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The official publication of the National Onsite
Wastewater Recycling Association

THE Onsite Journal

Winter 2014



Raising the Bar, Setting Standards

Onsite wastewater standards, to date, have been developed as needed, with little collaboration between states. This meant communities across the country, and even in neighboring counties, are working with different design and installation standards. NOWRA is hoping to change this and bring much needed standards of practice to America's onsite wastewater industry. Learn more on page 9.

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Raising the Bar, Setting

Standards The industry has been
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Today's
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becoming increasingly aware that
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mind.



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Two-Stepping in Music City: NOWRA Conference Lets Loose in Nashville

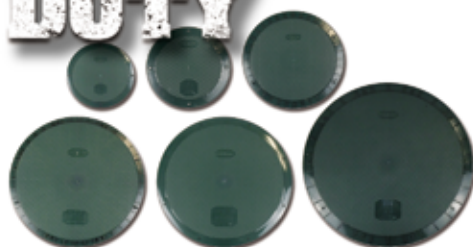
The National Onsite
Wastewater Recycling Association (NOWRA)
dusted off their cowboy boots and moseyed
into Nashville November 18-20, 2013 for the
22nd Technical and Education Conference.
The event focused on two ideas—design and
technology, and moving forward nationally.

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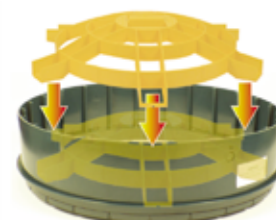
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"EIGHTY percent of success is just showing up," Woody Allen once famously said. I have considered that quote frequently in recent weeks as The National Onsite Wastewater Recycling Association (NOWRA) has begun to move forward in its efforts to secure more federal funding for our industry. As this issue of the *Onsite Journal* was going to press, members of NOWRA's Lobbying Steering Committee have begun the process of identifying a Washington lobbying/advocacy firm to take our message to Congress and the EPA.

While it would be wonderful if the simple act of establishing a lobbying presence in Washington got us 80 percent toward our goals, my guess is that the task which lies ahead is a bit more difficult.

As you may have read in the inaugural issue of the *Onsite Journal*, our industry has never gotten its fair share of federal funds dedicated to wastewater treatment. Our industry represents 25 percent of the nation's wastewater infrastructure but only receives two-tenths of one percent of the funds available annually through the Clean Water State Revolving Fund (SRF). Put another way, while the sewer to

septic infrastructure ratio nationwide is 3:1, the funding ratio is 500:1. And make no mistake, the SRF funding disparity is significant—with more than \$5 billion in funding distributed annually through this fund, it is by far the single largest source of federal funding.

Our industry faces a host of challenges: too many systems are failing; too many homeowners don't understand septic systems or the responsibilities they have to properly operate and maintain them; too many industry professionals have not received adequate education and training; too many stories ►► 6

• The simple fact is that if
• NOWRA wants to effect
• change for its members
• and the industry, it needs to
• have a consistent presence
• before the lawmakers and
• regulators who are in the
• best position to make those
• changes happen.

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in the news media about septic systems are inaccurate or carelessly written; too many people have a negative image of septic systems; too many politicians commit "zoning by septic;" too little money is available for regulatory oversight; too little critical industry research has been funded; too few wastewater infrastructure decision-makers—developers, city and county managers, local elected officials, engineers, planners, etc.—realize the benefits of decentralized wastewater treatment as a

viable and cost-effective alternative to central sewer; and too few of our counterparts in the central sewer community understand that decentralized wastewater technology can help their industry close the \$1 trillion infrastructure gap facing them over the next 25 years.

Although increased funding might not completely solve all of the challenges we face, it would absolutely be a positive step in alleviating the severity of those challenges. Malfunctioning systems could be

repaired / replaced. Homeowner education and practitioner training could be increased. More research would prove the viability of technologies and management strategies and speed their entry into the marketplace. And important wastewater infrastructure stakeholders, the media and politicians would better understand the benefits and advantages of decentralized wastewater treatment.

Our industry has a terrific story to tell. We are the original "green" technology, offering a sustainable and environmentally beneficial way to treat wastewater. Onsite and decentralized systems can usually be implemented more economically than other treatment processes. Communities that implement decentralized wastewater treatment solutions generate economic development and jobs for the community. Our technologies are used in stormwater mitigation, water reuse and sewer mining (to increase capacity in central sewage treatment facilities).

Unfortunately, for too long we have assumed that our messages were gaining traction in Washington through the occasional contact we have had with key regulators and lawmakers. Sadly, that assumption is mostly fantasy. Regulators, Members of Congress and their staffs all suffer from short attention spans brought about by the thousands of other lobbyists and public relations flacks who are already advocating for changes related to the interest groups they represent. The simple fact is that if NOWRA wants to effect change for its members and the industry, it needs to have a consistent presence before the lawmakers and regulators who are in the best position to make those changes happen.

And while we believe our story is compelling and that our chances for success are good, it should be noted that the interests most likely to oppose our efforts—utilities and large system manufacturers and engineers—are powerful, well-established and well-funded. We should and do expect opposition.

But the first step is showing up. I don't think we are 80 percent there, but I am glad we are committed to showing up. Enjoy this issue and if you are going to the Pumper Show, stop by the NOWRA Roe-D-Hoe booth and say hello. I would love to hear what you think about our lobbying efforts—or any other topic on your mind. 🌱

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To Flush, or Not to Flush

By Paul Adair

FOR those who don't know about the workings of wastewater treatment, the toilet probably seems to be the perfect place to dispose of unwanted items; circling the bowl before disappearing from sight. However, today's wastewater professionals are becoming increasingly aware that for non-dispersible items, such as wipes, out of sight does not necessarily mean out of mind.

