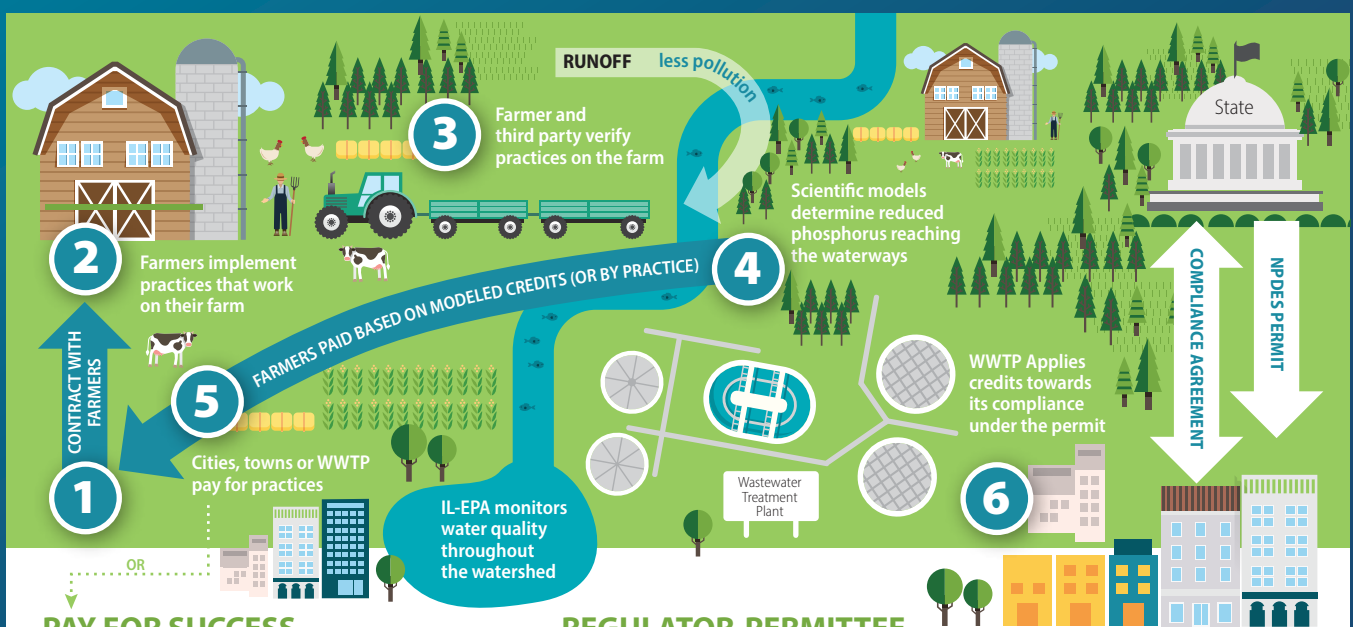
The watershed approach to water quality management has proven to be a valuable tool in addressing complex environmental challenges. As we continue to face increasing pressures on our water resources, it is essential to adopt a holistic perspective that considers the interconnectedness of our waterways.

Key challenges and opportunities for the future include:

- **Climate Change:** Climate change is altering precipitation patterns and increasing the frequency and intensity of extreme weather events, which can impact water quality.
- **Public Engagement:** Engaging the public in water quality issues is essential for building support for effective solutions.
- **Innovation and Technology:** Advancements in technology, such as remote sensing and water quality modeling, can provide valuable insights into water quality trends and inform decision-making.

By embracing a watershed-based approach and leveraging innovative solutions, we can work towards a future where our waterways are clean, healthy, and sustainable. It provides a method where we utilize the resilience of nature, and provide multiple benefits from watershed projects beyond just phosphorus removal – including habitat protection, soil health, water capacity improvements, and stream health. CS

Already attending CSWEA's 98th Annual Meeting? Don't miss out on the Pre-Conference Workshop, *Advancing Nutrient Trading within the Circular Water Economy*. Read more on pages 33-34.



PAY FOR SUCCESS

This performance-based approach allows contracting for nutrient reduction outcomes that meet state standards and that result from farmer-selected conservation practices.

