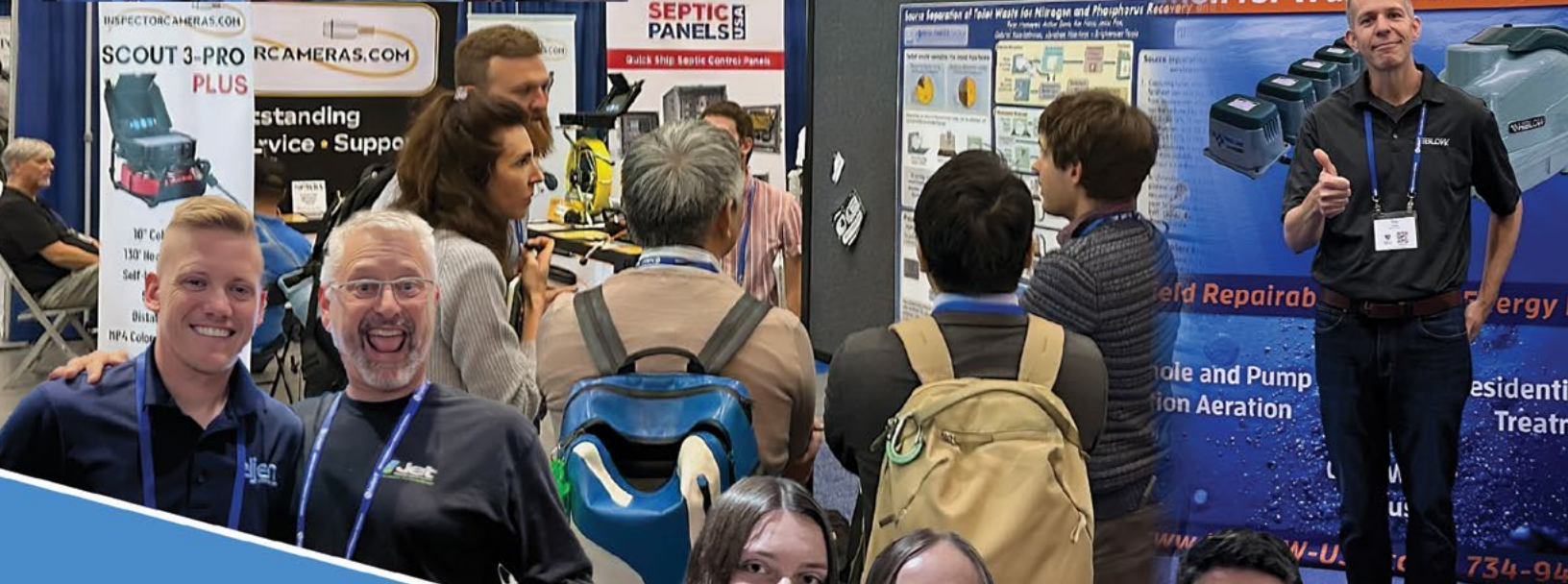


THE Onsite Journal

NOWRA
National Onsite Wastewater Recycling Association

Spring 2024



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MESSAGE FROM THE EXECUTIVE DIRECTOR



Welcome to the Spring issue of NOWRA's *Onsite Journal* for 2024. We will be returning to three issues per year for 2024 – there is just too much information that we need to share with our members and interested parties. This issue includes a wrap up of our highly successful 2023 Onsite Wastewater Mega-Conference (pg. 21). We drew over 700 attendees to Hampton, Virginia for the conference and sold out our exhibit hall. Thank you to our partner organizations, and especially VOWRA for their support of the conference.

We are excited to shift now to the Pacific Northwest and Spokane, Washington for our 2024 Mega-Conference. The theme for our 2024 conference is “Celebrating Tomorrow’s Environment: Clean Water for the Future” in honor of the 50th anniversary of the Spokane World’s Fair in 1974—the first environmentally focused World’s Fair. Watch for information as the Call for Abstracts has just been released. We hope that you can join us in Spokane!

The end of 2023 and early 2024 was a very busy time for NOWRA. We concluded 2023 with the overhaul of our NOWRA Online Learning Academy logo and website, as well as the release of 22 new online training

modules. NOWRA representatives also attended the Partnership for Decentralized Wastewater Management’s official MOU signing ceremony at EPA Headquarters in Washington, D.C. President Allison Blodig signed the MOU on behalf of NOWRA and vowed to continue NOWRA’s commitment to the partnership (pg. 25).

We were also busy with grants. NOWRA was excited to partner with many of our state affiliates along with several other partner organizations in applying for a Workforce Development grant in November. The grant proposal included scholarships, mentorships, career fairs, and other materials to help attract and keep professionals in the onsite wastewater field. In addition to this grant, NOWRA also began working on three 3-year projects in collaboration with RCAP for new and updated training materials on several key issues to our industry – O&M, small communities, and challenging sites. We were also pleased to release our first homeowner education – a FREE online homeowner education course (pg. 27).

NOWRA representatives were on the road for the first few months of 2024 with many conferences and events occurring in that time span. Once

again, we attended the WWETT Show in Indianapolis where NOWRA provided valuable training sessions as part of the Education Day as well as held the National Backhoe Roe-D-Hoe championship (pg. 26). If you have not experienced a Backhoe Roe-D-Hoe in person, we highly recommend you attend one. They are fun and entertaining. NOWRA annually conducts this event at the WWETT Show and select state affiliate conferences.

This organization is only as strong as its members and volunteers. Much of the great work that you will read about inside of the publication is due to the dedicated committee members and volunteers. As you read about NOWRA’s activities, please consider joining a committee or task force. It’s a great opportunity to expand your horizons, network with like professionals, feel good about yourself and the industry that we have chosen, and make friends for life.

Thank you for allowing me to serve as the Executive Director of this great organization.

— **Thomas Groves**

We need your help! Please consider joining a NOWRA committee or task force. It’s a great opportunity to expand your horizons, network with like-minded professionals, and make friends for life!

A NOTE FROM THE PRESIDENT



The beginning of my last year as president has come with some terrific opportunities for NOWRA and our affiliate organizations. The best news just came that the EPA expanded the Closing America's Wastewater Access Gap initiative to another 150 communities that need our help. We plan to make sure decentralized systems are a big part of the solutions offered. Along those same lines, we were awarded money from the Rural Community Assistance Partnership, to develop four new training modules. Another opportunity came when NOWRA and our affiliates were included in a grant application with one of our MOU partners, the National Rural Water Association (NRWA), for technical assistance to communities that have issues with wastewater. This is our first joint effort with NRWA but hopefully not our last. We also applied for our own grant from the EPA for workforce development. This was also a joint effort with our affiliates, and we hope to hear back on that application any day now. It is all very exciting to think about having some money to put boots on the ground as both grants offer us an opportunity to do work close to home and make a difference.

Speaking of making a difference, NOWRA would not be where we are today without the Online Learning Academy. Dr. Sara Heger and Tom Groves organize the efforts to keep that site up-to-date and operating. The site did get a cool new logo and a sleek new look that improves your ability to get around and find a class that fits your needs. While online classes can't take the place of face-to face interaction, it does offer you the ability to get your continuing education if you can't make it to an in-person training.

Something new is coming to the online learning platform! We will be rolling out free business classes for our members this spring into early summer. These classes are to help you, the small business owners that make up most of our membership, pick up some great advice for your business that can help you in your long-term success. Running a business is hard work and we want to help. Some topics we are working on include making sure you are covered by the right insurance, building (and running) a quality business, working for and with your employees, and how to plan to get out of business when you are done working. This is something I

am very passionate about and I hope you find it valuable. We have some other ideas for offering value for our members...so stay tuned!

Plans are underway for the upcoming 2024 Mega-Conference in Spokane, WA. We are lucky to have both our Washington and Oregon affiliates joining NOWRA, NAWT, and SORA in the planning and promoting of our biggest event of the year. There is so much work that goes into making the conference a great experience for our all our members, and we appreciate all the help we get.