Wipes are increasingly becoming more popular with today's consumers and inventive manufacturers are continuously finding new uses for them. There are wipes for the baby, wipes for your skin, wipes for your counters and wipes for your car; it would seem that the only thing that has grown faster than America's love of wipes is the havoc that these non-dispersible products play on septic systems, municipal sewer systems and wastewater treatment plants.

Conservative estimates feel that over the next decade, the convenience of wipes will spur usage by over 400 percent and, because of this, wastewater professionals will feel the effects as the issues surrounding the flushing of non-dispersibles grow as well.

In 2011, the Maine WasteWater Control Association (MWWCA) conducted an online survey, receiving 58 responses from around the state. Ninety percent of respondents indicated that they had experienced problems associated with non-dispersible products, such as clogged pumps in their systems. Many of the towns and departments that responded to the survey said that they had tried a variety of public outreach and educational initiatives with little to no success.

This is unfortunate as the costs linked to this issue are not small. The average respondent spent in excess of \$45,000 combating the problem. Additionally, the need to



upgrade pump stations in order to specifically screen these non-dispersible products can divert much-needed funding from other state and municipal infrastructure projects.

The MWWCA has been working closely alongside other water quality associations from across the nation to help gain a foothold in the fight against the proliferation of non-dispersible consumer products entering the wastewater systems. They have found that working with others as a cohesive unit can have more impact on industry and public education, as well as, in promoting regulatory change.

Although positive momentum has developed through cooperation, their efforts have not been completely successful, partly because of a severely limited written record to examine the "cause and effect" relationship of pump clogs. Without this record, manufacturers—in trying to limit their corporate responsibility and in the defense of their products—have claimed that the utilities are incorrectly identifying the source of the clogs and have given their products an unfair reputation.

Therefore, in order to better document the source of pump clogs and counter this belief of the manufacturing industry,

the MWWCA has developed the Pump Clogging Standard Operating Procedure (SOP) with national input from the Water Environment Federation Collection Systems Committee and other organizations.

SOP allows the utilities to better catalog the materials being removed from clogged pumps and other sewer obstructions to more fully understand the issue. The information collected goes to help support further deliberations between water quality organizations and The Association of the Nonwoven Fabrics Industry (INDA) and to spur more industry changes being requested by the MWWCA and their partners.

INDA has long been one of the manufacturing industry's leaders in encouraging its membership in the proper disposal of nonwoven disposable products and is now working in partnership with water stewardship organizations to help protect the nation's wastewater systems.

INDA feels that the problems associated with non-dispersibles do not necessarily lay with the products themselves; as most of the items clogging up the sewer systems and wastewater pumps are not labeled as being flushable.

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"Some products are designed to be flushed, while others are not," said INDA President, Dave Rousse. "It is the products that are not designed to be flushed—but get flushed anyway—that are creating the problem for wastewater systems and we are working collaboratively to change this."

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Prior to a flushable claim being made on any product intended to be flushed; the product first needs to pass a rigorous assessment process established by INDA and their partners. To fully satisfy this assessment, a product's material must be able to clear residential plumbing systems, be compatible with wastewater conveyance, treatment, reuse and disposal systems, and become unrecognizable in a reasonable period of time.

If a product is not designed to be flushed and deemed non-flushable, but is used for a purpose that the consuming public is likely to flush regardless, then the Code of Practice states that the non-dispersible products should display the "Do Not Flush" logo prominently on the packaging.

"We all support good product stewardship and doing what's right for the environment," said Rousse. "This includes making sure that products that claim to be flushable will not harm the sewer system, and educating consumers on proper disposal by ensuring that disposable products are not designed to be flushed are properly labeled with the 'Do Not Flush' label."

INDA believes that by doing so, they are helping in the reduction of the amount of non-flushable items in America's wastewater systems, thereby reducing significant economic burdens on local municipalities.

To better help their membership with flushability assessments and to provide guidance on the proper labeling of products, INDA has recently released a 3rd edition of its Code of Practice for manufacturers and marketers of wipes and other disposable nonwoven products; including a detailed decision tree to determine the proper labeling of a product. This Code of Practice was assembled with input from several water quality organizations; the National Association of Clean Water Agencies (NACWA), the Water Environment Federation (WEF), and the American Public Works Association (APWA).

Organizations such as these have long been calling for change to INDA practices in order to address many of the shortcomings in confronting the issue surrounding non-dispersible products entering wastewater systems. They recognize that a solution will not come from a single source but

will require a multi-pronged approach from water stewardship organizations, the manufacturing industry, and the public.

The 3rd edition of INDA's Code of Practice, addresses many of the concerns of these organizations, such as acknowledging that products which are considered to be non-dispersible are indeed entering wastewater systems and causing problems, the development and promotion of proper logos and labeling, and improving cooperation between itself and water quality associations.

"INDA's new guidelines demonstrate continued progress for determining flushability," said Christine Radke, Manager of WEF's Water Science & Engineering Center. "We also believe that the guidelines could be further improved to ensure that flushable wipes break apart more rapidly and, therefore, are more sewer-friendly. We are pleased that INDA will be working with us to improve testing procedures that ensures flushable products are compatible with sewer systems."

