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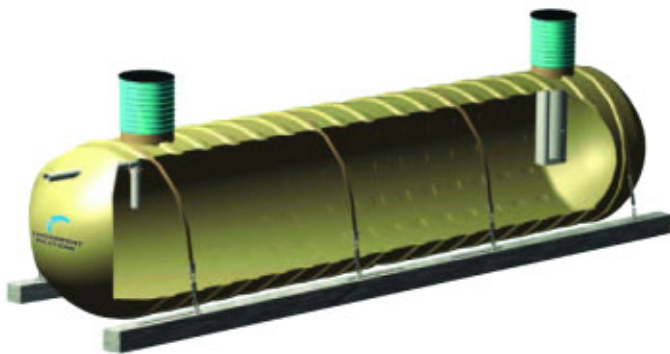
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Vol. 14 No 3

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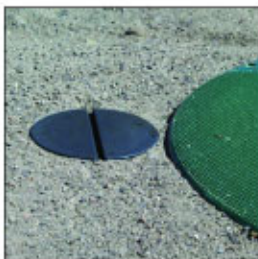
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# ONSITE Summer 2005 journal

NEWS FOR THE ONSITE WASTEWATER RECYCLING INDUSTRY

National Onsite Wastewater Recycling Association

Vol. 14 No. 3

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## OPERATIONS AND MAINTENANCE SERVICES FOR SEPTIC AND ONSITE SYSTEMS

*A Growing Industry Profession*

by Linda Hanifin Bonner, NOWRA Executive Director

With the increasing use of onsite treatment technology and the application of decentralized systems occurring throughout the US, the need for competent, knowledgeable and ethical persons to provide maintenance services is emerging. This demand for a new level of industry practitioners is also stimulated by EPA's guidance to states that onsite systems being installed today must have as a minimum, contracts for a regular service procedure. And, as these systems are being installed for decentralized community infrastructure, the management of these systems also requires quality service providers.

However, as this industry emerges into a new era, there is a dramatic shortage of practitioners to fulfill this demand. As we in the onsite industry are advocating that quality practitioners are available to support these systems, we are at the same time well aware of the need to have a process to ensure that these commitments are fulfilled. We recognize that we have an obligation to provide adequate education and training for those individuals desiring to enter into this service category.

At the same time, even those individuals who currently provide operations and maintenance services on many systems need to have both education and

training. Demonstration of this professional competency will be required by owners of onsite systems. An onsite system today represents an investment of a homeowners infrastructure. And, just as you desire a trained professional to service your truck and automobile, the onsite industry must also provide the trained professional expertise.

The theme message in this issue of the Onsite Journal focuses on the operations and maintenance services of the onsite industry. There are three related features articles about the education and training programs and the professionals who provide this service. One article profiles three NOWRA members who are recognized leaders in the service providers (O&M) profession. They are representative of the "onsite industry professional practitioner" and are the models many aspire to be in providing essential and needed services to communities, industries and homeowners.

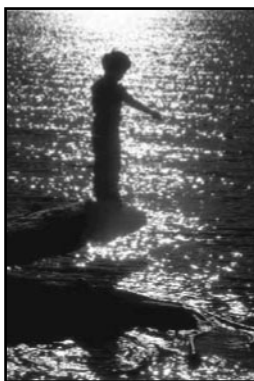
Another feature announces the new certification program offered by NOWRA for this segment of the industry. The NOWRA Certification Program for Operations & Maintenance Service Providers will provide the additional professional training necessary for the competent care of existing and new systems. It gives to NOWRA members the skills needed to grow their businesses

and an important message to customers about their competency.

The third feature addresses the member benefits offered by NOWRA to support members in gaining knowledge and skills essential to maintain their professional business entity. These benefits include the education and training received at the NOWRA state training centers and association programs – as well as the annual conference occurring October 10-13, 2005 in Cleveland, Ohio. Beginning in 2006, NOWRA's education and training programs will be integrated into a nationally-recognized accreditation process.

The onsite industry is changing as it grows – and NOWRA is also changing in the way it provides for its industry members the tools, skills and expertise needed to meet the growing demands for competent and professional services. NOWRA represents all segments of practitioners in the onsite industry from installers, designers, pumpers, service providers, educators, regulators, manufacturers and engineers. Meeting your needs is our business – to make us all successful in achieving our goals!

*Linda*



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# Service Providers “Extraordinaire”

NOWRA profiles three inspiring members

In this issue, we profile a few NOWRA members – onsite service providers – who are well known and considered by many in industry as models of excellence. By using them as examples, is not meant to imply that we are not giving credit to the many, many others also providing similar types of services – far often beyond the call of duty. We will proudly present their story as well in messages to NOWRA members and others reading the Onsite Journal.

At the same time, this is a growing profession that desperately needs qualified and trained individuals, and who also understands the needs of servicing a unique industry. In discussions with NOWRA member service providers, all of them state the need to hire good workers – who are willing to learn and be trained in the technical requirements of operating and maintaining onsite systems. Equally important is the need to balance being a good business person with customer requests – the ability to communicate why service contracts are important and how customers benefit both financially and with peace of mind in the long term.