On the lobbying front, we are very involved trying to make sure money makes it to our industry to help us bring properly designed, installed, and operated decentralized systems to those in the U.S. who need them. Be sure and read the latest update from Tim Perrin with Polsinelli in this issue of the Journal. Thank you to Carl Thompson and Roxanne Groover for heading this effort for our Lobbying Board of Governors and our membership, and putting up with my questions about the process.

Finally, I want to offer a few words to congratulate the Wisconsin Onsite Wastewater Recycling Association (WOWRA) on their 50th anniversary! Their executive director, Jeff Beiriger, is an active participant in our State Affiliate meetings. He shares his perspective and keeps looking for ways to grow that organization. Here's to 50 more years of WOWRA and NOWRA working together!

— Allison Blodig

Tell NOWRA what we can do for you!

Text allisonblodig425 to 22333 and send us one idea or benefit that you would find helpful as a member of NOWRA and/or your state-affiliated organization. Don't worry, we won't have access to your phone number, so no other texts will be sent to you. Or, email us at info@nowra.org.



STATE AFFILIATE NEWS

CPOW (Colorado) — This year, Colorado Professionals in Onsite Wastewater celebrated their 20th anniversary at their annual education conference in Golden, Colorado. This was their largest education conference to date with 210 attendees, including 11 exhibitors. CPOW will be hosting 11 NAWT online education classes via Zoom and 2 in-person soils training classes this year. CPOW also hosted their third annual membership ski day on March 8 at Arapahoe Basin ski resort.

MOWPA (Maryland) — Maryland recently established a State Board of On-Site Wastewater Professionals within the Maryland Department of the Environment (MDE), with duties beginning this spring. The Board's purpose is to regulate individuals who provide on-site wastewater services, and will make recommendations to MDE on licensing, qualifications, certification, and education requirements for various sectors of the industry, including designers, inspectors, installers, pumpers, and O&M service providers. Also, a code of ethics will be established and proposed regulations will be reviewed.

OOWA (OHIO) — The Ohio Onsite Wastewater Association held their annual conference January 9-10 at the Cherry Valley Hotel in Newark. Tim Hack of Tidy Tim's was awarded the Trent Lydic Memorial Ohio Onsite Wastewater Association Distinguished Service Award.

Board nominations for OOWA recently took place and the following individuals will be holding a leadership position in 2024: Zak Sherman of Sickel's Septic Tanks, President; Chris Mandich of Jet, Inc., Vice President; Mike Rogich of Delaware General Health District, Past President; Clermont County Public Health's Robert Wildey and Eljen Corporation's Drew Nickoli, Co-Treasurers; and Jason Menchhofer with the Mercer County Health District, Secretary and President Elect. Jesse Stiger of Stiger Precast was appointed to the board. The OOWA Board of Directors is excited for the upcoming year!

POWRA (Pennsylvania) — The Pennsylvania Onsite Wastewater Recycling Association has changed its focus from Advisory Panel to Education Resource. We are embarking on a statewide campaign to conduct seminars tailored to Real Estate Professionals for further dissemination. POWRA's seminars will meet the PA Board of Realtors Requirements for Continuing Education Units and will be presented on a rolling basis

throughout all six regions of the state. POWRA representatives attended the recent PA Super Conference hosted by the PA Septage Management Association (PSMA) and the PA Association of Sewage Enforcement Officers (PASEO).

WOWRA (Wisconsin) — The Wisconsin Onsite Water Recycling Association held its Winter Conference on February 1-2 in Wisconsin Dells. This marked the 50th Anniversary for WOWRA, and members celebrated with special recognition from NOWRA Executive Director Tom Groves and special awards for distinguished service presented to Todd Stair (Herr Corporation) and Mark Wieser (Wieser Concrete). In addition, a commemorative cake was served during the expo and a founding member of the group shared stories about the formation of and early growth of the association. Three members were newly elected to the Board of Directors: Chris Brezinski, Mark Prevost, and CeCe Rudnicki.



YOWA (New England) — The Yankee On-site Wastewater Association is a group of wastewater professionals who volunteer to provide on-going educational opportunities and information for our membership. While we are based in Massachusetts and focus on the developments within the Massachusetts on-site regulations, we also look for ways to provide training that will benefit all of the New England states. YOWA is pleased to announce that Mary Clark of Vermont has taken over the helm of president for the next two years.

Mary has worked in the industry for over 45 years as a designer, regulator, and manufacturing representative, developing community wastewater management plans, including several in Massachusetts. She is looking forward to growing our membership and services.

Current president Alyssa Rusiecki stated, "It has been a privilege to serve as YOWA president, and I look forward to continuing to serve on the education committee. We are in good hands with Mary Clark."

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MEET YOUR NEW BOARD MEMBERS



KWAME AGYARE (California)

Category: Designer/Engineer

Kwame's experience in the field of onsite wastewater treatment systems spans over 30 years, and ranges from being the civil engineer/designer for Pima County DEQ in Tucson, to becoming the overall Head of Septic/OWTS permitting for the State of Arizona (2005-2010). He is currently president of his own septic engineering firm, Agyare Engineering Services, Inc, having most recently left an almost two-year position as OWTS designer, branch manager, and head of engineering for Acuantia Inc, a subsidiary

of the multinational company Rotoplas, Inc. Over the past two years Kwame submitted over 50 OWTS system designs for County approval, for properties ranging from individual owner lots, commercial lots, RV parks, and truck stops. During his five-year tenure as Arizona permitting head, Kwame oversaw the issuance of more than 1,000 OWTS permit approvals throughout the state and in addition, reviewed and approved more than 200 new alternative OWTS product listing approvals for wastewater treatment products in the state. He has a thorough knowledge of OWTS wastewater treatment products. Kwame is currently authorized to design OWTS in over 10 county jurisdictions in the northern and southern California regions, and has also designed systems in regions currently not delegated to the local jurisdictions for approval.

Kwame also served as the State of Arizona representative to the State Onsite Regulators Association (SORA) for two years (2008-2010), and he also served at the highest levels within the American Society of Civil Engineers (ASCE) as their California Region Governor (2013-2017) and as the California Region Director and National Society Board Member (2017-2020).



MICHAEL BROUSSARD

(New Mexico)

Category: Regulator

Michael is the Environmental Health Bureau Liquid Waste Program Manager for New Mexico and has worked 15 years with New Mexico Environmental Department. Michael served as the president and board member of the New Mexico Environmental Health Association for three years. He currently serves on the SORA (State Onsite Regulator's Association) board as the treasurer, and he is a member of the NOWRA

affiliate in New Mexico. He is also a technical committee member for the International Association of Plumbing & Mechanical Officials and the American Society for Testing and Materials. Michael graduated from Lamar University in Beaumont Texas with a BS in Chemistry and minor in Biochemistry.

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MEET YOUR NEW BOARD MEMBERS

continued

He served as an Officer in the US Army for 10 years in the Nuclear-Biological and Chemical and Quartermaster Corp's. Michael has worked for 20 years in the private sector quality assurance departments for General-Mills, Georgia Pacific, Exxon-Mobil, Cardinal Health and Johnson & Johnson, as well as being a small business owner in the metal finishing industry and currently for an indoor air quality company for 16 years. Michael manages the state's regulatory program and provides technical assistance and training for the state's environmental health professionals, homeowners, realtors, and installers.



ASHLEY DONNELLY
(Connecticut)
Category: Manufacturer/Supplier

Ashley is the technical training and sales development manager at Infiltrator Water Technologies. She has a passion for building relationships within the onsite wastewater treatment industry through training and technical education. Ashley entered the industry over 20 years ago and works to preserve the environment through sound wastewater treatment solutions. In her position at Infiltrator Water Technologies (IWT), she manages the Inside Sales Team and is responsible for maintaining and building customer relationships. This involves assisting engineers, contractors, and regulators with technical and design information, training, installation, and operation and maintenance. In 2020, she launched IWT's webinar program, which is currently accredited in over 12 states and has trained over 2,000 attendees on various contemporary industry topics. Ashley serves on several industry committees, including NOWRA Emerging Professionals (Social Outreach Chair) and WEF Small Communities Committee. She holds a Bachelor of Arts in communications from Central Connecticut State University.