It is important to mention that the guidelines set out by INDA are not standards and, as such, do not have any binding qualities for INDA's membership. Compliance with the guidelines is strictly a voluntary measure and the 'Do Not Flush' labeling may or may not be implemented by every INDA member. Additionally, non-woven product manufacturers who are not members of INDA are under no obligation to follow any of the guidelines found in the 3rd edition Code of Practice. 🌍

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Raising the Bar, Setting Standards

By Paul Adair

THE onsite wastewater industry has been looking for a set of design and training standards that technicians and professionals may use as a benchmark, regardless of which jurisdiction they may happen to be operating in. Standards to date have been developed over the years on a somewhat ad hoc basis, with little collaboration between states or even between neighboring counties. Organizations such as NOWRA hope to change this and bring some much needed standards of practice to America's onsite wastewater industry.

In the building boom following the Second World War, much of the industry's guidance in the handling of wastewater was drawn from the *Manual of Septic Tank Practice*; documentation based on an individual engineer's experience working with pre-1950 drain-fields. Subsequent advances in onsite wastewater understanding came from local sanitarians doing what worked best within each county, with the thought that sewer systems would forever be able to connect to the grid.

"However, the 1980s brought an understanding from the federal grant programs that we cannot afford to sewer the world; so onsite systems should last," says Robert Mayer of the American Manufacturing Company Inc. "However, current standards change at state lines and this makes doing business difficult for all practitioners. The lack of collaboration has led to varying designs; and therefore standards."

States are slowly coming closer to understanding just how onsite systems work and, with marginal treatment standardization through federally sponsored entities such as the National Sanitation Foundation (NSF), private manufacturers are beginning to enter the fray and advance techniques and products available for the treatment and dispersal of onsite wastewater.

The last decade has also been witness to a steady increase in the number of onsite sewage disposal systems (OSDS) using pre-treatment units and pressurized field systems, sometimes referred to as innovative or alternative (I&A) OSDS, to meet changes in the various levels of regulatory requirements.

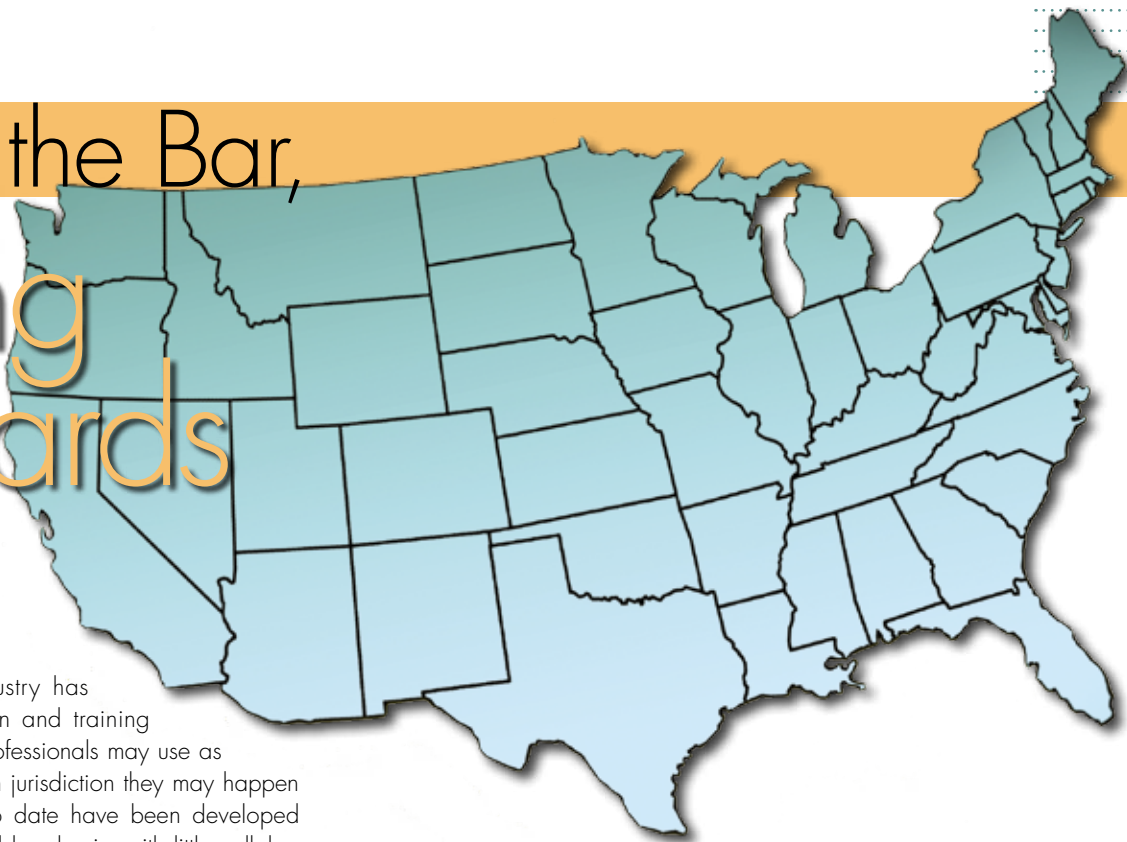
"From my experience, there is a real need for qualified designers for these advanced OSDS," says Kevin Koepenick, Supervisor of the Ground Water Management Section for the Baltimore County Department of Environmental Protection and Sustainability. "However, because there is little-to-no formal training available on how to incorporate these technologies, regulators and designers have to learn by word-of-mouth, through the occasional seminar, or through trail-and-error in the field."

