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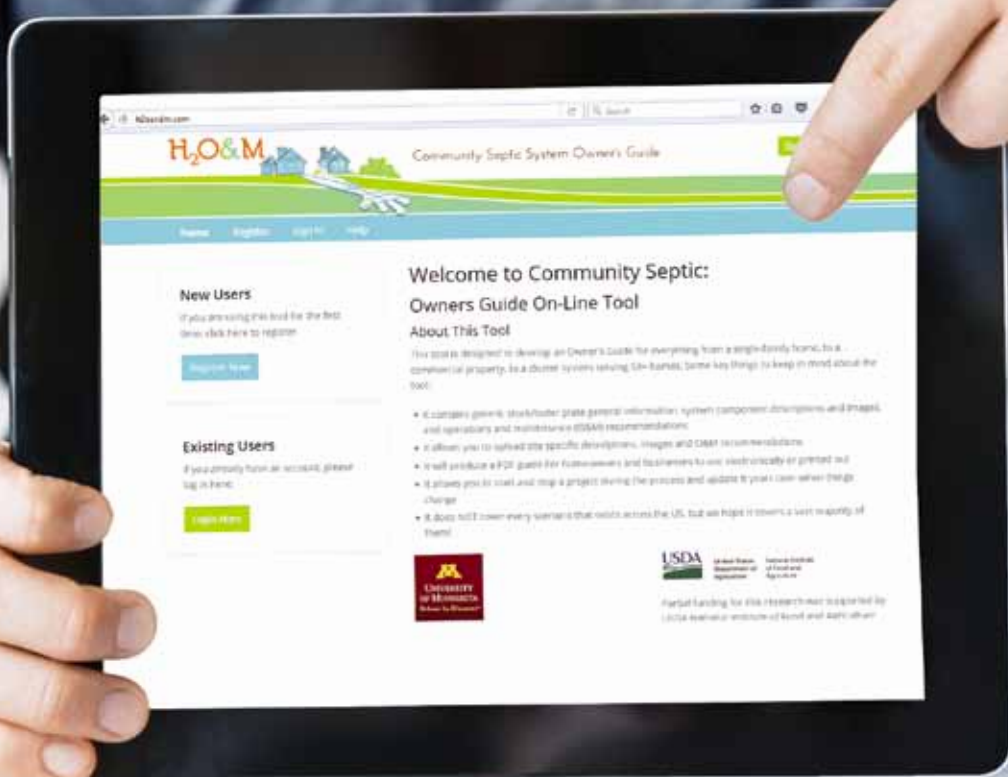
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The official publication of the National Onsite
Wastewater Recycling Association

THE Onsite Journal

Spring 2016



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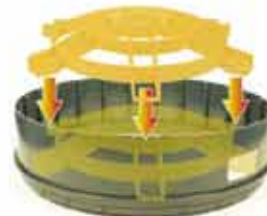


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on the cover

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Furthering Our Cause




HAPPY 2016! As we begin the New Year, NOWRA would like to thank our membership and supporters for a very successful Onsite Wastewater Mega-Conference this past November. We had over 600 attendees, 60+ educational sessions and 44 exhibitors at Virginia Beach, which was our biggest conference in quite a while. The first ever collaboration between NOWRA, SORA, NAWT and VOWRA was a great success for all involved. We hope to continue this collaboration in the future, as it was great to see all the groups working together. A special thank-you to our State Affiliates and Business Benefit Partners (BBP's) for their invaluable support.

As you read this, we are preparing to conduct training at the Water and Wastewater Equipment, Treatment and Transport (WWETT) Show, which will be held at the Indiana Convention Center from February 17 to 20, 2016, in Indianapolis. This is another great opportunity for our members to receive valuable training and meet with others in our industry. Thank you to COLE Publishing for inviting us to conduct this training again.

Our plans for 2016 include continued emphasis on our federal lobbying program, along with emphasis at a State level. We are in the process of forming a Decentralized Caucus in the House of Representatives, which we hope will further our interests nationally. Also, we are in the process of rolling out a software package called Muster, which allows state groups to effectively contact and influence elected representatives at the local, state and federal levels. This program should be a great help for our State Affiliates.

Another goal for 2016 is to begin the rollout of our online training program, which we hope will be very beneficial for our members. And don't forget our 2016 Conference, which will be held October 26 to 29 in Reno, Nevada. The Florida Onsite Wastewater Association (FOWA) is partnering with us for this conference, as well as SORA and NAW .

Thank you for your involvement with NOWRA. We continue to do our best to represent you and our industry. .

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Mega-Conference, Mega-Success

By Meg Crane



An attendee visits the Virginia Aquarium & Marine Science Center, as a part of the Conference.



Discussing industry issues in the Exhibit Hall.



Attendees take in one of the many educational sessions.



Roe-D-Hoe champion

FOR the first time, the National Onsite Wastewater Recycling Association (NOWRA), the National Association of Wastewater Technicians (NAWT), the State Onsite Regulators Alliance (SORA) and the Virginia Onsite Wastewater Recycling Association (VOWRA) joined forces. The four groups co-hosted the 2015 Onsite Wastewater Mega-Conference in November 2015, and it was a bigger success than anyone expected it to be.

The 623 registrants showed up for 60 educational sessions, 44 exhibitors and two field trips. All four groups agree that had they not partnered, those numbers would be much lower.

Mega-Conference Chair Kathy Maguire says working with four different organizations to plan such a huge event had its challenges, but it also was a good learning opportunity. "Each partner learned something from the processes of the other partners," Maguire says. She learned some new tricks for running registration desks more smoothly and more efficiently monitoring rooms. As the Chair, she says she was grateful to the other event organizers for working so well together.

"I feel all shared the load of planning and orchestrating such a large conference. It would have been more challenging for each organization to do a similar conference

solo while at the same time trying to offer the attendees a diverse opportunity for training," says VOWRA President John Powell.