New NOWRA Board Member Ashley Donnelly recently attended the Tennessee Onsite Wastewater Association annual conference and provided an update from NOWRA.



LEGISLATIVE UPDATE

Decentralized Wastewater Funding Wins Face Tricky Political Landscape

By Tim Perrin, Polsinelli

Our news feeds certainly paint a bleak picture of Washington, D.C. It seems like Washington just can't get its act together. But there are some good reasons for decentralized wastewater stakeholders to be optimistic.

Congress is poised to enact legislation that will provide millions of dollars for decentralized wastewater systems. Getting to the point of actually voting on Fiscal Year (FY) 2024 appropriations, which will provide funding for all federal programs, has been tortured to say the least. We're five months

into FY 2024 and Congress has only passed continuing resolutions that extend current funding. Despite being stymied by slim majorities and election year politics, Congressional leaders in the U.S. House of Representatives and Senate struck a deal to pass six of the 12 federal appropriations bills before funding for many programs expired. This compromise legislative package essentially maintains federal programs at FY 2023 levels and is devoid of politically driven "poison pill" policy riders. Congress is expected to pass this tranche of funding bills with a strong bipartisan vote.

The reason decentralized wastewater proponents can celebrate is because this compromise package includes a total of \$6 million in funding for the Department of Agriculture's (USDA) Rural Decentralized Water Systems Grant program for Fiscal Year (FY) 2024. Of that amount, \$1 million is specifically designated to "provide subgrants to eligible individuals for the construction, refurbishing, and servicing of individually owned household decentralized wastewater systems." Eligible well water and decentralized wastewater stakeholders

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LEGISLATIVE UPDATE *continued*

can tap into the remaining \$5 million grant monies. While this amount is far less than the \$20 million allocation passed by the Senate shortly before Thanksgiving, it is more than the amount passed by the House last summer and represents an ongoing commitment to the value of this program.

The compromise appropriations bill will also fund Environmental Protection Agency (EPA) programs, which received an overall cut of \$1 billion from FY 2023 levels. For the third straight fiscal year, Congress again chose not to fund the EPA's Decentralized Wastewater Grant program, which was created in the 2021 Investment in Infrastructure & Jobs Act (IIJA) after a successful advocacy campaign spearheaded by NOWRA. This lack of funding is disappointing because the EPA will remain unable to establish the program and disperse grants.

However, there is a silver lining: The House included \$5 million for this program in its version of the Interior-Environment Appropriations bill the chamber passed in November. Although this number was not included in the final bill, it was the first time either Congressional chamber had allocated money for the program. With the FY 2025 appropriations process about to begin, NOWRA advocates are in a stronger position than ever to call for the funding of this program.

Another bright spot in NOWRA's advocacy efforts is the success it has had working with likeminded stakeholder organizations to amplify our messaging. In addition to communicating decentralized wastewater interests directly to Members of Congress, and in the course of calling on Congress to pass appropriations bills that bolster decentralize wastewater programs, NOWRA rallied the support of 13 other national organizations to advocate

for federal programs that promote decentralized clean water and sanitation in a February letter sent to the top Republican and Democrat members of the Congressional appropriations committees. Pulling together this coalition of support was recognized and applauded by NOWRA's Congressional champions.

Forming alliances with other organizations is an effective tool used to communicate our policy positions to federal decision makers because the message is conveyed by multiple stakeholders representing various perspectives and audiences. And with more than two million Americans living without basic access to safe drinking water and sanitation, and the investments required to close this access gap exceeding \$40 billion, we know we need more voices calling for increased resources for communities that lack access to clean water and adequate decentralized wastewater infrastructure. NOWRA is constantly working to develop new relationships we hope will lead to a coalition of stakeholders able to secure the support necessary to close the access gap.

For example, following the EPA's Decentralized Wastewater Management Memorandum of Understanding Partnership summit in December, NOWRA sat down with representatives from Dig Deep and the International Association of Plumbing & Mechanical Officials (IAPMO) to brainstorm ways these organizations can partner with one another to maximize advocacy impact. As mentioned before, closing the access gap for clean water and sanitation is a big problem requiring the collective efforts of the broader decentralized wastewater community. By harnessing the separate but coordinated advocacy efforts of these organizations, and others in the future, we are confident we can bring about cost-effective and long-term solutions for people living with malfunctioning septic systems.

Tim Perrin is a Policy Advisor with Polsinelli PC.

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Addressing Wastewater Infrastructure Challenges in the Rural Alabama Black Belt

By Jillian Maxcy-Brown, Kevin D. White, Lacey Christian, Amal Bakchan, Rachel Chai, Mark A. Elliott, Mark O. Barnett, and Emily McGlohn

Introduction

In Alabama, approximately 645,000 households (35% of households) rely on onsite wastewater treatment systems (OWTS).¹ About 170,000 of these households are in the 17-county Black Belt Region (Photo 1).¹ The Black Belt has few centralized sewer systems, widespread rural poverty, and an abundance of Blackland Prairie soil—a shrink-swell vertisol clay. This soil series prevents conventional drainfields from functioning properly, which has resulted in a common sight of numerous failing septic systems and straight pipes (Photo 2). Although advanced systems could be appropriate in some locations, they are unaffordable for most households. Therefore, straight pipes are commonly used to surface discharge the household’s wastewater into nearby forest, creek, trenches, or other surfaces.^{2,3} Surveys of 700 unsewered households in Bibb, Wilcox, and Hale counties indicate that approximately 50% of unsewered homes have raw sewage in their yards, either from straight pipes or hydraulically

failing drainfields.^{4,5} Public health experts have recently completed cross-sectional studies of children and households in the region and found that 12% live in homes with straight pipes, and those relying on well water have an increased risk of pathogen exposure, likely from fecal contamination of groundwater.^{6,7}

These acute wastewater challenges have been on the forefront of national and international news, with visits from United Nations officials, U.S. Environmental Protection Agency representatives, and Congressional representatives.^{8–12} In addition to the challenges of clay soils, low-incomes, and low population density, other major obstacles include limited local government capacity, challenges accessing funding, lack of county-wide or regional management entities, and disincentives for engineering firms to take on the small projects that these communities need.¹³

In 2018, stakeholders from universities, government agencies, congressional representatives, the Governor’s office, non-profit organizations, and industry formed



Photo 1. Soil conditions for onsite wastewater treatment systems in the Alabama Black Belt.



Photo 2. Examples of straight pipes and failing septic systems in the Black Belt Region of Alabama.

the Consortium for Alabama Rural Water and Wastewater Management (CARWW), with additional stakeholders continuing to join.¹⁴ The CARWW currently includes 22 partner organizations that collaborate on projects and discuss ongoing work to optimize our collective efforts to bring solutions to the residents of the Black Belt.

The CARWW’s approach to addressing the Black Belt Region’s wastewater issues has been termed the “Three-Legged Stool” (Photo 3), reflecting the need for three distinct approaches to the physical infrastructure. The first “leg” of the stool is to connect unsewered residents to existing municipal collection/treatment systems and upgrade those systems if needed. The second leg of the stool is to implement low operation and maintenance (O&M) decentralized sewer/treatment systems in the form of clusters (defined as 85+ homes within a 5-mile diameter, with a minimum density of 25 homes per square mile), connecting residents who cannot tie to existing municipal sewer. The last leg of the stool is to connect the remaining residents (not on municipal sewer or clustered sewer) to cost-effective individual onsite systems.

This article discusses some of this ongoing work, with a focus primarily on the projects of university partners. This article will also be followed by a future article that is more specifically focused on the development of management entities and life cycle costs associated with these systems.