The consequence of this lack of collaboration from within the onsite wastewater industry to establish standards will inevitably lead to poorly designed systems being installed and then failing; negatively impacting public health and environmental quality. When this happens, both the technology and the onsite wastewater industry will earn a bad reputation with the public.

"NOWRA started with the idea of 'recycling' wastewater back to the environment in a public health safe and environmentally friendly way," says Mayer. "National design standard guidance should reflect best practices in engineering of proven onsite treatment and dispersal systems. Without good design standards we cannot meet the discharge standards. Without discharge standards, we would have again raw wastewater in our ditches."

Also, not having nationally-based training standards in place leads to even properly designed systems having problems being installed and maintained. When each state and region has their own individual standards for OSDS systems, engineers and manufacturers are left with a sense of confusion when operating outside their home-bases.

"I believe that by not having design standards or more formalized training results in delayed project approvals," says Koepenick. "It is not uncommon for my office to have to review a ▶▶page10



proposed design up to five times, sometimes more, simply because the designer is unfamiliar with the practices of advanced OSDS design. This complicates the process and increases the overall cost."

Everyone wins in having better training and design standards, but the main benefactors will inevitably be public health and safety, the environment and the reputation of the onsite wastewater industry.

There has been some recent momentum in seeking consensus in adopting a national standard for the training of onsite wastewater professionals. The Consortium of Institutes for Decentralized Wastewater Treatment (CIDWT) has, through federal grants, developed installer training and operator training; NSF certifies septic system inspectors for real estate transfers; and National Environment Health Association (NEHA) certifies contractors. But what is lacking is a standard of practice as it relates to good design and technical guidance on how to do the design.

"All these activities talk about what the different systems are and how they work," says Mayer. "None, however, talk about design because many treatment technologies are proprietary and complete systems are frequently designed differently in different states. NOWRA is the first national organization to take on the design component."

As an example of NOWRA's efforts to affect design standards on the state level, the Maryland Onsite Wastewater Professionals Association has been working in partnership for almost two years with NOWRA to create an Advanced OSDS Design course that is intended to be offered this spring.

"I have been working with NOWRA to develop a three-day course that will have an emphasis on designing pressurized systems in Maryland," says Koepenick. "Given the variability that we have across the country with geology, topography, regulation and politics, getting buy-in on a national standard of practice will be difficult but I believe it is NOWRA's intention to be able to offer this course nationally once it is finalized."

The wants of many stakeholders will need to be considered when looking at imposing national training and design standards upon the onsite wastewater industry. A wall of red tape will have to be cut through before standardization can take

place and governments—at every level—tend to be notoriously slow in adopting regulatory changes; particularly when one considers the number of interest groups hoping to be part of the conversation. This makes it problematic for governments to reach consensus on what is to be done.

"Then when they do, who do they listen to?" asks Mayer. "Manufacturers and others have a desire to have favorable consideration in the regulation. Most practitioners and manufacturers would like good standards so they know what the target is but on what basis does one way of doing things have an advantage over another?"

Even with the will to adopt national standards in onsite wastewater design and training, there is still the challenge in making it happen. Without clear and vocal leadership in this push, there will be a lack of understanding as to exactly what national standards of practice means for the industry and what benefits standardization would bring to the people involved.

"The other regulators that I know would like to see things standardized but this industry has historically been composed of mostly small businesses that have only been regulated at the local level," says Koepenick. "Consequently, they have all developed their own way of doing things and no one wants to lose that flexibility."

Getting all the interested parties on the same page is where an umbrella organization, such as NOWRA, can affect true change. NOWRA, as they are doing in Maryland, is uniquely positioned to coordinate the development of up-to-date training and design practices for common systems and act as a clearinghouse in order to disseminate the information and have it peer reviewed by the membership.

Everyone wins in having better training and design standards, but the main benefactors will inevitably be public health and safety, the environment and the reputation of the onsite wastewater industry. As such, the positives in seeking out national standards will far outweigh the negatives in remaining idle on the issue.

"Design standards should result in more robust and more affordable systems," says Mayer. "The robustness would better assure the water quality goals can be maintained and the more affordable the more maintainable the systems should be to make this sector of our infrastructure sustainable." ●



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Two-Stepping in Music City: NOWRA Conference Lets Loose in Nashville

By Alexandra Walld



Dick Otis (left) accepts the Richard J. Otis Industry Achievement Award from NOWRA President, Tom Fritts.



Panelists discuss technology sharing during an open discussion.

MEMBERS of the National Onsite Wastewater Recycling Association (NOWRA) dusted off their cowboy boots and moseyed into Nashville November 18-20, 2013 for the 22nd Technical and Education Conference. Featuring a speed vending expo and tour of onsite systems, the event focused on two ideas—design and technology, and moving forward nationally.

After initial greetings, Tom Fritts, president of NOWRA, made an exciting announcement. “We named our inaugural annual award after someone in the industry, and we found the perfect person. NOWRA is proud to announce the Richard J. Otis Industry Achievement Award and the first recipient of this prestigious award, Dick Otis.”

Green technology, growing industry

“Our industry is growing. Sustainable wastewater is a green technology and green choice,” says Fritts. “Water is so important. Freshwater is depleting from aquifers. We need to listen to and learn from others.”