Payments are made to farmers after outcomes are certified as **credits**. This differs from the standard NRCS payment scheme which pays for a practice.

REGULATOR-PERMITTEE AGREEMENTS

Formal agreements between state agencies and local government are critical to define what, when, and how outcomes will be counted, leaving local government with the freedom to decide how much watershed-based work to include in their compliance plan.

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Algaewheel™ Pilot Study

By Timothy Gualandri, PE, District Engineer for Fox River Water Reclamation District
Franklin Jakubow, EIT, Project Engineer for Fox River Water Reclamation District
Dan B. Johnson, PhD, Chief Technology Officer for OneWater

The Fox River Water Reclamation District (FRWRD) owns and operates three water reclamation facilities – the Albin D. Pagorski WRF, the North WRF, and the West WRF – all serving a population of 200,000 in the city of Elgin, IL, and the surrounding communities just outside of Chicago. With a combined capacity of 37.75 MGD, the Albin D. Pagorski facility treats all sludge generated at all three facilities. After anaerobic digestion, the sludge is dewatered into biosolids using belt filter presses. The liquid filtrate extracted during the dewatering process is recycled to the head of the facility. The filtrate has high concentrations of nutrients, approximately 700-1,000 mg/L of ammonia and 95 mg/L of phosphorus. At most facilities these concentrations would be 10% to 15% of the influent nutrient load, but since the Albin D. Pagorski facility is a centralized sludge processor, it is around 20% to 25% of the nutrient load.

Due to the high nutrient concentrations in the recycled filtrate, the existing sidestream enhanced biological phosphorus removal system at the Albin D. Pagorski facility is performing inefficiently and sporadically. In addition, while the facility was designed for an average flow of 25 MGD, only 12 MGD is experienced most days. Therefore, the facility is often CBOD deficient, with unideal carbon-to-nitrogen and carbon-to-phosphorus ratios. Altogether, these issues have made it challenging to consistently maintain the current effluent total phosphorus (TP) limit of 1 mg/L.

With upcoming permit revisions to reduce the TP effluent limit to 0.5 mg/L, the Algaewheel™ Pilot Study commenced with the goal of removing 50% of the ammonia, 30% of the total nitrogen, and 50% of the total phosphorus in the recycled filtrate. The Algaewheel™ pilot system is a novel, fixed-biofilm algal and bacterial system manufactured by OneWater™. The reactor in the pilot-scale system is comprised of multiple Algaewheel™ rotating algal contactors (RACs) that help efficiently oxygenate the anaerobic digester filtrate being treated in a shallow tank. The algal and bacterial biomass can uptake inorganic nitrogen and phosphorus without the presence of CBOD or use of fine-bubble aeration, while also increasing the dissolved oxygen content. Coarse bubble diffusers, powered by a 1hp blower, rotate the wheels along a shaft constantly, no motors necessary.

By reducing the ammonia recycled to the head of the facility, the carbon-to-nitrogen ratio will improve, allowing operators to reduce aeration in the main

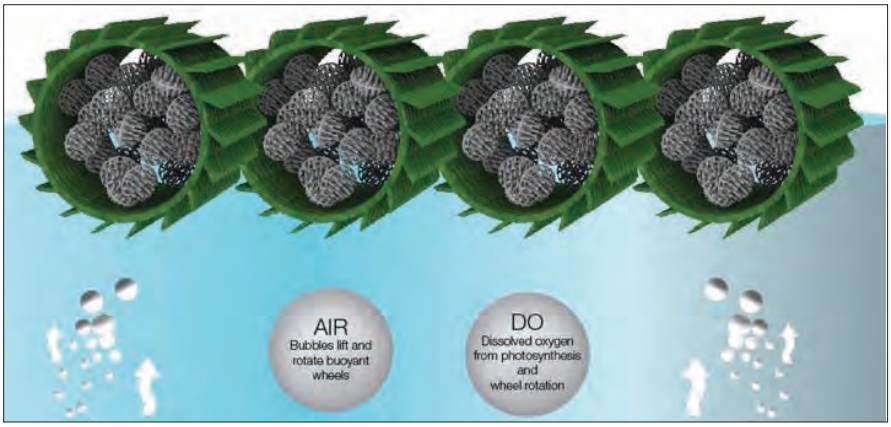

Image 1: Algaewheel™ Rotating Algal Contactors (RACs) diagram.