Wastewater Needs Studies

In Alabama, there is no systematic inventory of which households have sewer connections and which rely on OWTS. We have estimated populations using OWTS by taking Census Bureau population data and subtracting the populations served as listed on National Pollutant Discharge Elimination System (NPDES) permits for the centralized sewer systems. To evaluate which wastewater

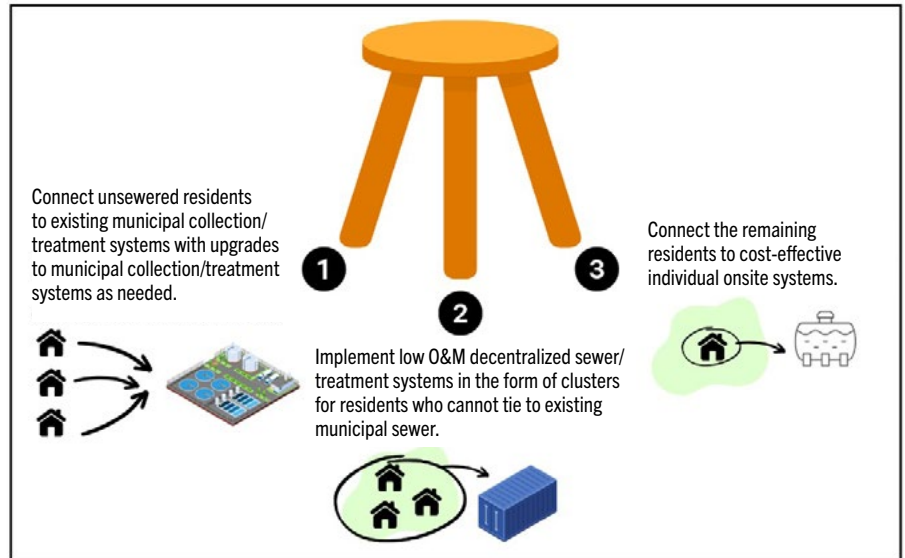


Photo 3. Schematic of the “Three-Legged Stool” approach to addressing wastewater challenges in Alabama’s Black Belt

infrastructure approaches should be implemented in the region, wastewater needs studies were conducted for each Black Belt county.

We estimated the location of residences, sewer service areas of existing wastewater utilities, and soil suitability for conventional septic tanks with drainfields. This information was used to determine which residences are not connected to centralized sewer systems and evaluate which “Three-Legged Stool” approach to wastewater infrastructure was most appropriate. For example, clusters of households within six miles of an existing sewer system were considered reasonably close to be connected to that system via liquid-only sewer. There will need to be consideration for available permitted capacities at existing centralized treatment systems and whether the management entities are willing to provide service to new customers. We proposed that clusters more than six miles from existing sewer would require their own decentralized clustered treatment system. The remaining households that are outside of identified clusters will require OWTS and we determined preliminary estimates of OWTS type

based on United States Department of Agriculture (USDA) soil maps.

Wastewater needs studies have been completed for 16 of the 17 Black Belt counties: Barbour, Bullock, Butler, Choctaw, Crenshaw, Dallas, Greene, Hale, Lowndes, Macon, Marengo, Perry, Pike, Russell, Sumter, and Wilcox. Montgomery County was excluded from the needs study because although it is within the Black Belt region, it is urbanized and largely sewer. An example of the maps generated by this study are shown in Photo 4. According to our estimates from NPDES permits, 51% of residents in the 16 counties currently have access to a managed wastewater service (a sewer connection). Following the suggested plan to provide service to each of the identified population clusters would lead to an increase of more than 85% of residents connected to wastewater service for an estimated cost of \$689 million. This leaves less than 15% of residents in need of OWTS. This plan significantly incorporates decentralized infrastructure to solve rural wastewater issues across a multi-county region; a unique paradigm for wastewater management in Alabama and most of the U.S. Once

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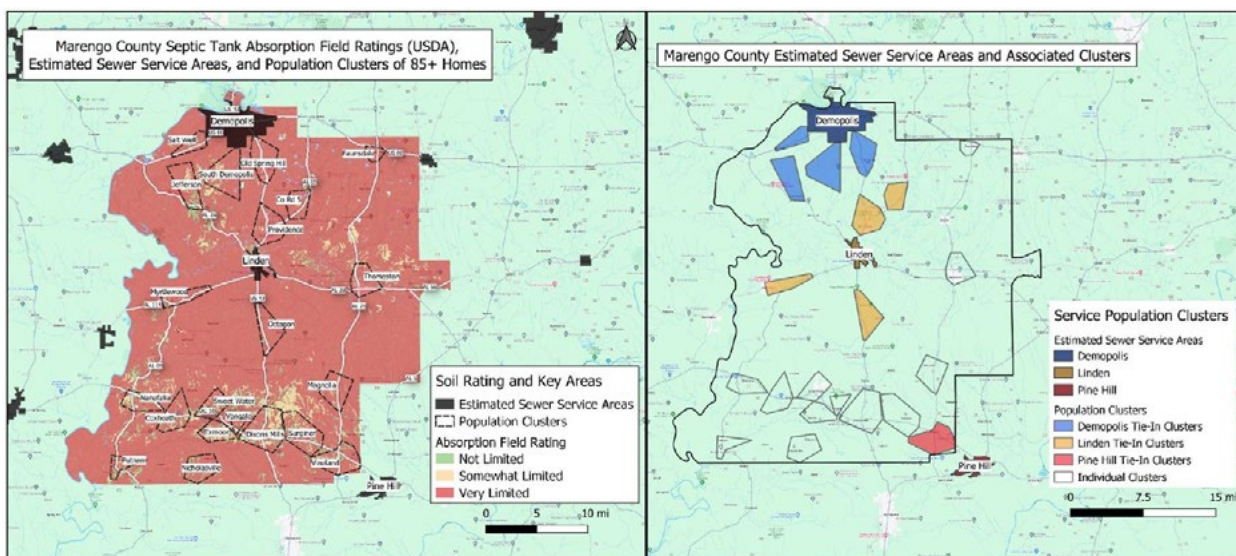


Photo 4. Example Wastewater Needs Study for Marengo County, Alabama.

fully completed, results from the wastewater needs study will be utilized to inform funding and planning of wastewater infrastructure projects in the Black Belt region.

Black Belt Wastewater Unincorporated Program (BBWUP) in Lowndes County, Alabama

The wastewater conditions in Lowndes County have drawn the most attention.^{8–12,15} As a response, key personnel from the Alabama Department of Public Health (ADPH) formed a non-profit organization, the Lowndes County Unincorporated Wastewater Program, which was later expanded and renamed the Black Belt Unincorporated Wastewater Program (BBUWP).¹⁶ The BBUWP aims to provide a flagship program to serve as an example for the installation of OWTS within the Alabama Black Belt.

This is a pilot program to install OWTS for homes in Lowndes County, AL, with funding from ADPH, USDA, Lixil Americas, and the International Association of Plumbing and Mechanical Officials (IAPMO). Selected low-income property owners

for the pilot program pay a monthly fee of \$20 for the system’s operation and maintenance (the previously required \$500–\$1000 upfront fee for each home has since been discontinued). The need for conventional or advanced treatment systems is determined by soil tests conducted by the ADPH Bureau of Environmental Services. In addition to OWTS, selected homeowners received low-flow fixtures donated by Lixil Americas and free installation of those fixtures by IAPMO. Phase 1 of the pilot program aims to provide functional onsite wastewater treatment systems to 100 homes. BBUWP has received more than 200 applications for this program. Phase 2 of the pilot will continue providing onsite systems to property owners based on available funding and need.

Pilot Project at the Auburn University Rural Studio in Newbern, Alabama

Our team is in the process of installing a modular, clustered wastewater system (liquid-only sewer and recirculating media treatment) at Rural Studio, an off-campus design-build program of Auburn University’s

Architecture Program in Newbern, Alabama (Photo 5). It will expand to be a clustered system for the town and surrounding area (up to 180 connections) and serve as a pilot system for decentralized clustered wastewater management in the Black Belt. Phase 1 (Photo 6) of this project will connect the Rural Studio campus to the treatment system. After onboarding an owner and operator, Phase 2 of the project will involve connecting buildings in nearby downtown Newbern, and Phases 3 and 4 will include the connection of local residences. The modular system will be expanded as needed with the connection of more residences. There is an ongoing effort to engage with the local community about the project and the potential for their involvement through informational signage, community meetings, and field trips. Researchers at the University of North Carolina at Chapel Hill are also sampling to quantify the effect of the treatment system on straight pipes and fecal pathogens in the local environment.