Britton Dotson from the Tennessee Department of Environment & Conservation discussed future plans, including implanting a biosolids program, considering how land-based systems ►►page 12



Exhibitors shared their products, technologies and services with attendees.

Touring Onsite Systems Around Nashville

Brian Corwin, Director of Sewage Disposal Management for Williamson County, TN, planned an outstanding tour that included presentations from individuals involved in the following projects:

- The Millview Church of Christ – Peat media filter system with MLPP dispersal;
- The Grace Chapel Church and school – Recirculating sand filter with drip dispersal;
- Town of Thompson’s Station community center – Presentation of town’s wastewater infrastructure during lunch;
- Heritage Commons shopping center – Decentralized lagoon wastewater system with spray irrigation dispersal serving a shopping center, many churches and some of the Town of Thompson’s Station; and
- Arrington Vineyards – Extremely high strength and mixed wastewater, MBBR and trickling filter treatment with drip irrigation dispersal.

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Exhibiting Companies

Conference attendees networked and visited exhibitor booths in the Grand Ballroom. Exhibitors included:

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Waterloo Biofilter Systems, Inc.

perform, and exploring decentralized system permitting, inspection and performance evaluation.

"Decentralized technology is innovative, powerful technology," Dotson says. "We want to better define standards."

There are no legislative funds being used, he adds. The program is funded by collected fees.

Tackling TMDLs

Glynn Rountree, program manager of environmental policy for the National Association of Home Builders, says there is a need to reintegrate water across the spectrum. States are focusing on total maximum daily loads (TMDLs) for resources like the Chesapeake Bay watershed, he adds, which is affected by nitrogen dissolving and moving through systems.

"The Chesapeake watershed is the largest in the States. At 64,000 square miles, it takes up part of six states and D.C. There are three million people living there," says Glynn Rountree, from the National Association of Home Builders. "The TMDL started in 2010 and will be finalized by 2025. The cost of reductions has been promised from the EPA; for Maryland and Virginia, the estimation is around \$1.5 billion to meet the TMDLs from 2010 to 2025."

Rountree says cost-effective reductions can be achieved through water quality trading and that fixing the Conowingo Dam on the Susquehanna River in Maryland can ensure effective TMDLs. The dam is 90 percent filled with sediment. Finally, the level of pollution reduction in 2025 can never be exceeded.

Emphasizing the mandate for new systems and reductions in phosphorous, onsite septic systems have become popular. The EPA estimates there are 1.7 million septic systems in the Chesapeake area, with expected growth to 1.9 million by 2025.

"Looking at the bigger picture, this will happen in other places," says Rountree, mentioning the Mississippi River might be future subject for TMDLs. "Cluster systems will be the way of the future."

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Political hurdles

State revolving fund (SRF) money can make a difference—if you can get it. “Lobbying has such an ‘eww’ feel; ‘advocacy’ is better,” says Eric Casey, executive director for NOWRA. “We’ve been developing a vision on how NOWRA can meet advocacy needs.”

There are challenges, he adds. “We have fragmented and contradictory regulation—too much variation in codes, budget cuts, inadequate training. The biggest challenge is lack of funding. If we had more, we could fix malfunctioning systems, increase training development and speed up technology transfer.”

NOWRA’s vision for action includes:

- Increasing SRF funding for onsite wastewater infrastructure;
- Increasing advocacy tactics (educating congress on decentralized/onsite systems);
- Establishing a political action committee and state associations, and developing alliances with groups with strong government affairs operations; and
- Seeking grants for training, research and public education, and cultivating contacts in the EPA.

“If we’re gonna play with the big boys, we go through lobbyists,” says Dennis Hallahan, technical director at Infiltrator Systems. “It’s a ring we *have* to enter.”

Technology sharing

The second day featured an open discussion on technology reciprocity.

“By data sharing, we can be transparent and trusting,” says Maureen Tooke from the EPA. “If there are parameters every state looks at—with geology-based things needing a closer look—states could be approved.”

Mark Nelson from the EPA has been working on the development of an onsite wastewater system for Chesapeake Bay. He says they need a leadership group to run with the idea of technological sampling and approval processes for states. Fritts offered NOWRA as a vehicle for sharing knowledge.

Reciprocity would benefit secondary units and components, says Mike Mettler from the Indiana Department of Health, but wouldn’t work for soil-based units.

“It would allow communication and cooperation between states, a standardized process for approvals, better protection for watersheds and a better ability for the performance of technologies,” he says. “Difficulties arise with state laws, different philosophies and environmental factors, and determining how resources can be allocated to develop standards and responsibility between states.”

Ideas that could help create streamlined approval processes include:

- Looking at soil (humidity, evapotranspiration, soil distribution and treatment to determine regional areas);
- Exploring how geology and climate affect treatment; and
- Determining an acceptable measure of longevity of system performance.

The hope is that NOWRA can work with the State Onsite Regulators Alliance to create a national plan to promote data sharing on the performance of systems.

►► **Turn the page for highlights from the NOWRA 22nd Technical and Education Conference!**



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Candids from the NOWRA 22nd Technical and Education Conference



Dan Olson: The Type of Regulator You Want to Have

FOR those working with onsite systems in the state of Iowa, Dan Olson is well-regarded as a regulator for the Iowa Department of Natural Resources; described as the type of regulator that other states would love to have.

Olson started working in the engineering department of a heavy equipment manufacturer with his father before earning his Bachelor of Science in Biology from Iowa State University. Armed with this degree, he entered the onsite wastewater industry as a county sanitarian in Rock Island County, Illinois.