He says joining forces gave attendees a great deal; they were able to access multiple training sessions and field trips, plus a wide variety of vendors, all at the same great venue, Virginia Beach Convention Center.

"It was gratifying to see the response," says Eric Casey, Executive Director of NOWRA.

"A few years ago there was very little cooperation between most onsite organizations. There was a lot of zero sum thinking," says Casey. He says that the "if you win, I lose" attitude has been changing, and this conference is further evidence that cooperative efforts can be quite productive.

"The combined effect of that cooperation has resulted in a better conference for everybody," he says. "It was an extremely smooth event considering we had four different organizations and four different cultures from those organizations."

Open communication, quickly solving problems before they turned into big issues and having regular meetings are a few of the keys to the groups' successful collaboration. "Each of the groups had to do less work and we got more benefit," Casey adds.

Attendees got more benefits, as well. Casey says there was a broader range of educational topics for everyone to choose from. In past years, NOWRA has offered three educational tracks. The Mega-Conference had six. "The real challenge for some people was finding out which topics in a specific time slot was most interesting to them," says Casey.

One of three complaints NOWRA President Gregory Graves heard at the conference was that there were too many great educational sessions to choose from. The second was that the lunch line was too long on the first day, so it took a while to get through. Graves says both were good problems to have.



Testing new equipment in the Exhibit Hall.

A third complaint was that the hours of the trade show were not long enough. "The trade show portion was extremely strong and well attended," says Graves. The four associations together were able to bring in 44 exhibitors, giving attendees a lot to look at.

Graves says NOWRA usually partners with a state affiliate group for its conferences. Adding another two groups worked well enough that he hopes to do it again. He adds that one of the major benefits was that it brought in people from sectors who might not usually be represented at a NOWRA conference. There were people with strong technical skills, regulators and decision makers. With these added participants, different discussions than usually go on at NOWRA conferences were sparked.

That was one of the major benefits of attending the conference for Trapper Davis, Owner of Coastal Plains Environmental Group. "I had some wonderful discussions with a number of regulators from other states," says Davis. Virginia is currently seeing licensing coming into the onsite field and attending the conference allowed him to speak with people from other states who have already gone through the process. It also gave him a chance to catch up with people who he had not seen in a long time. He says every vendor his business works with was at the trade show, so he had the opportunity to speak face-to-face with every single one.

Amanda Renner, Senior Coordinator Regulatory Affairs and Inquiries for Bio-Microbics, Inc. also says it was fantastic to have the chance to speak in person with people her company works with. "I am involved in both sales and regulatory with my company. The ability to speak with new and existing customers, quote projects and in the next hour speak to a key regulator about an upcoming regulatory solution was remarkable," Renner says.

Bio-Microbics sent four employees from its corporate office as well as its local distributor because of the diversity of the conference. Renner was also on the planning committee for the conference. She says this gave her some insight into how successful the event would be, but even so, her expectations were exceeded and from an attendee perspective, the conference ran seamlessly.

Tom Ferrero, Secretary of NAWT, was his association's lead on the conference. He says working with the other associations was an excellent experience, one that he looks forward to repeating.

"These people really worked overtime," says Ferrero about his co-collaborators from the other associations. He says it was great that they got together to put on the conference because all four associations have the same goal: to educate. And that's just what they did.

NAWT ran a training session for operators of septage treatment facilities, which was the sixth time it has done so over the past decade. "The participants are always interested, they ask good questions and they come away with some knowledge," Ferrero says.

In general, he says conference attendees left with more knowledge than they would have if the four association's had not gotten together for the Mega-Conference. He knows some people in the industry would travel for one or two of the associations' conference, but it's unlikely anyone would go to four separate venues in a year. Getting together like they did allowed attendees to pack in learnings from four different groups without having extra travel expenses.

As much work as this was, NOWRA isn't taking a break to bask in the success of its conference. Graves says they're working out details on collaborating with several associations for next year's conference, which will take place October 26 to 29 in Reno, Nevada. 🌍



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NOWRA Casts Doubt on PNAS Technical Paper



IN the August 2015 issue of Proceedings of the National Academy of Science (PNAS), a technical paper was included claiming that septic systems were the main contributor to fecal coliform in the rivers of the southern portion of Michigan. While the paper's conclusions have been widely reported in the media, many NOWRA members from the academic and engineering sectors found the white paper research methodology, results and conclusions to be seriously flawed.

Under the auspices of NOWRA's Technical Practices Committee, Dr. Sara Heger and Dr. John Buchanan provided technical responses highlighting the paper's flaws, and sent them to the PNAS Editorial Board for inclusion in their publication. Both responses were denied publication in PNAS by the Editorial Board.

NOWRA also provided a response, which was also denied publication. Additionally, NOWRA has submitted questions to the paper's lead author, but as of press time, those questions remain

remain

Based on this information, the NOWRA Board has established a Task Group to respond to the paper. One of the first steps of the task group is to share NOWRA's response in this magazine and other media. The next step will be to develop a white paper to address this issue. NOWRA's letter to PNAS follows:

NOWRA's response to the *Proceedings of the National Academy of Science (PNAS)* on the Michigan Watershed Study, printed August 18, 2015.

Full Title: Septic systems are not the only source of bacterial pollution to the Michigan Rivers.

The National Onsite Wastewater Recycling Association (NOWRA) is the largest organization within the USA dedicated to educating and representing members within the onsite and decentralized industry. Our members include educators, regulators, engineers, contractors, manufacturers, suppliers, service providers, and other parties dedicated to protecting water resources and the environment.