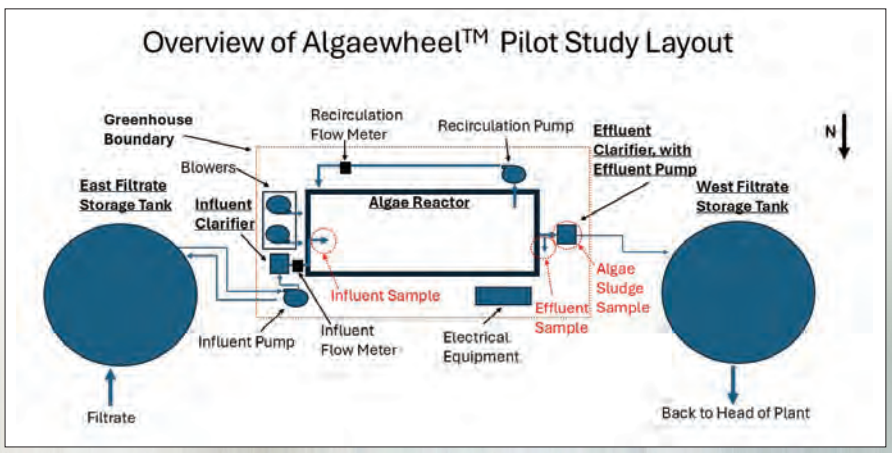

Image 2: Algaewheel™ Pilot Study layout.

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Image 3: FRWRD AlgaewheelTM Pilot Reactor, October 2024.

> "The AlgaewheelTM Pilot Study commenced with the goal of removing 50% of the ammonia, 30% of the total nitrogen, and 50% of the total phosphorus in the recycled filtrate."

treatment train and avoid supplemental glycerin dosage to artificially increase CBOD. By removing the TP in the sidestream, a closed-loop system can be created, with the phosphorus-loaded algae biomass returned to the digester and run through the dewatering belt filter presses again. In addition to providing extra biomass for the digester, this should also de-load the main treatment train, further balancing the carbon-to-phosphorus ratio. These two benefits will allow FRWRD to reduce or eliminate the projected dosing of coagulant to obtain the future permit.

The Algaewheel™ Pilot Study commenced in October of 2024. Upon its completion one year after its commencement, the data generated will determine the viability of this technology to reduce sidestream nutrient loads and improve facility operations as a whole. CS

GLOBAL WATER STEWARDSHIP

GWS Update

By Joe Lapastora & Sarah Guzman, GWS Co-Chairs

Hello *Central States Water* subscribers and Global Water Stewardship supporters, GWS Co-Chairs Joe Lapastora and Sarah Guzman are here to provide a quarterly update on all our recent activity as we closed the doors on 2024.

Over the past few months, GWS has seen some changes to our organization that we would like to highlight. During Q4 of 2024, GWS appointed new Board Members, and our Board is now compromised of water industry experts from across the US.

GWS BOARD OF TRUSTEES

- Mohammed Haque (CSWEA), IL
- Sarah Guzman (Black and Veatch), UT
- Joe Lapastora (Northern Moraine WRD), IL
- Liz Heise (Trotter & Associates, Inc.), IL
- Eric Lynne (Donohue & Associates, Inc.), MN
- Greg Gunderson (MSA Professional Services), WI
- Solomon Abel (CDM Smith), CO
- Steve Myers (Hach), UT
- Megan Livak (SmartCover Systems), VA
- Brandon Friedland (Xylem), MD
- Jon Liberzon (Black & Veatch), CA

We would be remiss not to thank those who are rolling off the Board for their service to our organization. Specifically, we would like to thank Matt Streicher (Glenbard Wastewater Authority), Manuel De Los Santos (Aqua Aerobic Systems), Eider Alverez Puras (Johnson Controls), Maureen Durkin (MWRDGC), and Amanda Streicher (Baxter & Woodman).