A typical work-day for service providers is often of 12-14 hours long – in all types of weather – often on weekends and holidays -- answering customers calls for emergencies to making routine check-ups on systems. In between scheduling appointments, there are new installations to get set up and new contracts to be established.

Most businesses have less than six or eight people – some operate from the annex of their homes. Often, they may or may not carry a laptop computer – but, they are highly responsive to customer needs – and above all, they recognize the importance of communication and educating the system owners. While viewed as tedious, they also recognized the value of paperwork and documentation – from negotiating service contracts to following up with information about improvements needed for an owners system.

An important attribute that they all have in common – is that they are happy with their chosen profession – and for many, there were other jobs or professions that they had that led them down this path to the onsite industry.

**Dan Bush – Milwaukee, OR** .... Has been in business as a service provider for 12 years. A former Oregon state and local regulator for over 20 years, he first went to work with Bill Stuth, after retiring as a regulator, and later became a consultant in designing and installing systems. During this period he found he became more involved in responding to customer issues and solving problems. The result is a new profession in the service industry business. And, Dan is a person who truly loves what he does and his work.



*Dan Bush shows us the essential tools of the trade*

As with many providers, Dan’s office is on wheels. He travels around the state in a 2005 Chevy V8 2500 HD Truck with a pull out flatbed. In the past 16 months, he has put on 60,000 miles. But in this truck, are all the supplies and equipment he needs for any type of customer service. As we viewed this display, the only word that came to mind was – Immaculate. He had the most well organized system of equipment on hand to take care of customers – then most plants have. He stresses that there are key tools that are essential to have on hand for this work. When asked about the basic list of equipment needed, he responded with the following item he currently carries.

- Generator
- 200 ft of hose for wash downs
- strap hinges for removing filters - spiral
- shovel, rake, brooms
- cordless drills
- plastic beakers for sampling –

*continued on page 6*



Dan Bush organizes his “business on wheels” for efficient operations

plastic measuring cups

- 20 plastic cases with compartments of parts & pieces
- impellers, indexing values – assembly components – alligator clips
- testers for control panels – pressure gauges for ATU’s
- He believes it is important to invest in good tools – always carries a duplicate set in the event of losing or missing things – or dropping in you know where.
- headlamp for hat

#### Safety equipment – PPE

- goggles for covering eyeglasses
- heavy plastic gloves – elbow length
- latex gloves that are worn under heavy work gloves
- latex coveralls - boots
- germ-free – soap
- Clorox
- eye wash – paper towels – old (clean) rags
- 1st aid box
- spare keys – and of course he stresses – never take your cell phone into field.

Years of experience resulted in developing some specialized equipment that is also on the truck.

- Device made for cleaning laterals that connects tank to pumping station to remove materials which cannot be flushed out
- For site emergencies – sewage found on ground, he has a special sprayer that gets contaminated area covered with a chlorine solution – and a shovel to immediately cover it with soil
- Ratchet end tool that allows for ease of removing a piece within goo
- Thin poly tube with a small brush on the end that serves as a “bottle brush” that has flexibility to clean system tubes

Listening to Dan talk about being a service provider is both an experience in gaining first hand knowledge – but it is also a joy to listen to him share his stories and why he is a very happy professional. And, it shows!

**Trapper Davis, (who’s real name is Kornell) is the owner of Commonwealth Onsite Solutions, located in New Kent, VA.** (not far from Williamsburg, VA.) Like Dan, Trapper is a former regulator, who also saw an opportunity for a special business venture. He has over fourteen (14) years experience in the onsite wastewater treatment field as both a regulator in the Commonwealth of Virginia, and now as the owner / manager of Coastal Plains Environmental Group and as co-

owner / manager of Commonwealth Onsite Solutions After leaving the Commonwealth of VA (Health Dept) he went to work with a company, first as a manufacturer’s equipment representative.

As a regulator in the onsite industry, he enjoyed the opportunity to provide training to new Environmental Health Specialists coming into the soil evaluation and onsite wastewater treatment field. During that period he also sat on the Board of Directors for the Virginia Environmental Health Association and along with others provided guidance and recommendations to the Commonwealth of Virginia Department of Health during the re-write of the Sewage Handling and Disposal Regulations that took effect July 1, 2000.

Within five years, Trapper and his partner Pete, became owners of the company, and changed the direction to build a service business. Commonwealth Onsite Solutions (COS) maintains systems in Virginia, Maryland and West Virginia. Coastal Plains Environmental Group is a company devoted to the management, operation, and maintenance of alternative onsite treatment systems in Virginia. In this capacity, he actively promotes routine service and maintenance for all alternative treatment systems, as well as participates in educational conferences and workshops for the engineering, installer, service provider, and regulatory communities. He also participated in the review of the recently developed “Consortium’s” service provider training program His greatest challenge – getting good folks to be trained in the business.

In addition to operating his business, he is one of the Virginia Onsite Wastewater Recycling Association Board members and active in pursuing changes in legislation in VA to ensure requirements for continuing education and certification.



A separate article is provided by Trapper on his perspective of the industry's need for education and training of service providers.