1. Several of our members have provided input on the deficiencies of the article "Linking fecal bacteria in rivers to landscape, geochemical, hydrologic factors and sources at the basin scale"¹. As an organization, we would like to provide additional information that was not addressed clearly in the aforementioned article.
2. The primary conclusion of this article that pollution from septic system discharges is likely more important than previously realized is invalid. The following flawed scientific methods used by the authors do not support a proof that septic systems are the primary source of pollution to these streams:
3. Using single samples instead of a mass balance over a period of time to draw this conclusion is bad science. Also, the small number of samples is not significant in making the conclusions that the authors made in this article.
4. The authors did not provide a sound scientific basis in excluding wastewater treatment plants (WWTPs) as the source of this pollution, even though the Michigan Department of Environmental Quality has documented significant pollution from combined sewer overflows, sanitary sewage overflows and wastewater retention basin discharges.

The authors have wrongly identified *Bacteroides thetaiotaomicron* (*B. theta*) as only existing in humans, while it also exists in the intestinal microflora of mice and other rodents.

As an organization of professionals in the onsite wastewater treatment business, we appreciate the support the authors suggest for better management programs for onsite systems. However, based upon the author's methodology we do not agree that onsite, soil-based wastewater treatment systems are the likely source of the pollution identified in this study. The study does nothing to trace the contamination found to the sources suggested.

As an organization, we profoundly support the U.S. E.P.A. when they reported to Congress back in 1997 that "Properly managed decentralized wastewater systems can provide the treatment necessary to protect public health and meet water quality standards, just as well as centralized systems."²

Reference List

1. Verhoughstraete M, Martin S, Kendall A, Hyndman D, Rose J (2015) Linking fecal bacteria in rivers to landscape, geochemical, and hydrologic factors and sources at the basin scale. PNAS. Vol. 112, No. 33, 10419-10424.
2. Response to Congress on Use of Decentralized Wastewater Treatment Systems, U.S. Environmental Protection Agency, April, 1997

For more information on this topic and how you can get involved, contact the NOWRA office.

A New Tool to Create Customized Owners' Guides

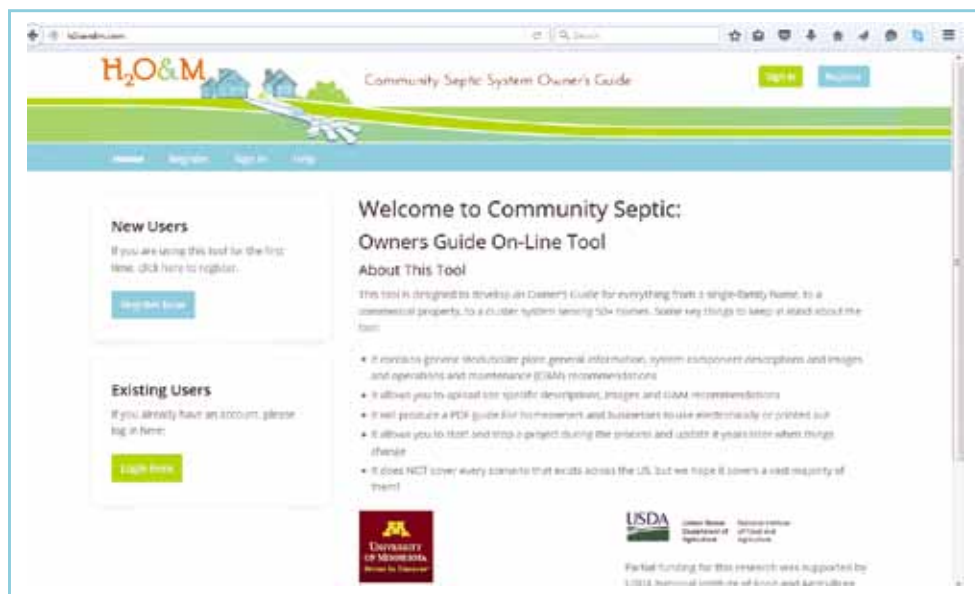
By Sara Heger, University of Minnesota

A U.S. Department of Agriculture (USDA) grant funded project, led by the University of Minnesota (UMN), has developed a tool available at the website H2OandM.com. The owners' guides created using this tool provide users with fundamental information about the operation and management of various wastewater management systems.

Think about it—when was the last time you spent \$5,000 to \$30,000 (or more!) for a new gadget around your house and did not get an owners' manual? Although there is a lot of general information out there about do's and don'ts, the information is typically not customized to the site and user.

The tool is a web-interface that allows an individual to produce an expert-driven and locally-customized manual (electronic or hard-copy) Community System Owners' Guide (CSOG) for any single family to cluster soil-based wastewater treatment system in America. A consultant, engineer, septic professional, facilitator, or even an educated community member, can use this tool to produce a management plan for either a new or existing onsite wastewater treatment system (OWTS).

The developer of any given CSOG is able to assemble a professionally designed guide by selecting situation-specific boilerplate language and graphics, and inserting customized content to integrate system-specific permit and ordinance



The H2O&M.com welcome and login screen.

requirements. Key partnerships in Arizona, Iowa, Michigan, Minnesota and North Carolina, along with the U.S. Environmental Protection Agency, were utilized to assure this project delivers a nationally relevant and locally customizable tool to facilitate the development of Community System Owners' Guides.

This tool will work for a community scale project or a single family home. The final customized product takes the form of a PDF that is smartphone/tablet compatible, ready for professional printing.

Each Community System Owners' Guide is customized to the local site, system and regulatory requirements, and identifies the following key aspects:

1. The specific treatment train components and how they work, in addition to the service activities and frequencies.
2. The management issues, challenges and operations plan each system has identified and implemented to ensure long-term, effective wastewater treatment.

3. The operational responsibilities each system user must accept to protect the infrastructure from premature failure.

A septic system professional creates an account where all their projects are stored. This tool and the manual have many benefits to professionals in the septic system industry:

- Value added information to customer.
- Professional/third party recommendations on O&M activities and home management tips.
- The ability to update the O&M manuals as the system or user changes.
- The capability to create templates for commonly designed, installed or serviced systems.