This project is funded by the Columbia World Projects¹⁷ and the Alabama Department of Environmental Management (ADEM,



Photo 5. Modular wastewater treatment system installation at Rural Studio in Newbern, AL.

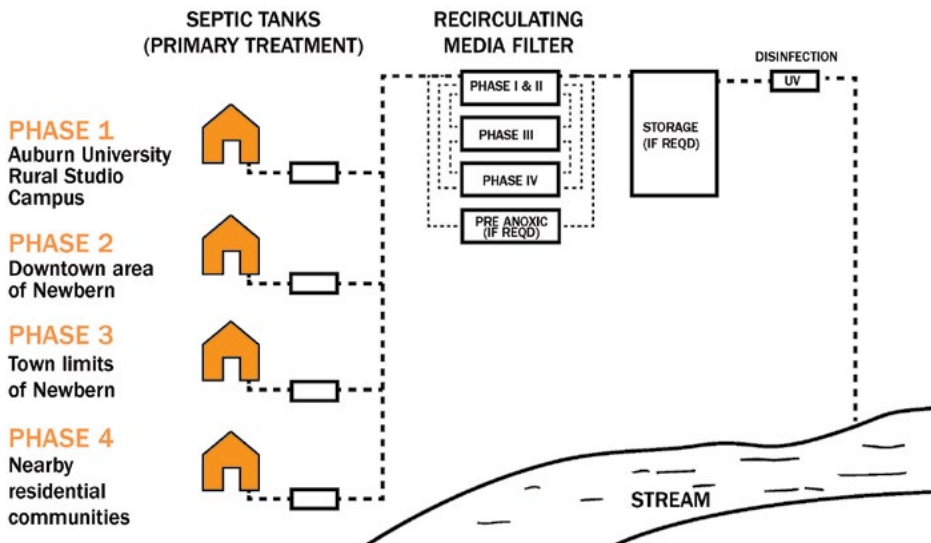


Photo 6. Phasing schematic of the Pilot Program in Newbern, AL.

through American Rescue Plan Act funds). We are actively navigating the process of establishing a responsible management entity to operate and maintain this system long-term.

How-To Guide for Rural Wastewater Management

The information and resources (personnel, expertise, funding, regulations, appropriate technologies, etc.) needed to address wastewater challenges are often scattered among a variety of sources and

written for experts in specific fields. Challenges identifying, accessing, and interpreting this information are major limitations for the local actors exploring potential solutions for their wastewater challenges. With funding from the EPA through a grant for “Reinventing Rural Wastewater Management”, we are developing a how-to guide to serve as a one-stop resource for local residents.

The guide begins with the importance of proper wastewater management and explains the main methodologies used for managing

wastewater in the U.S. (traditional municipal-type network systems, decentralized cluster-type systems, and onsite individual-type systems). We explore potential options for establishing local and/or regional responsible management entities and their responsibilities. The guide includes an overview of key ordinances and legal considerations for wastewater systems. We also provide information on potential funding sources for communities and individual homeowners, and suggestions for engaging with other local residents through community education and outreach efforts. The guide’s appendix includes handouts that could be distributed to communities, as well as a curriculum that can be incorporated in local K-12 schools.

Conclusions

Our team is working on a multi-faceted approach to address the many wastewater infrastructure challenges in the Alabama Black Belt. We plan to finalize the wastewater needs studies and how-to guide for public access in the next few months. As the BBUWP and Pilot System at Auburn University Rural Studio continue to be developed, we welcome anyone interested in visiting these systems. This article is intended to provide a background overview for some of our ongoing efforts and provide the context for an upcoming article in the future issue of NOWRA’s *Onsite Journal*. The upcoming article will go more in-depth on our work to evaluate the development of responsible management entities and analyze life cycle costs associated with various types of decentralized wastewater systems.

*For any questions or additional information regarding this article, please contact **Jillian Maxcy-Brown** at jmaxcybrown@crimson.ua.edu.*

Endnotes and Author Bios on page 18

Endnotes

1. Maxcy-Brown, J. Wastewater Access and Affordability Challenges in the U.S.: The Current Situation and Proposed Solutions for Equitable Access to Safely Managed Sanitation, The University of Alabama, 2023.
2. Maxcy-Brown, J.; Elliott, M. A.; Krometis, L. A.; White, K. D.; Brown, J.; Lall, U. Making Waves: Right in Our Backyard- Surface Discharge of Untreated Wastewater from Homes in the United States. *Water Res.* **2021**, *190*, 116647. <https://doi.org/10.1016/j.watres.2020.116647>.
3. Maxcy-Brown, J.; Capone, D.; Elliott, M. A. Characterizing the Nature and Extent of Access to Unsafely Managed Sanitation in the United States. *Nat. Water* **2023**, *1* (11), 915–928. <https://doi.org/10.1038/s44221-023-00157-7>.
4. Elliott, M.; White, K.; Jones, R.; Das, P.; Price, M.; Stevens, Z.; Lu, Y. Surface Discharge of Raw Wastewater among Unsewered Homes in Central Alabama <https://www.epa.gov/septic/surface-discharge-raw-wastewater-among-unsewered-homes-central-alabama> (accessed Aug 10, 2020).
5. White, K.; Jones, R. *A Survey of Onsite Wastewater Systems in Bibb County, Alabama*; Montgomery, AL, 2006.
6. Poole, C.; Barker, T.; Bradbury, R.; Capone, D.; Chatham, A. H.; Handali, S.; Rodriguez, E.; Qvarnstrom, Y.; Brown, J. Cross-Sectional Study of Soil-Transmitted Helminthiasis in Black Belt Region of Alabama, USA. *Emerg. Infect. Dis.* **2023**, *29* (12), 2461. <https://doi.org/10.3201/EID2912.230751>.
7. Capone, D.; Bakare, T.; Barker, T.; Chatham, A. H.; Clark, R.; Coppertwaite, L.; Flemister, A.; Geason, R.; Hoos, E.; Kim, E.; Manoj, A.; Pomper, S.; Samodal, C.; Smith, S.; Poole, C.; Brown, J.; Bakare, T.; Barker, T.; Clark, R.; Coppertwaite, L.; Flemister, A.; Geason, R.; Hoos, E.; Kim, E.; Manoj, A.; Pomper, S.; Samodal, C.; Brown, J.; Hutson, A. Risk Factors for Enteric Pathogen Exposure among Children in Black Belt Region of Alabama, USA - Volume 29, Number 12—December 2023 - Emerging Infectious Diseases Journal - CDC. *Emerg. Infect. Dis.* **2023**, *29* (12). <https://doi.org/10.3201/EID2912.230780>.
8. Ballesteros, C. Alabama Has the Worst Poverty in the Developed World, U.N. Official Says. <https://www.newsweek.com/alabama-un-poverty-environmental-racism-743601#:~:text=Official Says,-Alabama Has the Worst Poverty in the Developed World,Official Says&text=Updated %7C A United Nations official,it in the developed world.> (accessed Aug 4, 2020).
9. United Nations. Statement on Visit to the USA, by Professor Philip Alston, United Nations Special Rapporteur on extreme poverty and human rights <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=22533> (accessed Aug 4, 2020).
10. Flowers, C. C. *Waste: One Woman's Fight Against America's Dirty Secret*; The New Press, 2020.
11. Flowers, C. C. In Alabama, Poverty and the Coronavirus Are a Double Blow <https://www.nytimes.com/2020/11/14/opinion/sunday/coronavirus-poverty-us.html> (accessed Apr 14, 2021).
12. United Nations. Report of the special rapporteur on the human right to safe drinking water and sanitation, Catarina De Albuquerque https://www2.ohchr.org/english/bodies/hrcouncil/docs/18session/A-HRC-18-33-Add4_en.pdf (accessed Aug 4, 2020).
13. Elliott, M. A.; Bakchan, A.; Maxcy-Brown, J.; D'Amato, V. A.; Hallahan, D.; White, K. D.; Stallman, C.; Bradley, S. Sustainable Wastewater Management for Underserved Communities Using Federal Infrastructure Funds: Barriers, Bottlenecks, and Tradeoffs. *Water Secur.* **2023**, *20*, 100152. <https://doi.org/10.1016/J.WASEC.2023.100152>.
14. CARWW. Consortium for Alabama Rural Water and Wastewater Management Website <https://ruralwastewater.southalabama.edu/> (accessed Dec 5, 2023).
15. Flowers, C. C. A County Where the Sewer Is Your Lawn <https://www.nytimes.com/2018/05/22/opinion/alabama-poverty-sewers.html> (accessed Jun 10, 2020).
16. BBUWP. Black Belt Unincorporated Wastewater Program Website <https://www.bbuwp.org/> (accessed Dec 5, 2023).
17. Columbia World Projects. Transforming Wastewater Infrastructure in the United States <https://worldprojects.columbia.edu/transforming-wastewater-infrastructure-united-states> (accessed May 20, 2021).