Another one of NOWRA's dedicated service providers is Eugene ("Gene") Bassett is the owner of E.C. Bassett Construction, Inc. in Edgewood, New Mexico. Gene is also general contractor and a charter member of NOWRA, and currently serves on the NOWRA Board of Directors. He is also a member of the Professional Onsite Wastewater Recycling Association of New Mexico ("POWRANM") and the Florida Septic Tank Association. Gene has attended most of the NOWRA annual conferences and was a participant at the 2000 conference in Grand Rapids where he gave a presentation entitled "Swimming Against the Flow." Gene describes himself as "self-educated" on the subject of onsite installation processes. He installed his first septic system in 1982, and has been installing alternative onsite systems since 1994 for both residential and commercial use. Over the years he has implemented design changes to ensure that his systems are proper for the climate, topography and soil in New Mexico. Gene says that, by necessity, he has become active in lobbying state and local governmental bodies for the enactment of laws and regulations that will improve the onsite industry. Gene served on the task force that wrote the New Mexico Liquid Waste Regulations that went into effect in 1997. He also served on the committee charged with rewriting those regulations, and the new regulations became effective in June 2005. ●

# Onsite Wastewater Service Providers: An Insiders Perspective on Requirements

by K.R. "Trapper" Davis

Service or Operation and Maintenance Provider for onsite wastewater treatment systems is a relatively new business opportunity and practice. As such, there are few companies that perform "service" to onsite treatment systems as their primary business practice, and there is no true standard of service or licensing required of these companies. Many manufacturers of onsite treatment systems require some form of warranty service and inspection by the contractor who installed the system. Typical warranty period may be as short as two (2) years, and may require bi-annual visits.

During the last several months, I have had the opportunity to speak with a number of different company's that are involved in the onsite treatment industry. The knowledge base and type of operations range from basic septage haulage and septic tank pump out, through complete installation and pump out of various onsite treatment systems, and a few who strictly perform required service on one or two types of systems.

I see four types of practitioners or company's currently involved with onsite wastewater treatment maintenance.

**Practitioner I:** Basic Sewage Handler - licensed / permitted by the local health department. The company performs basic sewage pump out with little inspection or maintenance to a treatment system. The individual employee may have base knowledge of system components, but little knowledge of true operation. Most times their knowledge base is incomplete, with the changing regulations and GMP's. Knowledge of the newer alternative

As the growth of the onsite wastewater treatment industry continues to offer new business opportunities, the need for a true standard of service and licensing requirements increases

treatment systems is not up to date, and as a best description, is filled with "folklore" and rumor as to how a particular system operates, or the components required.

**Practitioner II:** Installer / Sewage Handler - should be a licensed contractor, and may hold a valid sewage handler permit from the local health department. The company's primary focus is installation of septic tank / drainfields, with a secondary focus on pump-out / maintenance. May be credentialed or certified for installation of alternative treatment system(s) by different manufacturers. Individual employee may have good working knowledge of system components, but not how a system "operates" and functions.

**Practitioner III:** Designer / Service Provider: an example would be an AOSE/Engineering firm. This firm would have an excellent knowledge of both system components and operation. Does not normally have construction

*continued to page 8*

equipment available for excavation of components that have not been fitted with risers or valve boxes brought to finished grade. Employees performing service may only have a working knowledge of both components and operation. Resources available in-house that have an excellent knowledge base.

**Practitioner IV:** Designer / Installer / Service Provider: This is a full service firm, some specializing in “Cradle to Grave” installation. This firm would have an excellent knowledge in system components and operation. Have construction equipment readily available to access older treatment systems, and the knowledge base to repair and maintain almost any treatment system. Employees all have working knowledge in regards to their individual job description. Some may have no knowledge of actual operation, whereas others have high knowledge of both components and operation.

With four basic levels of practitioners, I see a need for a multi-level certification and credentialing program for those companies that are maintaining onsite wastewater treatment systems. An example would be the following Tier or Level categorization of service:

**Tier I / Level I:** Would be basic inspection and pump out of conventional septic tank systems, gravity flowing to a dispersal field. An example of inspection requirements might be every 3 years, with pump out as required after evaluation. All company’s permitted as a “Sewage Handler” by the Virginia Department of Health should have a minimum of this certification.

**Tier II / Level II:** Would be basic inspection, maintenance, and pump out of conventional septic tank systems, that use a pump or siphon to a conventional dispersal field, or a pressure

dosed dispersal field, excluding drip irrigation. An example of inspection frequency might be every 2 years with pump out as required after the evaluation.

**Tier III / Level III:** Would be basic inspection, and preventive maintenance of alternative treatment systems such as Aerobic Treatment Units, Packed Bed Media Filters, and drip irrigation systems. An example of inspection frequency would be annually, or as dictated by the manufacturer or permit, with appropriate service as dictated by the manufacturer, and pump out as required after inspection.

Certification and training of “service providers” would be conducted regarding the “tier” or level of service the company intends to provide.

*For instance:* a licensed sewage handler may only be interested in performing pump out operations of conventional septic tanks and dispersal fields. These company’s should have training and a knowledge base that would allow them to inspect the basic components of such a treatment system: i.e. septic tank, baffles (inlet / outlet T’s, effluent filters), distribution methods, and other components, and allow for proper determination of pump out requirements (sludge judging).