Tool users, including septic professionals, community leaders, regulators or assistance organization representatives, are able to update the manual with changes in management details such as rate structure, number of connections, additional treatment train components, etc. These ►► page10

Project Timeline

The tool was released in the fall of 2015 and will be disseminated via a webcast and presentations at numerous regional and national conferences in 2016. Please contact Sara Heger at sheger@umn.edu for more information or visit **H2OandM.com** or **septic.umn.edu**.

updates or changes can only be made by the developer of the original guide.

Using the web interface the user starts by creating an account. Once an account is created the user will come to their homepage where they can search to see if an O&M manual exists for a given property, open up an existing project, create a new project or manage their image library. Users can not edit another developer's manual, however they can view it and access contact information.

Projects can also be reordered, edited or deleted by going under the user's

account. Using the web interface the user enters specific site and system information and the tool creates an electronic or hard copy O&M manual which includes stock image and text along with the customized information entered by the professional. The tool walks the user through a system starting with the interior plumbing, then followed by the collection system, tanks, advanced treatment and soil treatment and dispersal.

The project team envisions the ability for interested parties to learn a great deal about the status of systems and their management across the country through

a back-end analysis of the customized data entered for the development of each CSOG. Any analysis of this type is not part of this project, but from the database perspective, all private information such as names, addresses and phone numbers will be kept private. When the guides are provided to the public the developers of the tool must consider that some of the information may become public. ●

.....
Dr. Sara Heeger is an engineer, researcher and instructor in the Onsite Sewage Treatment Program in the Water Resources Center at the University of Minnesota. Since 1998, she has been providing education and technical assistance to homeowners, small communities, onsite professionals and local units of government regarding onsite wastewater treatment. Sara coordinates the research program at the UMN and is currently serving as the principle investigator on grants to create online owners' guides and evaluate rest stops served by septic systems.

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New Opportunities in Decentralized/Distributed Wastewater Treatment and Reuse

By Lynn E. Broaddus, Broadview Collaborative, Inc.

It was only a few years ago that bringing up the topic of distributed or decentralized water infrastructure among water professionals was a quick way to end a conversation, or to get a lecture on centralized treatment as the forward march of civilization. But in 2014 all that changed.

That was the year of two independently organized but equally important events focused on erasing barriers for distributed water infrastructure for urban applications. Up until then there were a handful of avant-garde projects, such as the famed Solaire building in the Battery Park City neighborhood of New York City that incorporates on-site water treatment and reuse inside of buildings.

However, virtually no one was looking at how to incorporate on-site technologies on a more robust scale. Then, in 2014, San Francisco, Calif., hosted a small meeting of public agencies from around the country who shared their interest in building-scale water treatment technologies. As luck would have it, at the same time The Johnson Foundation at Wingspread, as part of the six-year *Charting New Waters* initiative that I was leading, convened about two dozen experts from a variety of fields to examine the opportunity for strategically down-sizing water infrastructure. The reports issued from each of these meetings put it out there for everyone to see: the future city embraces on-site!

There are a number of drivers behind this new interest in high-tech on-site treatment, but they all start with sustainability. For some communities, energy and greenhouse gas emissions are a central concern. Water is heavy, so pumping it long distances has a big energy price tag. Water and wastewater utilities spend an average of 30 to 35 percent of their budgets on energy¹, but keeping water local can reduce that burden and help communities control the costs while also meeting climate goals.

Similarly, there is a tremendous cost to maintaining and expanding the infrastructure that is currently in place. The failing infrastructure we constantly hear about is, in many cases, overbuilt, especially in cities that are experiencing increased conservation, declining populations, or both. Rather than break the bank rebuilding miles of leaking pipes, some communities are realizing that it may make more sense to bring the treatment capacity out to the community. By treating and re-using on-site, communities also are able to stretch water supplies, an increasingly important need in regions that have over-pumped their aquifers or are having more frequent droughts.

In other locations, a desire for resiliency is driving the conversation. They have learned by watching colleagues in other cities deal with the stress of losing their one facility to a natural or human-made disaster. Most wastewater treatment plants are sited to take advantage of gravity, meaning that they are along shorelines and wetlands. With heavier storms and rising sea levels, they are especially prone to flooding. The Passaic Valley Sewer Authority, located in New Jersey, learned this the hard way when the downpours from Hurricane Sandy flooded the sewerage treatment plant, knocking out sanitation for 1.4 million people. It took nearly six weeks and more than \$100 million to fully restore.

Human-caused disasters can have similar impact. It was only two years ago that Charleston, W.Va., lost its water supply due to a chemical leak upstream from the intake point. In both of these cases, distributed facilities could have eased the burden. Actually, the New York / New Jersey area is a case in point. One private company, Natural Systems Utilities, managed 80 distributed wastewater treatment operations that were hit by Sandy. While the Passaic Valley plant left people without service

We are already starting to see increased demand for these systems across the country, and it's just a matter of time before the systems are just as turn-key as any residential septic system.



The Bullitt Center, located in Seattle, is the world's greenest commercial building. It uses gravity-fed composting toilets and the building runs entirely off of rainwater. Photo courtesy of Nic Lehoux/The Bullitt Center.

►► page12

for weeks, the distributed systems were all operational within 24 hours largely because they didn't have to be sited in flood zones.

These aren't just ideas and reports; projects are springing up throughout the country. Leading the pack is San Francisco, which sent a jolt through the industry last summer when it passed an ordinance requiring water recycling and on-site re-use for all new buildings over 250,000 square feet, an analysis for all buildings over 40,000 square feet, and that new buildings over 40,000 square feet must be dual piped. As of 2016, buildings that capture rainwater, foundation water, and/or grey water for non-potable use are starting to come on line, with future plans for black water treatment and on-site re-use.

In communities like Austin, Tex., it's becoming more and more common to see homes that are going off-grid for water, providing all of their home's water needs from rainwater harvest. Private firms, not unlike many of NOWRA's members, design and build the systems which include increasingly fine filters and ultraviolet or ozone treatment for potable use. Many customers find that they prefer rainwater's qualities and, because the water is purified on-site, there

is less risk that the water has been re-contaminated from compromised points in the distribution system.