"While I did food service and well inspections, I particularly enjoyed focusing on septic system inspections and soil analysis," says Olson. "The onsite systems allowed me to mix my biology education with the engineering experience I had acquired."

Olson's career took him from Illinois, to rural counties in Iowa, to Des Moines' Polk County. It was here that Olson was afforded the opportunity to work exclusively in onsite wastewater at the Iowa DNR and, given time, he took over the reins of the state's onsite program.

Iowa DNR's onsite program has seen a great deal of change and growth over the last 10 years. As head, Olson has been privileged to oversee a number of initiatives, which have greatly improved the regulatory process for Iowa's onsite systems; including the establishment of the Training Center; time of transfer inspections; new rules; septic pumper inspections; an unsewered community inventory/prioritization; the implementation of a statewide onsite database; and, perhaps most importantly, the passage and implementation of the time of sale inspection requirement in the state.

"However, these accomplishments are not mine alone," says Olson. "I had a great deal of help from many, including county officials, industry people, other interest groups and local colleagues. My predecessor and mentor, Brent Parker, started many of these initiatives and I'm humbled to think that he felt comfortable leaving them to me in order to move forward."

One of the main challenges found in—and a big part of—Olson's job is assisting Iowa's onsite system professionals with the consistent application of the state's many rules and regulations; particularly between its many counties. It can be difficult in keeping 350 certified time of transfer septic system inspectors all doing things the same way.

"With 99 counties in Iowa, I often hear complaints from contractors about wide variations in the application of rules and regulations," says Olson. "While we do allow for more stringent county rules in Iowa, it's important that we try to maintain some level of consistency. With my background at the county level, and through our training center, I have strived to provide some of this consistency."

One of the more rewarding projects, which Olson has had a part in, was the 2005 establishment of a training center in conjunction with Des Moines Area Community College and the onsite industry in Iowa. This training center has thus far been responsible for almost 100 classes and for meeting the needs of over 3,000 attendees.

"These classes provide an opportunity for me to keep in touch with county officials, contractors, engineers and others in the onsite world," says Olson. "I enjoy this interaction more than anything else. Staying involved with them and explaining the 'why'—even when it doesn't always make sense—is critical to being an effective and open regulator."

Olson sees the importance and benefits in being active with an association such as NOWRA. The conferences and events hosted by NOWRA are an opportunity for those in the wastewater industry to regularly connect with regulators and to improve communication and familiarity with each other.

"For regulators such as us, it is important to remain in constant contact with those we regulate so that regulations make sense and don't cause more problems than they solve," says Olson. "Because of this, it's imperative to be involved in industry events, conferences and educational opportunities to stay up to date and in touch with others in the onsite world."

Olson is excited by the future of onsite systems as new technologies and funding sources are becoming available for decentralized wastewater treatment.

"I think this is a good business to be in at this point in our history as most folks in the utility industry are realizing that we can't provide the 'big pipe' to everyone," says Olson. "The increased profile and growth of the onsite industry should be inspiring for all of us because it indicates the growing importance that onsite wastewater is taking globally." 🌍



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Decentralized is the Right Choice for Local Communities

By Dennis F. Hallahan, P.E., Infiltrator Systems Inc.



Decentralized systems can serve communities and replenish local aquifers. Photo courtesy of American Engineering Inc.



Centralized sewers continue to pollute 40 years after the Clean Water Act was passed.

Sustainable wastewater solution: decentralized systems

Sustainable development through sustainable designs for water and wastewater infrastructure is a means of accomplishing balance. The traditional answer in the past for most communities was to move toward centralized wastewater collection and treatment. As funding for these systems has become scarce and effective alternatives more prevalent, decentralized treatment is becoming the solution of choice for many communities.

In the decentralized approach groundwater is extracted, utilized and treated onsite; then it is returned close to its point of origin to recharge the aquifer. From small residential systems to large scale facility or community discharges, more than a million gallons per day, these natural approaches provide suitable long-term treatment solutions, better development practices and can be more cost-effective than centralized systems. Due to the compactness of the model there is less energy consumption.

By any measure of success *The Clean Water Act* (CWA) has not met its intended goals. The CWA was passed in 1972 with a 1983 deadline for compliance. Now, over 40 years later, centralized sewers continue to pollute as a routine and for a large number of communities, they are simply not financially sustainable. The following list is just a small subset of data available:

The estimated volume of CSO discharged nationwide is 850 billion gallons per year.

In 2000, the United States Environmental Protection Agency (USEPA) estimated 40,000 SSOs and 400,000 basement backups annually.

A 1981 survey conducted by the National Urban Institute indicated an average of 827 backups and 143 breaks per 1,000 miles of sewer pipe per year. Breaks occurred most often in the young, growing cities of the South and West.

Scranton, Pennsylvania combined sewer system, which frequently discharges raw sewage into the Lackawanna River and its tributaries, is part of the Chesapeake Bay Watershed. The volume of combined sewage that overflows from the system is approximately 700 million gallons annually.

The city of Indianapolis, Indiana signed a consent decree with the US EPA to make more than \$1.86 billion in improvements to curb overflows from its sewer system. The settlement will be the third highest-cost CWA settlement, and will ultimately reduce the volume of Indianapolis' untreated discharges by 7.2 billion gallons in an average year.