Another company however may be interested in performing service to a wider variety of treatment systems, to include pump replacement or service of advanced onsite treatment systems. This company and its employees would have to have a wider knowledge base to include an understanding of how and why a certain treatment or dispersal method operates, and the proper maintenance / pump-out procedures. They may operate at a Tier II but require Tier III training.

A third company may only perform service on certain treatment systems, with no pump out capability. This

company would have to have a Tier III knowledge base, with appropriate manufacturer training and would possibly supervise a Tier I or Tier II company for pump out requirements.

A second item to consider is what continuing education requirements should be or would be required for an individual or company to maintain their certification as a Tier X or Level X service provider. Training opportunities are currently limited to, or directed towards the AOSE / Engineering firms and companies installing onsite sewage treatment systems. Though we may consider manufacturer’s training to be continuing education, attending such training may not automatically grant the individual company the status as a service provider.

With the advent of telemetry control systems, I foresee many of the manufacturer’s being selective as to how many companies, or individuals can be service providers and access the system. To maintain a secure telemetry system, particularly one that is web based, the number of users must be restricted. Also, any service provider of a telemetry system will need to have much more in depth training regarding panel diagnostics.

Difficulties in implementing such a program include:

1. We must somehow tie the certification to something tangible, such as the Health Department’s “Sewage Handling” permit or DPOR contractor license. However, there are a few new companies that are providing service that do not have a contractor’s license, as they do not install treatment systems, nor do they have a sewage handler permit as they don’t perform pump-out.
2. We must developing a database to track service provider certification.



tion that would be acceptable to local health departments and state / county jurisdictions.

- a. I believe that it must be available “online” for easy state, local official access
  - b. It must be able to track the corporate service provider and all levels / degree of certification / manufacturer’s certifications – i.e. Company has five employees with varying degrees of credentialing and manufacturer certificates.
  - c. It must be able to cross reference to an individual employee in the event of transfer to another company – i.e. John Smith obtained a Tier III certification and manufacturers certification for P-Flow systems, allowing XYZ Inc to perform service on these systems. Mr. Smith now departs XYZ Inc to go to work for ZYX Corp.
3. Adoption of a service provider training curriculum and certification process. (i.e. NOWRA / Consortium Training Curriculum)
  4. Development of continuing education requirements.
  5. Eventual licensing by state departments
  6. Insurance / bonding requirements?
  7. Development of a written or practical test to determine minimum acceptable knowledge that is linked to a standards of practice.

With this system in place, the industry has the ability to provide competent professionals and quality service. ●

Deadline date for the next  
*Onsite Journal* issue –  
**Focus on Education  
& Training**  
– is **October 14, 2005**

# AN INDUSTRY ACHIEVEMENT

Completing a marathon schedule that produced a valuable contribution to the decentralized wastewater industry, consortium members debuted in July the long-awaited Operations & Maintenance Service Providers education and training course. For three days (27-29) ten industry practitioners, participated in a “Train the Trainer” program, which now provides them with resources to conduct these training courses. Course trainers now include: Jim Converse (WI), John Buchanan (TN), Dan Bush (OR), Dave Duree (MD), Linda Hanifin Bonner (MD), John Thomas (WA), Barbara Rich (OR), Mike Treinen (CA), Scott Miller (CA), (Kit) David Rosenfield (CA)

Under the leadership of Dr. Bruce Lesikar of the University of Texas, Consortium Trainers and course material developers included Nancy Deal (UNC) George Loomis (URI), Kitt Farrell Poe (AZ), Courtney O’Neill (TX), Dave Gustafson (MN), Mark Gross (AR), David Kalen (RI) and John Thomas (WA). Also participating in the development of materials was David Lindbo (NC) and Jerry Stonebridge (WA). The O&M Service Provider education and training program was accomplished with funding from the US EPA through the National Decentralized Water Resources Capacity Development Project and administered through the Water Environment Research Foundation.

Developing the course materials included significant involvement from industry practitioners. The “writing team” pursued an intensive process of ten, week long, 18-hour a day marathon work sessions during the past two years. In between these sessions, other industry practitioners volunteered their time to provide valuable critique and

The long-awaited  
“train the trainer”  
course – a 3-day  
education and training  
session for operation  
and service providers –  
debuted in July.

input to the writing team on the workability of the materials and products.

The results are that now there is a process in which industry terminology will become standardized, professional standards will be advanced, and service providers properly trained. WHO BENEFITS? Everyone from the owner of systems to the average member.

Consortium materials include a service provider manual, operational check-list forms and presentation powerpoints. Trainers materials include instructors manual, power point and CD materials. Currently, only consortium members can receive the materials and those persons completing the “Trainer Program” will conduct education sessions for industry practitioners. The consortium is examining a contract with Mid-West University Service to assume production of the materials and provide annual updates. NOWRA’s plans for an O&M Service Provider Certification Program will be presented in October.●

# NEIWPCC Now Conducting Massachusetts's Onsite Wastewater Training and Exams

by Tom Groves

NEIWPCC's role in wastewater training in Massachusetts continues to grow. In addition to leading a consortium that is running the state's wastewater operator certification and training program, NEIWPCC is now coordinating the Massachusetts Title 5 Onsite Wastewater Training and Examination of Soil Evaluators and System Inspectors. In April 2004, the Massachusetts Department of Environmental Protection transferred the programs to NEIWPCC, which will conduct the training and exams as well as chair the Committee that was established to oversee these efforts. The Onsite Advisory Committee includes representatives from MA DEP, the Massachusetts Health Officers Association, the Natural Resources Conservation Service, and other interested agencies.