Really pushing the limits of what's possible is the Bullitt Center, a living building which serves as home to the Bullitt Foundation. At six stories in the heart of Seattle, Wash., it is the tallest building to use gravity-fed composting toilets. The bio-solids compost on-site and are eventually mixed with wood chips and taken off-site. The small amount of leachate produced by the system is trucked to the county's facility for treatment. The toilets, which use only about a cup of water per flush, combined with the fact that the building is designed to run entirely off of rainwater, are big contributors to its extremely low water footprint.

What's all of this got to do with NOWRA, you might ask? NOWRA members are experts at designing, installing, maintaining and regulating on-site systems. The technologies and trends I've described here are all relatively new and early in the technology adoption curve. But we are already starting to see increased demand for these systems across the country, and it's just a matter of time before the systems are just as

turn-key as any residential septic system. For NOWRA members who embrace change and are looking for ways to diversify their offerings, the world is ready for you! ●

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Lynn E. Broaddus, Ph.D., M.B.A., is President of Broadview Collaborative, Inc. With over three decades in the environmental sector, she serves as a trusted advisor to private sector, non-profit, and government clients who value her unique insights and personal networks in the water sector and the collaborative approach she brings to her work. Prior to launching Broadview Collaborative, Dr. Broaddus created and led "Charting New Waters" for The Johnson Foundation at Wingspread, a ground-breaking six-year effort to address a wide range of topics on the forefront of water sustainability and resiliency. Learn more at www.broadviewcollaborative.com.

REFERENCE

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Getting Heard on the Hill

By Thomas Cassidy, Eckert Seamans

THIS past Congress was an interesting time in that all the appropriations bills on the House side went through normal order, which was a first in many years. Although the Appropriations subcommittees did their work on time, other issues temporarily derailed the process. Ultimately, our work was saved when the Omnibus Bill subsumed all the earlier adopted appropriations language.

Our decentralized industry got a full public vetting when one of our industry representatives, Tom Fritts, spoke before the Appropriations Committee. There are many competing voices cackling on the Hill and to get your voice heard can be difficult. Tom gave a very powerful presentation that got the Members of Congress engaged on our issues. The lobbying effort started by NOWRA's Board has been a real benefit for the industry. We are becoming known on the Hill, which will result in not being left out when policy is established and funding decisions are being made.

One aspect of our plan in 2015 was our Second Congressional fly-in. The trip to Washington, D.C., resulted in many meetings on the Hill with Members of Congress and their staffs. Additionally, we were called into the Environmental Protection Agency (EPA) to discuss decentralized issues with the new team overseeing the Water Finance Center. NOWRA Board member Carl Thompson did a great job explaining some of the issues confronting our industry. We were asked to contribute to their mission by providing data, which we are in the process of doing. According to the EPA staff, decentralized solutions are now on their radar after being in disfavor for a period of time. Washington can, paraphrasing Churchill, get things right after trying everything under the sun.

Some of the progress made this past year has been the decentralized-related language in both the House and Senate Appropriations bills that was included in the Omnibus. Our industry's solutions are in a section dealing with the EPA. We are referenced by what we are, which is an energy efficient solution worthy of funding. As our battle continues, we will be right there dealing with the changing Hill and EPA staff.

Our goal is to continue to gain allies. As we pick up steam on the Hill and around town we have been adopting, as part of our long-term goal, a plan devised by industry insider Bob Himschoot. It was Bob who directed our efforts toward the realtors and homebuilders in order to gain allies. It has worked very well for the industry as we leverage our interests and power as an industry group. In this coming year we will continue to engage with all the key stakeholders in Washington as we improve our position and drive home results for the industry. ●

Thomas Cassidy is a Member of the DC Bar and practices law with the firm Eckert Seamans in the firm's Washington Office. He works in the public policy area with an emphasis on water and infrastructure.

We are becoming known on the Hill, which will result in not being left out when policy is established and funding decisions are being made.

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Doug Jackto is Dedicated to Precast

By Meg Crane



Doug Jackto at the new Front Range facility in Commerce City, Colo.

FAR LEFT: Doug Jackto with his Halo machine.

BELOW: The new Front Range facility in Commerce City, Colo.



DOUG Jackto was too busy improving his company, Front Range, and the industry in general to do an interview, so he asked his son and another employee to step in and talk about him. Lucky for him, they had some pretty great things to say.

Front Range is primarily a concrete tank precast company that focuses on onsite, says Keith Dorwart, who takes care of technical sales for Front Range.

"He's definitely an idea guy," says Joe Jackto, marketing coordinator at his father's precast company. "We come from a pretty long line of inventors." Doug's father was a businessman and an inventor who had more than 30 patents, built planes during the Second World War, and made automation equipment.

Since taking over Front Range in 1986, Doug hasn't strayed far from his father's path.

"In the '90s, my father designed his own concrete handling equipment," says Joe. "That's what we build our designs on now."

Joe says Doug wants to be a leader in the industry. He's always looking for ways to improve how everything is run. "It's all kinds of different things. Little modifications to the tanks," says Joe. Everyday, Doug has five or more ideas ranging from vacuum testing technologies, to new marketing

techniques, to new ways to approach sales. "It's not huge things. But it's a constant barrage," says Joe.

It's this interest in always bettering the company that led Doug to being so involved in the wastewater industry. He has been on the board of the National Onsite Wastewater Recycling Association (NOWRA), is a sustaining member of the Colorado Professionals in Onsite Wastewater, Colorado Well Water Contractors Association, the National Precast Concrete Association (NPCA) and American Rainwater Catchment System Association. He is also a Certified Installer of Onsite Wastewater Treatment Systems, and received an award in 2010 from the NPCA for Creative Use of Precast in the underground category. He is a staple of the industry and was heavily involved in the stakeholder process during the creation of Colorado Regulation 43, which introduced much higher standards for concrete testing for underground tanks.