Author Bios

Jillian Maxcy-Brown, PhD (Contact Author) is a Postdoctoral Research Fellow in the Department of Civil, Construction and Environmental Engineering at the University of Alabama. Her work primarily focuses on addressing the equity challenges for water and wastewater access in underserved communities throughout the U.S. She is also currently serving as the vice-chair of NOWRA's Emerging Professionals Committee. See contact information on p. 17.

Kevin D. White, PhD, P.E., is Professor Emeritus and former Chairman of the Department of Civil Engineering at the University of South Alabama. Specializing in environmental engineering, his research has focused on small community and onsite wastewater systems, decentralized water and wastewater infrastructure, and constructed wetlands treatment systems for both wastewater and stormwater.

Lacey Christian is a Research Project Coordinator in the Department of Civil, Coastal, and Environmental Engineering at the University of South Alabama. She has an interest in applying innovative engineering solutions to cases of environmental inequity. Her current

focus is evaluating and identifying the current needs and appropriate solutions to the wastewater issues faced in the Alabama Black Belt.

Amal Bakchan, PhD, is an Assistant Professor in the Department of Construction Science at Texas A&M University. Amal's research primarily focuses on water and wastewater infrastructures, in the broad areas of socio-technical infrastructure systems management in extreme contexts (e.g., disasters, development crises); infrastructure resilience; regionalization of responsible management entities of decentralized systems in rural communities; and workforce development.

Rachel Chai is a Ph.D. candidate in the Systems Engineering program at the University of South Alabama focusing on lifecycle assessment for decentralized wastewater treatment systems. Drawing on her experience, her research applies systems thinking and civil engineering design toward finding innovative solutions in the Alabama Black Belt region under the guidance of Drs. Kevin White, Sean Walker, and Kaushik Venkiteswaran.

Mark A. Elliott, PhD, is Professor of Environmental Engineering in the Department of Civil, Construction and Environmental Engineering at the University of Alabama. His research focuses primarily on water and wastewater challenges in low-resources settings, membrane-based treatment, and wastewater management in rural Alabama.

Mark O. Barnett, PhD, P.E., is a Professor of Environmental Engineering in the Department of Civil and Environmental Engineering at Auburn University. He has over thirty years of national and international environmental engineering and science experience in industry, government, and academia ranging from water supply and sanitation in rural communities to nuclear waste disposal.

Emily McGlohn, AIA, NCARB, is an Associate Professor in the School of Architecture, Planning and Landscape Architecture at Auburn University. Dedicated to supporting architectural practice through design-build education, Emily teaches 3rd-Year Design Studio at the Rural Studio in Newbern, Alabama. Her work supports sustainable rural living in Alabama's Black Belt through housing affordability and sanitation research.



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2023 Onsite Wastewater Mega-Conference Wrap-Up

By Tricia Scott, NOWRA Board Member

The 2023 NOWRA Mega Conference was held October 23-25 in Hampton, Virginia. Over 700 attendees took part in education sessions, social functions, and field trips while connecting with professionals from every aspect of the decentralized wastewater industry. The theme for the conference was “Clean Water for Healthy Communities” and several of the presentations focused on sustainability and environmental justice issues.

This year marked the first year that NOWRA’s Emerging Professionals Committee (EPC) held a silent auction and raffle to raise funds for their scholarship. T-shirt sales also benefited the new program. The winners of the scholarships were Hsiang Yang (Gary) Shyu, University of South Florida, for his research on non-sewered sanitation systems for nutrient recovery from wastewater and Caleb Suchecki, Texas A & M University, for his graduate work in Biological and Agricultural Engineering with a focus on hydrology and wastewater practices. (See more information on the EPC on the next page.)

The opening general sessions of the conference were informative and offered a glimpse at where the decentralized wastewater industry is headed in the future.

Sherry Bradley gave the first keynote presentation, “Building Wastewater Infrastructure That Will Last Because People Matter.” She spoke about the challenges the Alabama State Department of Public Health faced helping residents in one of the poorest counties in the US get septic systems to replace open discharge to the land surface or unlined pits on the property. Regulators had to work

with communities and government agencies to create an innovative and effective process to not only get systems installed, but to ensure proper maintenance of the systems. The maintenance program for the new systems also has a component to prevent abuse of the systems. One of the biggest challenges was building community trust and communication. Her work included outreach to schools to teach children the importance of proper wastewater disposal. Additionally, she has recruited high school students and ladies church groups as paid workers to continue outreach efforts and verify systems are being used and operating properly. She continues to work to expand the program to more counties using the methods she developed.

The next keynote presentation was Lance Gregory’s “Small Steps Lead to Big Results.” Chesapeake Bay faces many unique challenges regarding decentralized wastewater systems. The bay itself has nutrient

issues which cause dead zones. The area is rocky and is divided into small lots, and many homeowners can’t afford to repair their systems. These issues are not strictly confined to poorer or rural areas. Virginia acknowledged they have a problem, but needed to find solutions. While money is needed to fix things, the scale of need determines how much money is required. In 2015, the term “wastewater islands” was coined to define the issue. The Virginia Institute of Marine Science collected

continued on page 22



Onsite | 2023
Hampton, Virginia
Wastewater
Mega-Conference



In addition to great presentations, education sessions, and field trips, 2023 Mega-Conference attendees had the opportunity to network at an event at the Virginia Air and Space Science Center.

2023 MEGA CONFERENCE WRAP-UP *(continued)*

and mapped wastewater data sets. A joint letter of agreement created the Wastewater Infrastructure Working Group (WWIWG) to help determine the needs of communities. In 2021, Virginia Senate Bill 1396 extended the WWIWG to operate through 2030, requiring them to conduct reporting and needs assessments. The bill also allowed an indemnification fund to be used for septic repair grants and loans. The group determined that setting eligibility based on an area's median income would be a much better measure than a percentage above the federal poverty guidelines. The Virginia DEQ received \$75 million for replacing septic, straight pipe, and sewer collection systems, but by October 2022 the money was already used. Virginia is not alone in trying to face or fix these issues. The lack of national regulations for onsite systems makes the issues tougher to

resolve. Talking to elected officials is a way to help. Virginia's wastewater needs assessment found a need of \$15.8 billion to fix their wastewater issues, and about \$5 billion of that is needed for onsite systems. This figure includes new construction, operation and maintenance, and repairs.