The demand for the programs was evident from the long waiting list of applicants that had been compiled since MA DEP last offered the training. The Soil Evaluator training emphasizes soil morphology principles, and consists of three days in the classroom, three days in the field, and a one-day combined written and field exam. The goal is to enhance the design, review, and approval of onsite wastewater systems throughout the state.

The System Inspector training certifies individuals to conduct the septic system inspections that Massachusetts requires when a house is sold. Attendees spend

one day in the classroom, then take a half-day written exam. All certified Soil Evaluators and System Inspectors are placed in a database on MA DEP's Web site.

NEIWPCC's assumption of this new role comes amid growing awareness of the importance of onsite training. There are more than 1,900 Soil Evaluators and over 3,600 System Inspectors statewide. Presently, there is no continuing education requirement or relicensing of Soil Evaluators or System Inspectors in Massachusetts.

Since the transition, NEIWPCC has conducted eight System Inspector courses and four Soil Evaluator courses statewide to rave reviews. Details on the schedule are available on the Onsite Training page of NEIWPCC's Web site (<http://www.neiwpcc.org/massonsite.htm>). For more information, go to MA DEP's Title 5 Training Web page (<http://www.mass.gov/dep/brp/www/localoff/training.htm>).

Tom Groves ([tgroves@neiwpcc.org](mailto:tgroves@neiwpcc.org)) is NEIWPCC's Director of Wastewater and Onsite Programs. ●

## LOTS TURNED DOWN FOR CONVENTIONAL SEPTIC SYSTEM?

### The Solution ....

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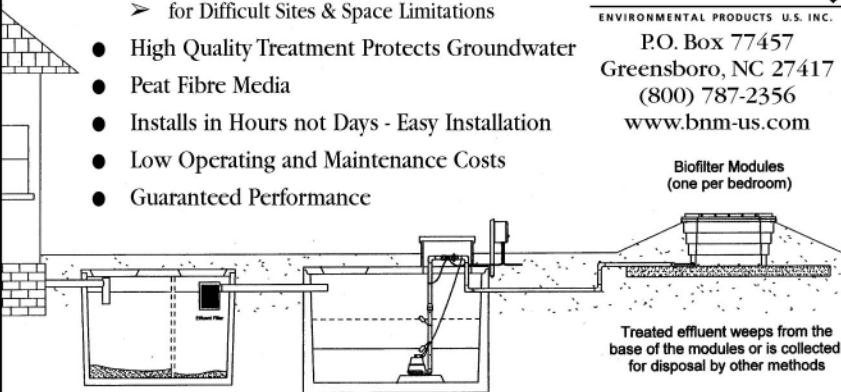
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# NEIWPCC Second Short Course Features Experts and Exhibitors, Draws 350+ Attendees

by John Murphy, NEIWPCC

For those involved with onsite wastewater treatment systems—or septic systems, as they're commonly called—the place to be for three days this spring was the Mystic Marriott Hotel and Spa in Groton, Connecticut. That was the site of the Second Northeast Onsite Wastewater Treatment Short Course and Equipment Exhibition, cosponsored by NEIWPCC and a diverse group of New England agencies and industries. Held on March 29-31, the event was an overwhelming success, attracting more than 350 attendees, many of whom were local officials who normally don't have the opportunity to attend such programs.

The conference carried the theme "Onsite Systems: A Permanent Wastewater Solution" and featured the latest in onsite/decentralized research and technology as well as wastewater management solutions. Through the short course concept, attendees received comprehensive instruction in basic fundamentals/soil properties, pollutant removal, management, and technologies. They heard from national and regional onsite experts such as Dr. James Converse of the University of Wisconsin-Madison, who delivered the

The Second Northeast Onsite Wastewater Treatment Short Course sessions were packed as national experts presented the latest information and research on onsite science, management, and technologies.

keynote address on challenges facing the industry. Notable moments included a presentation by Bill Stuth of Aquatest on a restaurant repair project in a sensitive shellfish area in Washington state and a talk by Dr. Steve Jones of the University of New Hampshire on an innovative procedure for tracking bacterial sources using E.coli ribotyping.

Throughout the conference, the exhibit area drew crowds eager to see and learn about the latest in onsite technology from the 45 exhibitors. Also popular were the three optional field trips: Attendees had a choice of visiting the University of Rhode Island Onsite Wastewater Training Center, seeing demonstrations at two sites in Connecticut of the newest tools for inspecting onsite systems, or touring advanced commercial systems in Connecticut.

The proceedings from the conference are being put on CD and will soon be available through NEIWPCC. Information on ordering is available on the conference Web page ([www.neiw-pcc.org/onsiteshortcourse05](http://www.neiw-pcc.org/onsiteshortcourse05)), which also features additional photos of the event.