Aside from the Trustee transitions, we are happy to report that we have seen an uptick in volunteer interest as of late. Our volunteers are the lifeblood of this organization and we are always happy to onboard so if you would like to find out more about GWS or get plugged into our monthly calls, please contact us – Joe Lapastora and Sarah Guzman, Co-Chairs, at *chair@globalwaterstewardship.com.*

We are excited to unveil a Volunteer Spotlight section that will be featured regularly in these CSWater quarterly magazines. For the inaugural Volunteer Spotlight, we are pleased to highlight Mr. Brandon Friedland who has been instrumental in our public education and outreach efforts.

VOLUNTEER SPOTLIGHT
Brandon Friedland

Hi! My name is Brandon. I'm a Senior Project Manager with Xylem and a registered yoga teacher. I'm based in the Charm of the Chesapeake, Baltimore, MA. I received by BS from the University of Delaware and I formally began my career in the water world in 2014. It was during my first field technician position in the wastewater sector where I learned the true meaning of grit. Since then, I've obtained certifications in rainwater harvesting and design and am working through an associate's degree in Sustainable Horticulture.

As I learned and grew, I discovered an amazing industry full of possibilities and stepped into a business development role with a start-up company focused on a unique, energy efficient membrane bio-reactor system for decentralized treatment. I was fortunate to be able to embrace the work, travel to conferences and to help to develop impactful technologies still in use today.

I connected with many great groups that have helped to shape my world outlook. One of these groups is GWS. I'm currently serving my second year as the Public Outreach Chair and could not be more excited about the future of our team.

The effort that I am most thrilled about is AguaFEST! A family fun day to celebrate water and learn about the many aspects of our work. We've hosted two annual events in 2023 and 2024, respectively, and are scheduled for three events in 2025. We are growing and it could not be more exciting!

AguaFEST has brought together hundreds of students and their families in Costa Rica. Our amazing team of volunteers and partners incorporate and lead engaging educational activities, coordinate with local resources like the firefighters and libraries and work closely with utilities and administrators to come together and celebrate the amazing gift of water.

In addition to the resources that GWS pulls together for the event, Xylem's Watermark Community Grant Program has been instrumental in supporting my efforts with the program and I am eternally grateful.

Our team is planning for April and August events and there is always room to support through volunteering time or donating to our cause! If you have any interest to be involved or would like to learn more, please feel free to call or email Brandon Friedland, 240-278-4631, *brandon.friedland@xylem.com.*

SPONSORSHIP OPPORTUNITIES

Silent Auction

At the upcoming CSWEA Annual Meeting (from May 28-30 at the Monona Terrace Event Center in Madison, WI), GWS will host our annual Silent Auction to help support our initiatives. Exhibitor's auction item donations will be showcased in the Exhibitor Hall at the annual conference in a silent auction format with all proceeds going directly to GWS. Please reach out to this year's Silent Auction organizer, Autumn Fisher at *afisher@donohue-associates.com.*

Annual Sponsorship

At GWS, we are passionate about making a difference in the world, and we believe that everyone can play a part! Whether you're an individual, a business, or an organization, there's something you can do to support our mission.

Through partnerships with local organizations and community members, we're able to identify areas of need and work together to implement sustainable solutions. Our projects aim to of providing safe, reliable access to clean water and sanitation services. And with our focus on education and community involvement, we're able to ensure that these solutions are sustainable and make a lasting impact.

But we can't do it alone! That's why we're calling on companies like yours to join us in our mission. By becoming a GWS sponsor, you'll not only be supporting a great cause, but you'll also receive year-round exposure and direct outreach to our members and community. Our sponsorship packages are tailored to your organization's goals, so you can choose the best add-ons to meet your needs.

Plus, with recognition at our international conference and within our communications, you'll be able to showcase your support to a global audience.