Though no longer on the board, Doug is still very active with NOWRA. "In a major way, it allows us a lot of face time with regulators and engineers," says Dorwart. He says it also allows them to stay on top of the new technologies coming out for precast. Dorwart says while most precasters focus just on precast, Front

Range is also interested in the innovation side of its field.

Doug doesn't believe that innovative ideas only come from people with a great deal of experience in the industry. He looks to everyone for their own ideas. "He does really not only value my input, he asks for it," says Dorwart. Doug asks him where he thinks the future of Front Range is and for ideas on improving the company.

As much as he values his employees, he also makes sure his company is well positioned to serve its customers, including geographically. In the past year, Doug moved Front Range from Boulder, Colo. to Commerce City, Colo. because it was more centrally located in the state, making it more convenient for customers.

"We were able to really update our facility as well," says Joe. In the new space, they will be able to produce tanks even when it is cold and snowing. Dorwart says the streamlined process the new facility will have a cost-benefit to customers, which is proof that Doug is putting their needs first.

"He really wants to further the industry down the line. Not just today and not just for our company," says Joe. 🌱

Let's Get Our Word Out to Those Who are Making Decisions

By Randy Miles, University of Missouri

I am writing this column after a very successful NOWRA Conference in Virginia Beach, and one week before Christmas. With the New Year just around the corner many of the state affiliates and other state and regional onsite wastewater associate meetings will be happening over the next four months. This is a time of year I certainly enjoy as many of these meetings and trade shows bring together installers, regulators, manufacturer representatives, engineers and site evaluators for a common cause. Additionally, many friendships over the years have been made and reinforced.

New products, additional research findings, exposure to safety standards, and new installation techniques are among many of the items that are presented at these functions. I have been fortunate over the years to not only participate in my own state tradeshow, the Missouri Smallflows Organization, but have also been asked to speak at many other state associations' trade shows and conventions. These shows, conventions, workshops, etc. have been a great boost to our profession over the past 25 years and have added value to the industry. Much of the credit for the increased visibility and visibility of the onsite profession in many states comes from the state organizations' meetings, as well as the annual NOWRA meeting.

As I reflect on what has taken place at many of these meetings over the years, one group of individuals I have not seen at these meetings are elected local and state officials. Yes, I am introduced to one occasionally at these functions as there are a few in our profession who serve in state representative or senatorial roles and they do a great job for our industry. However, I hardly ever see a local or state representative invited to or participating in our meetings.

NOWRA's officers and industry members increased lobbying efforts through hiring Thomas Cassidy, the organization's lobbyist. I firmly believe this effort will increase our viability. Some state affiliates have had successful lobbying efforts or increased efforts that have or are starting to pay off. Many times these efforts have been in response to some "bad PR about septic systems" the industry has received. Perhaps we should be proactive and make initial contact with the "politicians" before additional negative publicity.

As a teacher and researcher in my state's land-grant institution, I have had the opportunity and honor to teach over 8,000 students in soils courses during my career. In that time a number of those in my classes have gone on to not only be a professional in our industry, but a few have gone into public service as state representatives or senators. In the mid-1990s, I was chair of a state-wide task force to develop a new onsite wastewater code and present it to the legislature. That work hit stiff resistance for three years. During the fourth year a hearing before a house committee happened, and one of my former students was a member of that committee. After my presentation he stated that what I presented was "out there in the real world" as he had seen these issues on a field trip in one of my classes. That instance was a great assistance in (finally) getting the current Missouri code on our fourth try.

My current state representative is another one of my former students. As we look at the future of our industry and some of the legislative needs for updating, improving and filling in gaps in our current state code, I am inviting him to our annual meeting in 2016. I have found out the hard way it takes time and multiple efforts to change codes and mind-sets.



Some of the points I have learned from my past students who are in these leadership positions are: they like to be informed about their constituency; they do not like to be "blind-sided" by something controversial; they want to help the small businesses in their district; and they are more open to new ideas in a non-controversial situation (state trade show). One other former student state representative shared with me that he was inclined to lean toward the "loudest squeaking wheel" for many reasons.

Our industry fits that in many of these situations. My philosophy is that we need to do a better job of educating our elected officials so they can better represent us. I hope you will join me in taking that first, simple step of inviting your representative to your trade show or even for a cup of coffee to get that quality one on one opportunity.

Randy Miles, Ph.D. is an Associate Professor at the University of Missouri's School of Natural Resources. He specializes in soil science.

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Passive Treatment With De-Nitrification Cluster Systems for Communities

Case Study: Blodgett Landing Community Treatment Plant

By Lee W. Rashkin, Presby Environmental

AS technology improves, “cluster” or “STEP” systems are increasingly becoming a popular solution to accommodate the sanitary needs of growing populations. These systems are an attractive long-term, viable alternative to traditional centralized wastewater treatment. They can provide a higher level of water quality protection, support the local water supplies, can easily accommodate growth, require less infrastructure, and make it easy to employ water reuse techniques. According to the EPA Region 4 estimate, there are many well-managed, properly functioning decentralized systems in the United States, including more than 400 compliant cluster wastewater treatment systems in the Southeast United States alone.

The nation has made significant strides over the past 30 years in addressing the wastewater treatment needs of communities across the country, but vast wastewater treatment needs remain, especially in small communities. The EPA’s 1996 Clean Water Needs Survey estimated that small communities need an additional \$13.8 billion to comply with the Clean Water Act by the year 2016. Nearly \$8 billion in government funding has already been provided to small communities for wastewater treatment projects since 1992.

Often the burden to find a solution for a community falls on public officials. According to the EPA handbook for Managing Onsite and Clustered Decentralized Wastewater Treatment Systems, effective management programs and innovative technology are often achieved by communities when local agencies take advantage of the resources of interested parties, such as industry associations and private companies. With the introduction of passive technology in the last 20 years, communities are achieving benefits including low energy consumption, with very little maintenance, chemicals or additives. This results in significantly reduced upfront and operational costs.