Planning has already begun for the Third Northeast Onsite Short Course, which will be held in March 2008. Mark your calendars! ●

**John Murphy** ([jmurphy@neiwpc.org](mailto:jmurphy@neiwpc.org)) is a NEIWPC Environmental Engineer.

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## CLUSTER SYSTEMS:

# WASTEWATER TREATMENT SOLUTIONS FOR TODAY'S COMMUNITIES

By: Dennis F. Hallahan, P.E., Technical Director, Infiltrator Systems Inc.

### Introduction:

Small cities, townships and counties face many complex issues when it comes to wastewater treatment. Communities with centralized sewers that discharge to surface waters have been identified as a source of many pollution problems. Also at risk is community identity as the urban sprawl that inevitability follows the sewer can change the complexion of a community very quickly. Cluster systems are proving to be an invaluable solution in providing communities with high quality, cost efficient wastewater treatment, while protecting the character of the community.

Cluster systems over the last decade have gained much recognition as a viable solution for community wastewater management. Due to the increased interest, the U.S. Environmental Protection Agency provided funding to the National Decentralized Water Resources Capacity Development Project (NDWRCDP) to publish the *Cluster Wastewater Systems Planning Handbook*. According to NDWRCDP, "this handbook is designed to serve as an executive roadmap for the successful planning, design, and implementation of cluster wastewater systems."

### The Cluster Systems of Today

There are many definitions of a cluster system; however the handbook has a good definition that seems to be consistent with many references. It says

that cluster systems serve an intermediate number of structures with more than one and as many as hundreds of connections (per ref. 1). Cluster systems are also known as community systems or shared systems and offer a unique solution for wastewater treatment where traditional onsite systems (a single system for each structure) or the extending of sewers are not viable.

Cluster systems come in many shapes and forms, which can be selected based on a site's soils, groundwater and bedrock elevation, topography, and regulatory requirements. Similar to individual onsite systems, cluster systems typically treat and dispose of effluent within the development limits. Subsurface, non-point discharges are the norm, however surface discharge is also an option. One of the benefits with cluster systems is that they offer a wide range of methods available to collect, treat, and dispose of the effluent. This allows the designer to choose the most cost-effective technology that is appropriate for the community.

### Community Opportunities

The opportunities and benefits presented to communities by the cluster system approach are significant. Many communities have master plans that detail the growth patterns within the community with the primary goal of maintaining community character. In many cases, these plans become idealistic goals once a conventional sewer system is installed. Historically, growth has followed sewerage resulting in urban sprawl. Cluster systems allow controlled development. The

community can have the best of both worlds by maintaining its character and increasing its tax base. This sustainable development model is gaining attention with community designers, developers, and regulators nationwide.

Environmentally sensitive sites are especially well suited for cluster systems. The treatment component of the cluster system can be designed to treat to a higher standard than a conventional onsite wastewater system. It is extremely valuable in the removal of constituents of concern such as nitrogen in saltwater bodies or phosphorous in freshwater ecosystems. In addition, the treatment and dispersal components can be located in a more environmentally protective location. This might mean installing the cluster system up and out of the flood plain, in a location of deeper/better soils, or a greater distance away from a water body.

If a cluster system has a subsurface disposal component, then that can be an environmental improvement over a surface, point discharge approach. Cluster systems allow the recycling of the water within the same watershed. This can sustain the water balance within the watershed and avoid inter-basin transfers of water.

Another environmental safeguard inherent with cluster systems comes in to play if the treatment component malfunctions. Sewers are part of an aging infrastructure. Older



sewers with piping that is decrepit and leaking are commonly discharging to groundwater causing water supplies to become contaminated from sewers that leak or depleted from sewers that have infiltration.

Although rare, malfunctions in treatment with cluster systems are typically of a lesser magnitude than is the case with large-scale wastewater treatment plants. With a subsurface dispersal component, the effluent is applied to the upper soil horizons. Here, it can take advantage of the tertiary treatment potential of the soil, a host of natural bacteria and fungi, and the vegetation, which will take up water and nutrients.

A traditional gravity sewer's collection system can be a financial burden for a community to construct and maintain. These systems are much more efficient for the smaller capacity of a cluster system. This construction alternative minimizes the chances for "I&I" (Infiltration and Inflow). An USEPA source gave the following recommendation, "*For collection systems, alternative, small diameter sewers should be used wherever possible. These systems are one of many important developments in wastewater technology in many years. Properly used, they can represent an impressive savings over conventional sewers.*"

### Management – The Most Vital Component

There are many components critical to the success of any wastewater management system including siting, design, installation, and management. Management is just as vital as all of the others, but traditionally it has been the Achilles Heel for cluster systems. Public perception may be the biggest barrier prior to installation, but once the system is installed, management becomes the vital component. "EPA's

initiative on Decentralized Wastewater Systems recognizes that management of the system is usually the most important factor when failures of these systems are examined." (Per reference) The USEPA lists five different management programs (or levels) in its publication *Draft Management Handbook for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems*.

Due to size efficiencies and differing regulatory requirements, cluster systems may offer less intensive O&M and are therefore more economical to operate. Also, cluster systems typically only require visits by an operator 2-3 times per week for 2-3 hours. Advances in technology via web-based remote monitoring or telemetry have raised system management to a new level of efficiency and automation. The system can be monitored around the clock. If there are problems, the provider is notified immediately.