Next, the group heard a presentation from Dr. Andrew Sawyers, EPA's Director of Wastewater Management, about initiatives the EPA is working on to support onsite systems. The Infrastructure Investment and Jobs Act earmarks funding for wastewater infrastructure, including onsite wastewater infrastructure. The only way to achieve the goals of the act is through community partnerships. Many communities struggle with basic wastewater capacity. They need help applying for and leveraging State Revolving Fund support. Access to resources presents a

challenge, especially in communities with decreasing populations. Part of the EPA's strategy includes investing in financial resource centers and water technical assistance so these communities receive the right solutions for their needs now and in the future. When a community fixes their wastewater issues, it helps them in a multitude of other ways. The EPA continues to work on a variety of programs to increase workforce development, to educate onsite professionals and system owners, and to provide technical assistance to a variety of partners.

Tim Perrin from NOWRA's advocacy firm, Polsinelli, gave an overview of NOWRA's advocacy efforts over the past year. The current US political climate presents many challenges for any group trying to secure funding, and NOWRA is no exception. Through contact with policymakers,

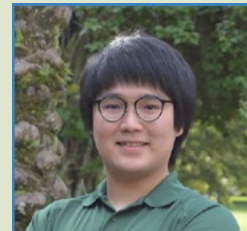
continued on page 24

Emerging Professionals Update

By Jonathan Kaiser, Emerging Professionals Committee Chair

The NOWRA Emerging Professionals Committee (EPC) had a strong presence at this past NOWRA Mega-Conference in Virginia. One of the highlights was awarding two prominent emerging professionals with a scholarship to pursue careers in the ever-expanding onsite wastewater industry. This initiative reflects NOWRA's commitment to nurturing talent and fostering the next generation of leaders in the field. The scholarships not only recognize academic excellence, but also aim to empower individuals with the resources needed to make meaningful contributions to the industry. To ensure continued scholarship funds in the future, the EPC held fundraising events such as merchandise sales and a silent auction. One hundred percent of the proceeds went to supplement the scholarship funds. The EPC also hosted engaging oral and poster competitions for emerging professionals, providing a platform for participants to showcase their innovative research and ideas. This innovation from the emerging professionals also served to educate and enlighten folks who have much more experience in the industry. Although the EPC had many successes at this past NOWRA Mega-Conference, the EPC continuously strives to expand outreach and cultivate more opportunities for young and emerging professionals. If you are interested in joining or supporting the EPC, please contact the NOWRA office at info@nowra.org.

EPC 2024 Scholarship Recipients



Hsiang Yang (Gary) Shyu
University of South Florida



Caleb Suchecki
Texas A & M University

EPC First Place Presentation Winners

Poster Presentation

Oral Presentation



Sara Wigginton, Ph.D.
MASSTC Microbiologist Health and Environ., Barnstable County Regional Government of Cape Cod



Hillary Yonce
Professional Hydrologist & Environ. Scientist, Tetra Tech



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2023 MEGA CONFERENCE WRAP-UP *(continued)*

NOWRA has built credibility and strengthened relationships with allies in Washington. A wastewater question will be added to future American Community Surveys, which will assist many agencies in their quest to establish the scope of wastewater needs nationwide. These efforts also expanded USDA's Decentralized Wastewater Systems Program and increased its funding. As we move forward, NOWRA is prioritizing adequately funding EPA's Decentralized Grant program to secure grants for low- and moderate-income households. While \$50 million per year has been authorized, this program has yet to be funded. The House of Representatives has appropriated \$5 million for this purpose for 2024. NOWRA is encouraging its members to contact their members of Congress to encourage the Appropriations Committee to accept the recommendations for funding. The USDA Decentralized Water Systems Grant Program provides grants and loans for rural residents and is authorized to receive up to \$20 million annually through fiscal year 2023; however, they only received \$5 million. NOWRA would like to see this program reauthorized for another five years. NOWRA is conducting outreach with the Biden administration in an effort to lay groundwork to implement decentralized wastewater system grant programs. Again, NOWRA encourages their members to contact lawmakers to communicate the need for programs that support decentralized wastewater and secure more federal funding.

The opening session concluded with a speech from NOWRA President Allison Blodig. She emphasized that the online learning platform NOWRA offers has a new look and more user-friendly format. There are also several new courses available, such as Introduction to Nitrogen Removal, Mound Design, and a homeowner education course developed under

a Rural Community Assistance Partnership (RCAP) grant. The new homeowner user guide and interactive online course is designed to teach homeowners how to care for and maintain their onsite system. NOWRA just received a new three-year \$800,000 grant from RCAP to create training in three areas, including design for difficult sites and operation and maintenance. She also announced that NOWRA is applying for an EPA grant for up to \$1 million over three years for workforce development, with a focus on marketing our industry and working with affiliates. Conference attendees were also encouraged to run for the NOWRA Board, join a committee, or chair a committee to get involved.

The opening session concluded with the annual award of NOWRA's Richard J Otis Industry Achievement Award, which is named in honor of NOWRA past-president and industry expert Richard Otis. NOWRA was pleased to present the 2023 Otis Award to Virginia native and NOWRA past-treasurer, Curtis Moore.

In addition to a variety of over 50 education sessions, the Mega-Conference also featured two off-site field trips to look at the latest technology and trends in the field, an off-site social event at the Virginia Air and Space Science Center, and held two contests for emerging professionals, a poster contest and a presentation contest. Sara Wigginton of Massachusetts Alternative Septic Technology Center and Ryan Homeyer of Brightwater Tools were the winners of the poster contest. Hilary Yonce of Tetra Tech and Gregory Rouland of Michigan State University were the winners of the presentation contest.

Thanks to all of the attendees, speakers, exhibitors, and volunteers who made the 2023 Mega-Conference a success.



Curtis Moore was awarded the 2023 Richard J. Otis Industry Achievement Award.



Two off-site field trips were offered to conference attendees.

[We hope to see you in Spokane, Washington, in October 2024!](#)

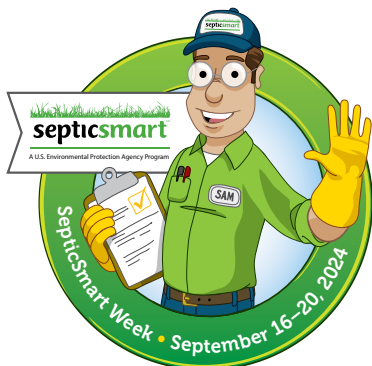
EPA MOU Renewal

On December 5 and 6, 2023, NOWRA representatives attended the renewal signing ceremony and meeting of the US EPA Memorandum of Understanding Partnership for Decentralized Wastewater Management. The ceremony and follow-up meeting was held at EPA Headquarters in Washington, D.C. NOWRA President Allison Blodig signed on behalf of NOWRA along with 24 other organizations. The MOU is renewed every three years. The partners agree to work together to facilitate information exchange on technology, collaborate to support training efforts, promote public awareness on septic system care and maintenance, and produce materials on decentralized systems. NOWRA is one of the original eight signatory organizations having first signed in 2005.



NOWRA President Allison Blodig signed the EPA MOU on behalf of NOWRA.

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NOWRA Participates in 2024 WWETT Show

The NOWRA National Backhoe Roe-D-Hoe championships were held recently in Indianapolis at the 2024 WWETT Show. We had 190 entrants test their backhoe skills through an obstacle course of basketballs, bowling pins, and golf balls. Five finalists and the Ohio state champion competed for the top three prizes. Congratulations to **Albert Breech from Lucasville, Ohio**, for winning first place with an incredible time of 59 seconds. Albert was also the Ohio state champion. He got to wear the Backhoe Roe-D-Hoe championship belt and walked away with \$1,000 in cash and a commemorative belt buckle.

Congratulations also goes out to our other top finishers: second place, Nathan Ramsay, Montana; third place, Mat Hagan, Tennessee. Honorable mentions: Chris Moody, Ohio; Adrian Keiper, Ohio; and Tyler Shaw, New York.

Check out more pictures and a video of the championship round on the NOWRA FaceBook page. Join us next year for the NOWRA National Backhoe Roe-D-Hoe championships at the WWETT Show in February 2025. We hope to have several state champions vying for the top prize and bragging rights.