The Blodgett Landing Treatment Plant is an example of a community that faced issues with an antiquated wastewater treatment system and took advantage of innovative treatment technology to lower the costs burden for their taxpayers. The town of Newbury, New Hampshire, had a problem with their 50,000 GPD sandfilter system. The town identified the following three major issues:

- First, they routinely had parts of the system freeze during winter months, inhibiting the nitrification and de-nitrification process and overall functionality.
- Second, the facility had an antiquated 34,000 gallon Imhoff tank that needed to be replaced.
- The third issue was one facing many rural communities—the system was not large enough to deal with their growing population.

These issues, combined with technical obstacles and a limited budget, made it difficult to find a solution that complied with treatment levels, while being affordable to operate and maintain.

Most municipalities today employ a mechanical treatment process that is costly and requires routine maintenance and replacement parts. The town determined it was going to be too expensive to meet the treatment levels set by the state of New Hampshire using conventional treatment technology.

The engineering firm Stantec was contracted by the town to help find a solution and, after considering the available options, chose to specify the Enviro-Septic® system, a passive treatment technology that does not require chemicals, additives or special maintenance. The treatment plant was designed as a recirculating system handling flows ranging from 2,500-88,000 GPD. The wastewater goes through an initial screening and then proceeds to one of two Imhoff tanks where sedimentation and separation occurs.

After the Imhoff tank, the effluent then continues to an equalization tank before it is dispersed to one of the four treatment

beds, each 90 feet long by 50 feet wide. The beds consist of 48 rows of pipe that are each 86 feet long. With a design flow of 50,000 GPD and peak flows of over 88,000 GPD, the passive technology treats roughly three gallons per linear foot per day with the treatment levels of TSS=4.73mg/L, BOD=5mg/L, TN=3.6mg/L, TKN=>0.82mg/L, Fecal Coliform=44.9MPN/100ML. This project highlights how passive cluster systems are a reliable solution for communities with a tight budget and strict treatment requirements.



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Lee W. Rashkin is Vice President at Presby Environmental. Learn more about Presby Environmental at www.presbyeco.com.



The Blodgett Landing Treatment Plant.

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WHY NOWRA?

- NOWRA is the largest organization within the U.S. **dedicated to educating and representing members** within the onsite and decentralized industry.
- **All segments of the industry are represented on NOWRA's Board of Directors** that provide broad perspectives to promote and sustain our industry and service to the public.
- NOWRA provides **a national forum** to address the challenges facing our industry.
- As the national educational resource and clearinghouse for onsite and decentralized systems and promoter of best management practices, **NOWRA plays a lead role in state and federal legislative initiatives** to protect water sources, human health, and the environment.
- **NOWRA creates new market and business opportunities for its members** through conferences and networking events, while increasing the awareness about how onsite systems protect public health and the environment.

WHY JOIN?

Septic Locator: Every NOWRA member receives a free listing on the Septic Locator, the only national, searchable directory of providers of onsite wastewater management services.

Installer Academy: NOWRA has established the Installer Academy as the national educational entity for the decentralized wastewater industry to ensure that quality training programs are available for all industry practitioners.

Resource Library: NOWRA's Resource Library is intended to be a one-stop portal to help you identify critical information online, which can help you manage your business. It consists of published industry research, how-to manuals, regulations, archived training materials...and more.

Annual Conference: NOWRA's Annual Conference & Expo brings together industry leaders from around the country.

Newsletter: NOWRA E-News is delivered directly to your email inbox and consists of the latest news on national and regional developments affecting our industry.

Leadership: NOWRA provides all members with opportunities to have a voice in its affairs. Whether you express that by voting in NOWRA's Board of Directors elections, participating in the Annual Meeting, commenting on proposals, volunteering your time on a committee or task force, or simply sharing your views with a board member, NOWRA welcomes and encourages your involvement in our activities.

Affiliate Support: NOWRA works to support its state organizations in a variety of ways: training discounts, Roe-D-Hoe® support, meetings with state leaders, data/web services and much more.

Roe-D-Hoe®: Held annually, this competition is intended to showcase the skills of contractors and the equipment they operate through a series of timed exercises contestants must perform on a backhoe. NOWRA also sanctions a number of state Roe-D-Hoe® competitions around the country; the state winners are automatically grandfathered into the national finals where they compete against the winner of the open competition held during the Onsite Wastewater Mega-Conference.

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Inspectors: NOWRA has endorsed Alteris' SeptiCover Errors & Omissions coverage for designers and inspectors of septic systems. Alteris has been involved in the septic system industry for more than a decade and their SeptiCover E&O package offers extremely affordable premiums for members providing design and or inspection services.


Equipment Loan Discounts: NOWRA has partnered with Wells Fargo to provide members with discounts on interest rates and document fees for equipment purchases in excess of \$50,000. This membership benefit is unique for NOWRA members—no other onsite association is able to offer this discount to its members.


Office Supplies Discounts: NOWRA has teamed with Office Depot to bring your business a better office supply solution.




If you are a NOWRA state affiliate, you can contribute to this section of the magazine **FREE OF CHARGE!** Email ssavory@matrixgroupinc.net for deadlines for the next issue.

Delaware

On October 13 and 14, 2015, Delaware On-Site Wastewater Recycling Association (DOWRA) 

held their 19th Annual Conference & Exhibition at the Delaware State Fairgrounds in Harrington, Delaware. There  over 250 attendees and 30 exhibitors.

Educational programs at the conference were offered in two parallel tracks, with a total of 23 hours of programs and a possible 12 CET hours for each attendee. Programs included NAWT's Vacuum Truck Technician training program, and, as a follow-up to last year's trench safety program, the Delaware State Fire School presented classroom and field demonstrations on confined space safety and rescue.

The conference was a **HUGE**  success! Plans are already underway for our special 20th Annual Conference in 2016.

In other news...