As part of the local approval process, the developer can contract for system management for the initial startup period (1-2 years) Then, the system can be turned over to the municipality or district. At that time, the municipality (or existing utility) has a new system paid for by the developer as source of income to fund the necessary O&M.

### Conclusion:

#### ***Cluster Systems – The "new" option***

Cluster systems are not new, just more viable given today's economic, environmental and community needs. The end of the Clean Water Act means, "the free lunch is gone." Billions of dollars that were once available have been replaced with lesser "grants" which are required to be paid in full. When sewers are put under these new economic criteria, there is a paradigm shift to onsite

treatment. In part two of this article, two case studies will be presented which illustrate how communities are turning to cluster technology as an economical and effective solution to their septic system needs. ●

*The Author: Dennis F. Hallahan*

Mr. Hallahan has over sixteen years of experience in the design and construction of onsite wastewater treatment systems. 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.

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# STEP Ban Not in Ratepayers' Interests

Grant Denn, Systems Engineering Manager, and Sandra Huffstutter, Corporate Communications Manager, Orenco Systems®, Inc.

On February 15, 2005, the Olympia, Washington City Council approved a resolution to enact a six-month moratorium on new STEP Sewer Systems. On July 19, the moratorium was converted into a ban.

The City Council's actions were the result of recommendations by the City's Public Works staff. In requesting the moratorium last February, Andy Haub, Olympia's Stormwater Engineering Supervisor, said (according to Council minutes) *that it was urgent that Council consider a moratorium on STEPs and noted that of the approximate 6,000 new applications for single-family homes, 35 to 40 percent were asking for STEPs instead of gravity systems.*

After the Moratorium was imposed, Olympia posted a "STEP System Moratorium Fact Sheet" on its Web site, claiming that the problems with STEP systems include the following:

- More costly to operate and maintain than conventional gravity systems (with sewer rate payers carrying the burden of the additional costs)
- Odor problems that are difficult and expensive to solve
- Effluent leaks and groundwater contamination

After the moratorium was imposed, Olympia commissioned Brown and Caldwell to evaluate comparative costs between STEP and gravity sewer systems. Apparently, that report was presented at a June 21 Land Use and Environment Committee meeting that was nominally attended. The June 28 City Council meeting moved closer to a STEP ban. Two representatives from

Orenco were at that meeting, obtained the Brown and Caldwell report and, the next day, took issue with its accuracy. Orenco was invited to submit a written response and subsequently did extensive analysis of City documentation, then presented its own cost analyses and conclusions at the City Council meeting on July 19. Nevertheless, that evening City Councilors unanimously approved a ban on new STEP systems.

Orenco's research and analysis show that the comparative costs provided by Olympia staff and the City's consulting engineer are completely backwards. STEP sewer systems are cheaper to maintain than conventional gravity systems and pose far fewer environmental concerns. Orenco's analysis of Olympia's cost data is consistent with similar findings around the country.

So how did the City and its consulting engineer arrive at their conclusions?

- By **understating** gravity sewer maintenance costs in rights-of-way by 90 percent.
- By **omitting** high gravity sewer treatment costs.
- By **omitting** huge gravity sewer R&R (renewal and replacement) costs at year 20 and year 50.
- By **inventing** an "administrative" fee for each STEP connection that is 10 times higher than for gravity connections.

The first factual error, alone, affected Brown and Caldwell's findings so dramatically that it should have prompted Olympia to reconsider its analysis of STEP sewer costs. But there are literally dozens more errors, which explain why the consultant's report wrongly concludes that Olympia's STEP sewer

## Editor's Note:

In some parts of the country, developers have embraced STEP sewer systems to such a degree that regulatory agencies are seeking to slow their spread via regulatory action. This is happening in Tennessee, in Arkansas, and in Olympia, Washington, where City officials recently imposed a ban on new STEP sewers after determining that 35-40% of new permit applications were requesting STEP connections. Following is Orenco Systems' response to Olympia's STEP sewer ban. This article may give you some ideas for investigating and responding to similar allegations and regulatory actions, if these kinds of issues surface in your area.

systems cost more to operate than the City's gravity sewer system. When all the missing gravity sewer costs are taken into account, STEP systems are cheaper to operate and maintain. *In fact, it's likely that Olympia's STEP sewer customers are subsidizing gravity sewer customers by a factor of 2 to 1.*

Other claims by City of Olympia staff are equally faulty. For example, the City claims that 90 percent of sewer utility calls are STEP-related and that one City staff person has to work full time on STEP maintenance. However, even the City's consultant noted that only 10% of STEP calls require any action, which equates to about one hour per week. That's probably why, as of July 2005, the voicemail for this "full-time" City staff person states that he is also responsible for maintenance of the City's storm water system and for removing FOG (fats, oils, grease) from the City's gravity sewer system.

A close look at Olympia's Annual Financial Reports provides even more

evidence that STEP systems do not account for 90 percent of sewer utility calls. For a three-year period, 2000 to 2003 (the last year that complete records were kept), there were 203 emergency STEP system call-outs and 208 emergency call-outs for the City's gravity lift stations.

The City has also claimed that STEP sewers create odors and environmental risks. In private meetings and in a recent public hearing, Public Works Department managers conceded that odor management is required of BOTH systems, and environmental risks are not an issue with STEP systems. Yet both claims remain on the City's Web site and the STEP sewer ban continues on.