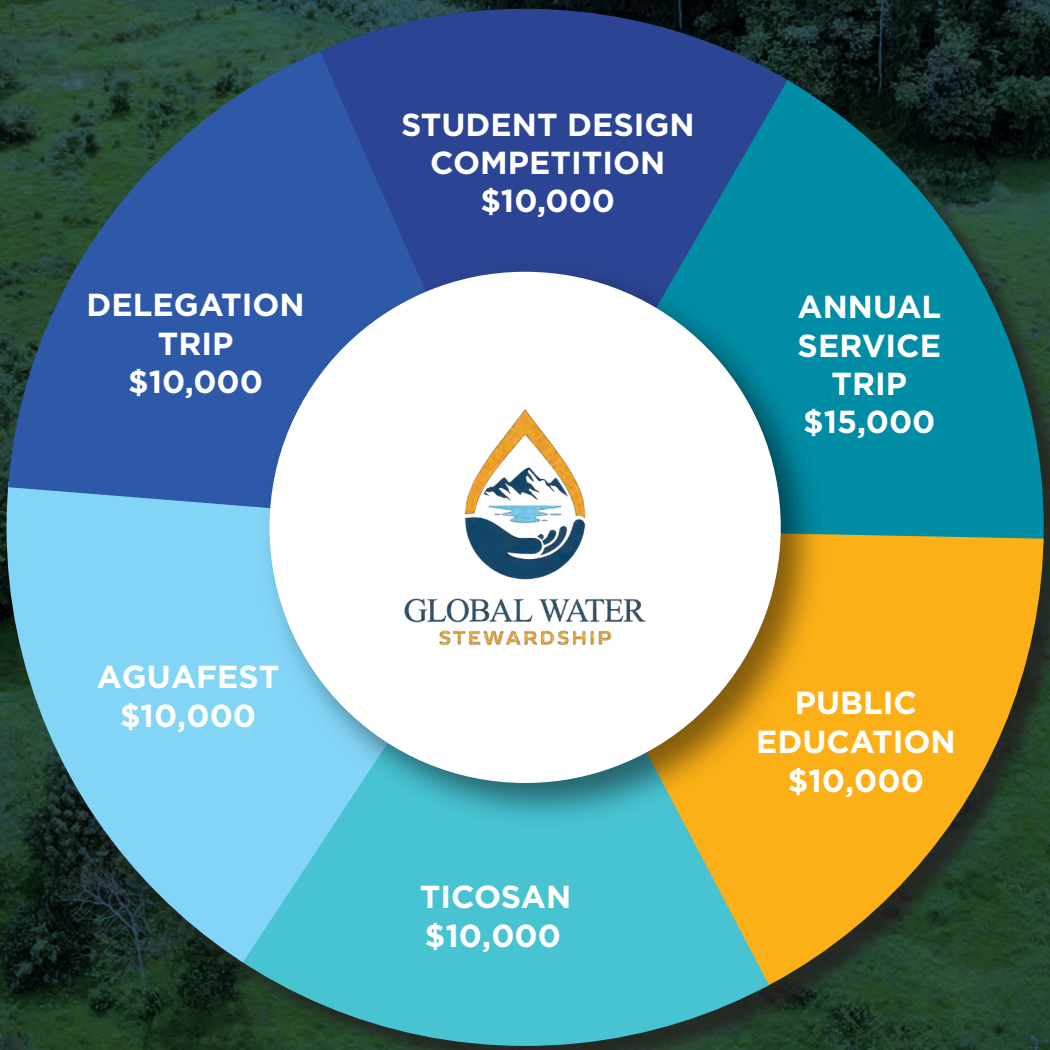
So how can you get involved? Our sponsorship packages offer a range of options, from basic support to full-scale partnerships – and with a 365-day period, you'll have plenty of time to make an impact. Choose the package that's right for your organization, and we'll work with you to customize it to your needs. Whether you're interested in supporting our International Student Design Competition, Annual Service Trip, Public Education efforts, Ticosan, or AguaFest initiatives, your contribution will help to provide clean water and WASH education to those in need in Costa Rica. And with the option to support multiple initiatives, you can make an even greater impact!

By becoming a GWS sponsor, you'll be joining a community of like-minded individuals and organizations who are committed to making a positive impact. So why wait? Choose the GWS Sponsorship package that's right for you and start making a difference today. Together, we can create a better future for us all.