The conclusion that is easy to draw from these examples is that after 40 years, communities are still quite far from complying with the original *Clean Water Act*. The centralized wastewater treatment model for many communities is financially unsustainable.

The decentralized choice

Decentralized systems can treat to the same level as centralized systems. The technologies available for large-scale systems are now available for small-scale systems as well, such as membrane treatment systems. Today, there are several facilities operating at a capacity of over one MGD. In addition, owners and developers do not have to wait for sewer extensions to reach their site or the treatment plant to be expanded to move forward with a development project.

Every community is unique and needs vary greatly. When communities choose a sustainable development and wastewater treatment path, they base the choice on factors including community planning, anticipated growth, economics and environmental sensitivity. But what questions should community leaders and residents ask before determining the best route to take?

One. What are the projections for community growth and anticipated wastewater treatment needs?

Community planning is at the core of selecting the best sustainable wastewater treatment plan for the future and each community has to choose its own path. Centralized sewers offer the possibility for large-scale rapid commercial and residential growth, but many communities want to avoid that and retain historic and community character. With decentralized treatment, a community can focus on only treating the areas of town that are causing a problem or have the potential to do so. This allows for smaller design flows, smaller disposal areas, and therefore lower costs. This also places the financial burden on those properties where issues are seen or anticipated.

Two. What wastewater treatment challenges currently exist?

Officials need to know and thoroughly understand the problems in the community, such as leaking sewers, an over-capacity system,

underfunding, watershed issues, groundwater pollution and regulatory non-compliance. They should also properly document the issues and enable citizens to become informed about them and the proposed solution.

Three. What treatment options are available?

Decentralized, centralized or a melding of the two are the most common choices. When evaluating the options, hiring an expert in each model can be an important step to making the best choice without being bias-directed toward only one of the options.

Four. What are the true costs?

Decentralized treatment can offer many cost advantages. Design, permitting, legal, land purchase and construction costs all need to be dealt with short term. Long-term costs include O&M, licensed operators, billing structure, district vehicles (specialized trucks), and specialized equipment.

Cost savings can be a significant advantage in the decentralized approach. In some areas in the U.S., the average cost per unit to connect to a new wastewater treatment facility or a sewer extension is between \$54,000 and \$60,000*. This is unfathomable for most communities.

Conclusion

Communities have options when facing wastewater challenges. In spite of the perceived benefit of centralized sewers, they continue to be the primary contributor to surface water pollution 40 years after the *Clean Water Act* passage. While the centralized model is applicable to highly urbanized areas, continuing with this model in outlying areas is questionable. The key to communities making the right choice and

achieving success is to conduct a thorough feasibility analysis by qualified professionals.

There are numerous case studies available that demonstrate the feasibility of the decentralized model and several worksheets published by the United States Environmental Protection Agency can be found at <http://water.epa.gov/infrastructure/septic/Decentralized-MOU-Partnership-Products.cfm>.

With more than 25 percent of the United States and Canada utilizing decentralized systems to provide wastewater treatment, designers, regulators and contractors who understand decentralized benefits can become advocates of the industry. 🌍

Dennis F. Hallahan, PE, has over 25 years of experience with onsite wastewater treatment systems' design and construction. He has authored several articles for onsite industry magazines and has given numerous presentations nationally on the science and fundamentals of onsite wastewater treatment systems. Dennis Hallahan is currently Technical Director at Infiltrator Systems, where he is responsible for technology transfer between Infiltrator Systems and the regulatory and design communities. He can be reached at dhallahan@infiltratorsystems.net.

Note

*Meyer, M., NYCDEP Section Chief - Community Planning, On-Site Wastewater Treatment Programs in the Watershed – A Status Update. www.dos.ny.gov/watershed/2012presentations/2012%20WSTC%20%20Wastewater%20Programs%20%20Meyer%20%20Final.pdf.

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Colorado

Colorado Professionals in Onsite Wastewater has already kicked off 2014 with a bang! We started the year with our 10th Annual Educational Conference in January, held in Lakewood, Colo. We were pleased to host esteemed speakers, such as Trapper Davis from Virginia, who discussed Operator Certification vs. Licensing. We also held our Roe-D-Hoe event, which was as entertaining as ever and there are no injuries to report!

As we move into spring, we are planning on putting together a NAWT Certified Inspector Course. We will have dates/times available as that comes together. We are also in the process of bringing both a Soils Class and a Design Class to Colorado, and hope to have those up and running in the coming year.

As the year wraps up, we will not only provide both a NAWT Certified Inspector Course and a NAWT Certified Installer Course, but we will also be joining forces with NOWRA to host their 14th Annual Conference in Denver in conjunction with our Educational Conference in November.

We are definitely looking forward to what 2014 will bring!

Massachusetts

The Massachusetts Association of Onsite Wastewater Professionals is a NOWRA affiliate offering wastewater professionals from all sectors the ability to interact and advance the status of the onsite wastewater industry. We utilize the New England Water Environment Association for clerical support and have a current membership of 94.

We are undertaking a major project to provide training and examination to onsite system installers. After consulting with several local health officers and state officials, we will be developing a Massachusetts-specific examination for onsite system installers. Our approach will be to promote acceptance of the exam by local communities with the ultimate goal of a state endorsed license for onsite system installers. We also plan to offer training utilizing some of the materials prepared by the

Consortium of Institutes for Decentralized Wastewater Treatment, along with locally-developed material. Specific details are still being worked out; we will definitely provide updates on our progress.