- DOWRA's incoming President will be Brian Carbaugh, beginning January 1, 2016. Brian is a Professional Engineer and owner of WWES Associates in Dover, Del. He can be reached at (302) 745-2595.
- DOWRA is excited to congratulate a new Delaware champion from the Annual Backhoe Rodeo, Greg Gillie, who also took third place at the NOWRA Conference in Virginia Beach, Va.
- DOWRA is now on Facebook with notices, comments and LOTS of pictures from the 19th Annual Conference, provided by VIP BOD Niki Glanden.

If you have any questions about DOWRA, feel free to contact us through our website or Facebook. www.dowra.org.

Kansas

The Kansas Small Flows Association (KFSA) 2016 Conference completed the last of the deliverables for a \$40,200 EPA Section 319 Grant awarded through the Kansas Department of Health and Environment-Watershed Management Section. Over 60 scholarships were provided for regulators to attend KSFA's 2015 and 2016 Annual Conferences, two soils workshops and the 2014 NOWRA Conference.

Through these educational opportunities, regulators gained a better understanding of proper installation, troubleshooting and maintenance of on-site wastewater treatment systems (OSWTS), as well as a better understanding of soils and basic fundamentals of OSWTS. KSFA appreciates the opportunity to work with the State of Kansas to provide education for our regulators!

Michigan

The 65th Annual Michigan Onsite Annual Wastewater Conference and Exhibits was held January 12 to 14, 2016, at the Kellogg Hotel and Conference Center, Michigan State University, in East Lansing. It was presented by the Department of Environmental Quality (DEQ), the Michigan Environmental Health Association, the Michigan Onsite Wastewater Recycling Association, the Michigan Septic Tank Association, Michigan State University, and the Michigan Water Environment Association.

This year's theme was *Onsite Systems, Sustainable Infrastructure*. The event was a three-day, educational conference and exhibit hall for the onsite wastewater industry geared toward local public health, engineers, consultants, installation contractors, septic tank pumpers and others interested in onsite wastewater management. Up to 17.5 Continuing Septage Education hours were available for DEQ Licensed Septage Businesses. The National Association of Wastewater Technicians also offered the Vacuum Truck Technicians Training Certification Program as part of the conference.

Over 30 exhibitors participated as well, and were on hand to exchange ideas and discuss their products and services. Other highlights include a keynote address from Dr. Ted Loudon, a legislative update from State Representative Ken Goike, available one-on-one times for discussions with DEQ Septage Program staff, presentations from experienced industry professionals, and 14 topics of round-table discussions.

Missouri

Missouri Smallflows (MSO) hosted its Annual Conference and Trade Show on January 19 to 20, 2016, at the Holiday

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Being an NOWRA affiliate has many benefits. Learn about them at  www.nowra.org, under the State Orgs tab.

Inn Executive Center in Columbia, Mo. The Pre-Conference with Dr. Sara Heger on *Anaerobic Versus Aerobic Treatment* took place on January 18. We also hosted the 4th Annual Roe-D-Hoe at our Membership Appreciation function on the night of January 19.

Also...Don't forget to renew your MSO Membership! We are now offering more benefits for your dollar and you always get discounts on classes and our conference. Learn more at www.mosmallflows.org.

Thanks for supporting Missouri Smallflows Organization. 



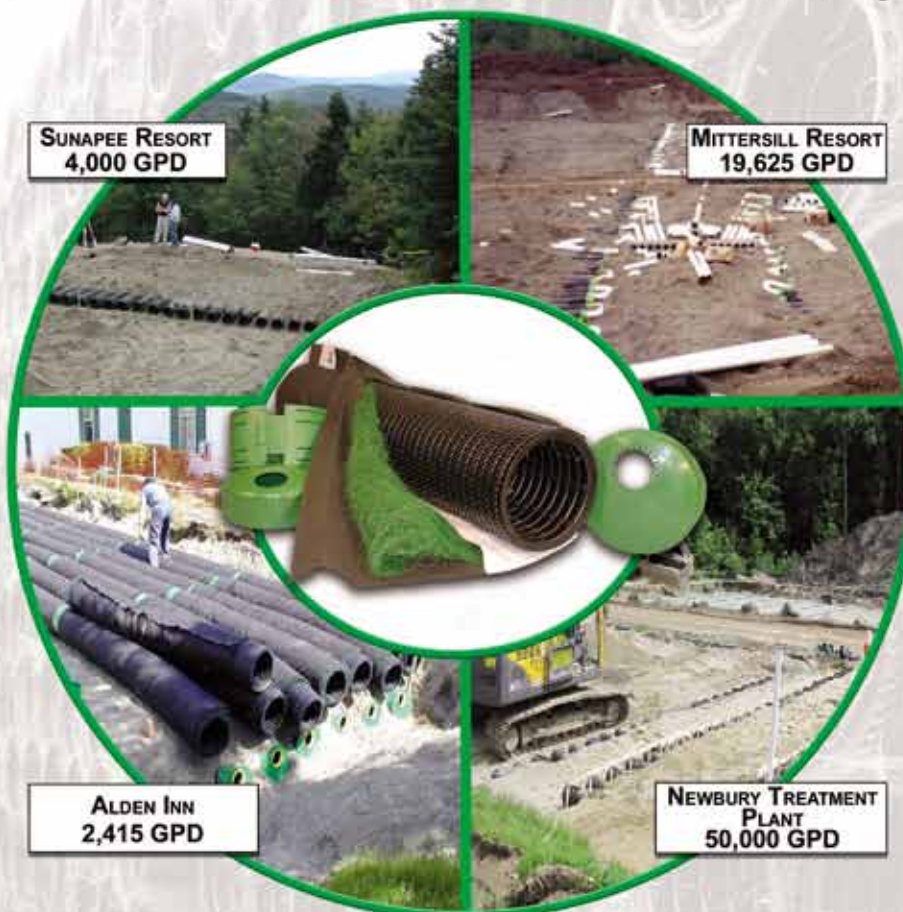
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