Pura Vida until next time!

Joe Lapastora and Sarah Guzman, GWS CS

PROJECTS OVERVIEW



OUR MISSION

Global Water Stewardship resolves sanitation issues in developing countries. Our focus is on educating the public and engineering sustainable centralized solutions to keep waterways clean and communities healthy.

COMPLETED PROJECTS

COMMUNITY DESIGNS

- Sámara
- Monteverde
- La Fortuna
- Dominical
- Bahía Ballena
- Palmar Sur
- Piedras Blancas
- Montezuma
- Bijagua de Upala
- Santa Teresa

BIOGARDENS

- Cloud Forest School (Monteverde)
- Escuela Zeta Trece (La Fortuna)
- Escuela Verde (Bahía Ballena)
- Escuela de Montezuma
- Escuela San Fernando

TECHNICAL SUPPORT

- Ptar Los Tajos (San José)
- Parque Manuel Antonio (Quepos)
- Ptar San Isidro (Pérez Zeledón)

WASH EDUCATION PROGRAM

- Cloud Forest School (Monteverde)
- Escuela Zeta Trece (La Fortuna)
- Escuela Verde PK (Bahía Ballena)
- Escuela Flor de Bahía (Bahía Ballena)
- Colegio Humbolt (San José)
- Liceo La Uvita
- Uvita Christian Academy
- Escuela Dominical
- Escuela de Montezuma
- Escuela San Fernando
- Escuela de El Jardin (Bijagua)

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SPONSORSHIP PACKAGES

GWS wants to provide your company with a year-round presence and direct outreach to our members and community. Our sponsorship packages are tailored to provide you with year-long exposure and customizable options, allowing you to select the best add-ons to meet your organization's goals. An annual sponsorship package gives your company recognition at our international conference and within our communications and helps us budget effectively for a year's worth of programming.

The GWS Sponsorship package offers different tiers, and you can choose the one that fits your company's goals the best. All the sponsorship packages are based on a 365-day period.

SPONSORSHIP PACKAGES

EXPLANATION OF BENEFITS

Social Media Advertisement
Your name and logo acknowledgment on GWS social media pages, including LinkedIn, Instagram, Facebook, Twitter, and YouTube.

GWS Website Recognition
Your name and logo acknowledgment on the GWS website.

Official AguaFest Sponsor
Recognition on the GWS AguaFest website, your name and logo in all of the AguaFest social media advertisements, your logo on the event t-shirts, and your logo on the physical banners the day of the event.

Official Service Trip Sponsor
One complimentary Ticosan registration, recognition on the GWS Service Trip website, your name and logo in all of the service trip social media advertisements, your logo on the trip t-shirts, and your logo on the GWS quarterly newsletters.

Official WEFTEC Sponsor
Your company's name and logo acknowledgment on GWS social media pages, and recognition on GWS's WEFTEC flyers.

Official Ticosan Sponsor
Two complimentary Ticosan registrations, recognition and logo at the Ticosan Networking Reception, standalone promotional slide at the event, recognition on the GWS Ticosan website, your name and logo in all of the Ticosan social media advertisements, your logo on the Ticosan t-shirts, half price exhibitor package, and your logo on the GWS quarterly newsletters.

SUPPORT GWS TODAY



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April 8-9

Water Environment Federation
the water quality people

WEF WATER POLICY FLY-IN
WASHINGTON DC

April 15

TRI-STATE YP MEETING – PRACTICAL SKILLS:
UNLOCKING THE POTENTIAL OF EVERYDAY PROGRAMS
ONLINE

April 15

SIWI STOCKHOLM JUNIOR WATER PRIZE

STOCKHOLM JUNIOR WATER PRIZE DEADLINE

April 22

EDUCATION SEMINAR
MONONA TERRACE CONVENTION CENTER | MADISON, WI

April 22

MIDWEST DESIGN COMPETITION

MIDWEST STUDENT DESIGN COMPETITION
MONONA TERRACE CONVENTION CENTER | MADISON, WI

ADVERTISER PRODUCT & SERVICE CENTER

Central States Water is made possible by the companies below who convey their important messages on our pages. We thank them for their support of CSWEA and its publication and encourage you to contact them when making your purchasing decisions. To make it easier to contact these companies, we have included the page number of their advertisement, their phone number, and, where applicable, their website.