We are currently preparing a summary of recent changes to Massachusetts onsite regulations for distribution to MAOWP members.

Please visit our website www.maowp.org to learn more and obtain a membership application.

Michigan

The 63rd Annual Michigan Onsite Wastewater Conference & Exhibition was January 7-9, 2014. It was held at the Kellogg Conference and Education facility on the Michigan State University campus in East Lansing. Even though a major snow storm affected travel for some of our attendees, speakers and exhibitors, the conference was considered a great success. Attendance figures are not in yet but it is estimated about 400 from the business and regulatory side of our industry attended.

The keynote speaker this year was Sara Heger from the University of Minnesota Onsite Treatment Program. She also spoke a number of other times on onsite problems and solutions.

Attendees had six tracks to choose from on the first day, with many being hands-on subjects for smaller groups. Some of the topics covered were:

- Funding of onsite system repairs;
- Need and development of a uniform statewide code for onsite systems;
- Truck driver compliance and certification;
- Are seepage pits bad;
- Soil treatment of wastewater;
- Pharmaceuticals in septic systems and the environment;
- Septic system accessories;
- Pump and control panel maintenance;
- Healthcare Reform; and
- Preparing yourself for dog encounters.

One of the program features that has become very popular are roundtable discussions. This year 14 large tables were set up in a room with each assigned a different

topic of discussion and a discussion leader. Three hours were allotted for six to 30 minute discussion periods. Attendees were asked to rotate tables every 30 minutes. In that way, everyone is encouraged to share their experience and/or opinion on a topic.

It does appear that there will be some activity on the uniform state code front this year.

Minnesota

The Minnesota On-Site Wastewater Association would like to make note of two events:

- The 2014 Annual Convention: January 27 - 29, 2014, at the Duluth Entertainment Convention Center (DECC) in Duluth, Minn.
- 2014 Summer Seminar: July 11. Hosted by Belle Plaine Block & Tile, Inc. in Belle Plaine, Minn.

Missouri

Missouri Smallflows Organization (MSO) is excited to offer two new classes this year for CEUs. MSO unveiled the first class, Soil Site Management and Installation Practices for OWS, at the Pre-Conference of their annual Conference and Trade Show. The class will travel throughout Missouri to educate more professionals.

Additionally, MSO will be offering the National Installer Training Program. This class is an intensive two-day course that will give a new level of training to our onsite wastewater professionals.

Check out the Missouri Smallflows website for offerings, www.mosmallflows.org. MSO had its annual Conference and Trade Show in January in Columbia, Mo. The conference had a variety of topics covered in the sessions and held the second annual Roe-D-Hoe®. See the website for results!

Pennsylvania

This past year the Pennsylvania Onsite Wastewater Recycling Association (POWRA) held two educational sessions. In the spring a session was held in the State College area and included a bus trip to several sites in which alternate

technology systems were used for single family residences. Additionally, the large volume spray system, which serves both Penn State University and the Borough, was toured.

In the fall a session was held at Kline Services in Lancaster County, a cutting edge pretreatment and recycling facility. In addition, a presentation of the two approved peat biofilters in Pa. was given by representatives of Premier Tech and PuraFlo.

New officers were elected and include Greg Marshall, President; Brad Hengst, Vice President; Secretary Len Spencer; and Bruce Willman, Treasurer.

This May, the proposed session is planned to be on the Soil Air Technology and will be held at a site(s) to be determined in Bucks County. Check www.powra.org for further information.

Wisconsin

On July 25, 2014, the Wisconsin Onsite Water Recycling Association (WOWRA) donated an entire residential Private Onsite Wastewater Treatment System (Septic System) to the Joslyn family from Cascade, Wis. Due to unforeseen medical expenses, the family has not been able to afford the POWTS system needed to cover increasing medical bills.

"The inaugural 'Rejuvenate a Family Day' began as an idea to give back to a family in need. I could not be more pleased with the outcome for WOWRA, our member companies and especially the Joslyn family," said local WOWRA member, Damon Huibregtse.

WOWRA member companies donated all materials and labor for the design and install of the private onsite wastewater treatment system, in accordance with their philosophy of environmental stewardship and to maintain and enhance Wisconsin's public health and safety.

Barb Joslyn, recipient, was overwhelmed with gratitude. "God bless WOWRA and the members that saw our needs and decided to do something about it. It's easy to talk about it but this group is actually doing something about it."

The design and installation was followed by a public dedication event at W6559 County Road V, Cascade, WI 53011 to recognize all those involved. Attendees included Department of Safety and Professional Services Secretary Dave Ross, State Senator Joseph Liebham, Sheboygan County Administrator Adam

Payne, members and staff of WOWRA, and the extended Joslyn family.

As the only statewide organization of septic system installers, soil tester, designers, manufacturers and related governmental and educational personnel, we aim to represent, service, and protect the collective interests of all WOWRA members. 🌍

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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 at the Pumper Show, 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 Pumper Show.

Errors and Omissions Insurance for Designers and 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.



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Regulator	\$ 60
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Member Type: Year 2014 ☐ Regular ☐ Regulator ☐ Student

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Which is your PRIMARY Category?

Please provide a brief description of your services (25 words maximum) _____

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Payment Information

Amount Enclosed (US\$) \$ _____ Check Enclosed ☐ MasterCard ☐ Visa _____
Credit Card No. _____ Exp. Date _____ Security Code (3 digits) _____

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Billing Address _____
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