In addition to the ever-popular Backhoe Roe-D-Hoe, NOWRA representatives also provided top-notch education during the Wednesday, January 24 Education Day. Annually, NOWRA and its Technical Practices Committee develops a slate of original presentations to educate the many members of the onsite wastewater industry who attend the WWETT Show.

Topics for 2024 included *How are OWTS Contaminants Transported and Treated Beneath the Soil Treatment Area*, *Design Considerations for Multiple Tank Wastewater Treatment Systems*, *Commercial System Design Considerations*, *Media Filters: Are They Right for You*, and *Designing with Constructability and Ease of Operation in Mind*.

In addition to the Education Session, NOWRA's Executive Director Tom Groves participated in a facilitated panel discussion on Trade Associations in the Wastewater Industry.

NOWRA values our relationship with Informa Markets and the WWETT Show and looks forward to participating in this one-of-a-kind event every year.



Albert Breech is congratulated by NOWRA Executive Director Tom Groves for winning first place in the 2024 Roe-D-Hoe championships.



NOWRA Executive Director Tom Groves (far right) participated in a facilitated panel discussion on Trade Associations in the Wastewater Industry at the 2024 WWETT Show.

Onsite Wastewater Treatment System Homeowner Education

START COURSE



This course is designed to help homeowners get the most out of their Onsite Wastewater Treatment System (OWTS). Select the Start button in the course header to get started, or select a topic in the outline below to jump to a specific section.

New Homeowner Training Available

Through a grant from US EPA and in partnership with the Rural Community Assistance Partnership (RCAP), the National Onsite Wastewater Recycling Association (NOWRA) has developed a training program for educating property owners with an onsite wastewater treatment system (OWTS). This course is designed to help homeowners get the most out of their Onsite Wastewater Treatment System (OWTS).

This interactive homeowner/public educational module is aimed at residential owners and the general public with best management practices to help keep their septic systems functioning properly. These practices focus on recycling water: cleaning wastewater and returning safe water to the water cycle with the goal of protecting human and environmental health in a cost-effective manner.

Concepts covered in this course include:

- The importance of wastewater treatment
- An overview of treatment in an onsite system
- Typical onsite system features
- Final treatment and dispersal
- Management, maintenance, safety, and system troubleshooting

While the training's target audience is property owners who have an onsite system, the concepts are also applicable to the general public, realtors, local health officials, and septic system professionals.

This course is **FREE** to users but requires the creation of an account on NOWRA's Online Learning Academy at <https://www.pathlms.com/nowra/courses/59159#>.

Questions about this course should be directed to NOWRA at info@nowra.org.

NOWRA CORPORATE MEMBERS

National Onsite Wastewater Recycling Association

Diamond Level



Gold Level



Silver Level

BioMicrobics, Inc.

Ecological Tanks

National Precast Concrete Association (NPCA)

Orenco Systems

Polylok

Bronze Level	Copper Level	Pewter Level
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 Imperial Industries
 Inspector Cameras, LLC
 MicroSepTec
 NSF International
 RioVation
 SJE Rhombus
 SludgeHammer Group, Ltd.

★ New corporate member in 2024

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Corporate Membership Benefits

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- *Onsite Journal* advertising discounts
- Individual NOWRA memberships
- Recognition in the industry
- Federal advocacy on your behalf

Advocacy Successes

1. NOWRA worked with Congress on the Infrastructure Investment and Jobs Act (H.R. 3684) that was signed into law by President Biden on November 15, 2021. The water infrastructure bill creates a Decentralized Wastewater Grant Program for the repair or replacement of failing or non-existent septic systems owned by low-income homeowners. The Act authorizes \$50 million of funding for each of the Fiscal Years 2022–2026, for a total of \$250 million.
2. NOWRA is working with EPA on implementation of legislation we sponsored which was passed into law as part of the 2018 Water Bill (America's Water Infrastructure Act of 2018) requiring EPA to create a Decentralized Technology Clearinghouse and to share information about the cost-effectiveness of decentralized systems with local governments and other groups. EPA must regularly report back to Congress about how they are supporting the increased use of decentralized systems.
3. NOWRA is monitoring the U.S. Census Bureau's efforts to include a "sewer or septic" question added to the Annual American Community Survey (ACS). This question was removed from the decennial Census after 1990. NOWRA worked with EPA to get them to submit a request to have this question included on the survey. In October 2018 the U.S. Census Bureau accepted the EPA proposal and the question is moving forward to the next stage of approval. This is on track for addition to 2025 ACS.

INDUSTRY NEWS

ELJEN CORPORATION, a veteran-managed wastewater and environmental products manufacturer, recently received its fifth consecutive HIRE Vets award. To celebrate the event, Eljen opened its headquarters to the other six 2023 Connecticut HIRE Vets award recipients. The event, hosted by Eljen, had Senator Blumenthal as the keynote speaker.

"The transition from active duty to civilian life is often so difficult for veterans and a big part of that is finding fulfilling and stable work. Young men and women go into the military because they want to serve their country and when they get out, that sense of purpose is what they need most. I was honored to join Eljen to celebrate their fifth consecutive HIRE Vets award. Eljen's commitment to hiring and supporting veterans is a shining example of what happens when a company steps up and does the right thing for veterans who sacrificed so much serving our country," said Senator Blumenthal.

"This award is a tremendous honor that truly reflects our appreciation of the hundreds of veterans who work at Eversource and we're proud to join Eljen Corporation and the other distinguished companies in this recognition," said Eversource Connecticut Operations President Steve Sullivan. "Our veterans serve with passion and pride, and their skills and experience add an important dimension to the work we do every day for our customers and communities. Veterans at Eversource and across the nation have put their lives on the line to protect our country, and it is an honor and a privilege to have these selfless men and women on our team."

The event brought together key leaders in the State and Federal government, veteran advocacy groups, and the companies that celebrate hiring, retraining, and retaining of our veteran workforce. "It is incredible to see the conversations and connections that the people in the room are making, it is a sign of more good things to come out of these companies who hire Veterans," says Jim King, President of Eljen. "This award is an affirmation that we are following our founder's (LTC Joe Glasser—ret., Air Force) mission of helping and employing veterans. He would be proud."

Learning Just Got SIMPLE!

New Courses Now Available at NOWRA's Learning Academy

ONSITE A TO Z

An overview of onsite wastewater treatment provides a foundation of relevant courses for many professionals. Topics include onsite wastewater basics, O&M, and soil evaluation and treatment. Ideal for new employees, regulatory professionals and students.

INSTALLER TRAINING

Ideal for new installers. This course includes modules on topics such as safety, planning, soil and site concepts, distribution of effluent, dosing and controls, advanced treatment, and soil treatment.

TROUBLESHOOTING

Ideal for designers, installers, regulators, service providers and more! No matter what our role is

in the decentralized industry, we are sometimes faced with systems experiencing problems or out-of-ordinary situations. This course walks through a typical treatment train starting with the flow coming from the structure and then walks through component troubleshooting including septic tanks, pumps and controls, soils, media filters, aerobic treatment units and finally soil treatment units.

DESIGN COURSE

NOWRA has developed an additional nine NEW courses just released in late 2023 in the critical area of design of decentralized systems. These courses lay the groundwork for design and will be expanded over the next several years. This course includes

modules on topics such as aerobic treatment units, soil properties, soil water movement, making infiltrative decisions, and pressure distribution.

TECHNICAL SESSIONS

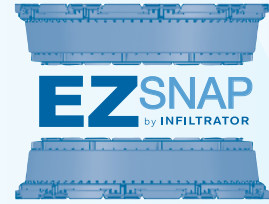
NOWRA has developed an additional twelve NEW courses just released in late 2023 from presentations at recent Onsite Mega-Conferences. These courses cover a wide variety of topics and were selected due to their continued relevancy to the decentralized industry. Modules include topics such as planning for sustainability, research updates, reuse, brewery waste treatment, nitrogen balance, urine diversion, and more.

Participants can select class length based on continuing education requirements, the subject matter, or how much time they have to commit to training.

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