COMPANY	PAGE	TELEPHONE	WEBSITE
Advanced Engineering and Environmental Services (AE2S)	6	763-463-5036	www.ae2s.com
AECOM	14	314-429-0100	www.aecom.com
AMERICAN Flow Control	56	205-325-7701	www.american-usa.com
Apex Engineering Group	27	701-373-7980	www.apexenggroup.com
Baxter & Woodman, Inc.	66	815-459-1260	www.baxterwoodman.com
Boerger, LLC	43	877-726-3743	www.boerger.com
Bolton & Menk, Inc.	56	507-625-4171	www.bolton-menk.com
CDM Smith	66	651-772-1313	www.cdmsmith.com
Clark Dietz, Inc.	42	262-657-1550	www.clark-dietz.com
Crawford, Murphy & Tilly, Inc.	66	217-787-8050	www.cmtengr.com
Dixon Engineering	7	800-327-1578	www.dixonengineering.net
Donohue & Associates, Inc.	68	920-208-0296	www.donohue-associates.com
Electric Pump, Inc.	13	800-211-6432	www.electricpump.com
Energenecs	66	262-377-6360	www.energenecs.com
Engineering Enterprises, Inc.	20	630-466-6700	www.eeiweb.com
Equipump	14	800-783-5623	www.equipump.com
Force Flow/Halogen Valve Systems	9	925-686-6700	www.forceflowscales.com
Foth Infrastructure & Environment	58	920-497-2500	www.foth.com
Gasvoda and Associates	67	708-891-4400	www.gasvoda.com
Hazen and Sawyer	64	651-256-9534	www.hazenandsawyer.com
HDR Engineering Inc.	8	763-591-5400	www.hdrinc.com
HR Green, Inc.	64	800-728-7805	www.hrgreen.com
InfoSense, Inc.	8	877-747-3245	www.infosense.com
Integrated Process Solutions (IPS)	21	218-435-1703	www.ipsamerica.biz
Janssen Machine Company	64	218-493-4470	www.janssenmachine.com
JDV Equipment Corporation	8	973-366-6556	www.jdvequipment.com
Kraft Power Corporation	20	800-969-6121	www.kraftpower.com
KROHNE, Inc.	27	800-356-9464	www.us.krohne.com
LAI, LTD	16	847-392-0990	www.lai-ltd.com
Lakeside Equipment	2	630-837-5640	www.lakeside-equipment.com
LW Allen/Altronex	53	800-362-7266	www.lwallen.com
Mekco, Inc.	4	920-696-5570	www.mekco.com
Merrell Bros., Inc.	43	800-663-8830	www.merrellbros.com
Metropolitan Industries	22	815-886-9200	www.metropolitanind.com
Moleaer, Inc.	28	424-558-3567	www.moleaer.com
MSA Professional Services, Inc.	34	800-362-4505	www.msa-ps.com
Pittsburg Tank & Tower	20	270-826-9000	www.pttg.com
RELINER/Duran Inc.	10	800-508-6001	www.reliner.com
Rice Lake Construction Group	45	218-546-5519	www.ricelake.org
SEH	63	651-490-2000	www.sehinc.com
Starnet Technologies	40	262-886-0228	www.starnettech.com
Strand Associates, Inc.	12	608-251-4843	www.strand.com
Tri-State Seminar	48		www.tristateseminar.com
Trotter & Associates Inc.	55	630-587-0470	www.trotter-inc.com
Unison Solutions, Inc.	20	563-585-0967	www.unisonsolutions.com
Visu-Sewer, Inc.	3	618-397-9840	www.visu-sewer.com
Waterly	11	833-492-8370	www.waterlyapp.com
WaterSurplus	34	800-919-0888	www.watersurplus.com
Ziegler CAT	34	952-887-4520	www.zieglercat.com

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2025 ACEC Illinois Engineering Excellence Special Achievement Award