Obviously, those of us who know better are incensed. But why should Olympia's citizens be incensed too?

Because they are ratepayers! Since STEP systems are more economical than gravity systems, requiring all new subdivisions in Olympia to install higher-cost gravity sewers will ultimately mean higher costs — and higher wastewater rates — for everyone. The buck stops with Olympia's citizens.

Admittedly, Orenco's views are not unbiased. For 25 years, our company has advocated affordable, versatile, environmentally sound STEP sewer systems. We've published and presented extensively on the subject, we hold numerous patents, and we design and manufacture STEP sewer equipment, including the equipment used in Olympia. So of course, we have a financial interest in Olympia's STEP moratorium.

But more importantly, we have a broader interest. We also have experience in the design and construction of gravity sewers, and we know that gravity sewers ARE more cost-effective in some situations (high-density, favorable terrain, no groundwater). And STEP sew-

ers ARE more cost-effective in other situations (low density, rocky terrain, high groundwater). We believe that...

- City planners should have *both* options available to them.
- City planners should know the *real* costs of both options.
- City planners should hire *independent third-party consultants* to help them make good decisions.

Why do we advocate for independent third-party rate consultants? Because consulting engineers who are hired to make technology recommendations for engineering projects and then are permitted to bid on those projects face an inherent conflict of interest. Engineering firms typically charge their clients a mix of lump-sum costs and percentage fees that total about 15 percent of the project's overall cost.

And 15 percent of a high-cost technology is more profitable than 15 percent of a low-cost technology, like STEP.

Here at Orenco, we honestly can't figure out why the City of Olympia is continuing to pursue its ban on new STEP sewers. We've provided ample evidence that the ban is not in ratepayers' interest. And it's clearly not in the environment's interest, since Olympia's gravity sewers have spilled hundreds of thousands of gallons of raw sewage


over the past few years.

We have even offered to take over the management of Olympia's STEP sewers, if the City feels, for whatever reason, it would rather not take care of them.

Maybe it's time that the City heard from its ratepayers, instead of from Orenco. ●

*If you would like the complete text of Orenco's written rebuttal to the report issued by the City of Olympia's consulting engineer, go to [www.orenco.com](http://www.orenco.com) and click on "About Orenco," then "In the News," then "Manufacturer's Report States Olympia's Gravity Sewers Annually Cost Twice as Much as STEP Sewer," then select "Click for a .pdf file of Orenco's report to the Olympia City Council (1.9 MB)."*

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# NOWRA MEMBERSHIP SERVICES 2006 DUES INCREASE

During several state group meetings over the past year, the topic of raising the member dues rate was discussed and issues relating to member services addressed. Several states acknowledged agreement for the need to begin to bring NOWRA member dues back to the 2000 rate of \$40.00 on a gradual basis. The Executive Director explained the history of how the \$40.00 member dues rate was cut in 2000, and financial impact it has had on the associations operations over the past three years. The costs to support a doubling of members in the last several years has positioned NOWRA with a unique opportunity and a defined need to manage the cost benefit of expanding member services.

At the Annual State Leaders meeting (Kansas City, April 4-5, 2005) members requested additional information in which to better understand the costs for NOWRA to provide “member services.” State leaders will use this information to better communicate with their members the basis for their recommendation to support an increase. NOWRA has significantly expanded its member services in the past three years, as well as more than doubling its membership. Projected membership increases in 2005 are expected to be 20%.

Based upon the recommendation of the NOWRA State Leaders attending the April 5th meeting, the NOWRA Board of Directors voted on June 12, 2005 to increase the member fee charged to states from \$20.00 to \$30.00 in 2006. In addition, the Board agreed with the State Leaders recommendation and approved to include a listing of all NOWRA members within the “Online – Products & Services Locator,” as an essential member benefit. This means

that the \$350 annual charge for this listing will not occur in 2006. All members will be provided with a basic listing – similar to an online directory. If additional advertising enhancements in the form of logos, website links is requested, a separate fee will be required.

## ***Member services that you can access today!***

Currently, NOWRA member services include activities that ultimately benefit and enhance the value of being a NOWRA state group and member.

Communication/Education/ State Association Development support/ Technical Practices focuses on:

- Access to the NOWRA website for education materials and participating in NOWRA training program activities.
- All members receive the Onsite Journal – monthly internet “E-Messages and Program Updates
- Discount rates on education programs and conference sessions.
- Free website hosting and technical support services
- Access to Directors & Officers liability insurance program
- Membership recruitment and management support
- Education & Training programs on request with revenue sharing
- Business member listing on NOWRA’s Online Locator (available to all members 2006)
- Officer presentations and materials provided at state meetings and events
- Participation in NOWRA’s State Leaders Committee – whose mission is to provide guidance and advice to NOWRA’s Board of Directors on actions to pursue on behalf of industry members.
- Strategic planning facilitation, budgeting and program development assistance
- Representation at state & national agencies on issues affecting member interests
- Supporting State Groups with technical experts and resources for its legislative and other programs.
- Initiating steps to change existing codes that support and enhance the professionalism of the industry sectors.
- Building Coalitions with businesses and organizations affected by onsite industry such as the Rural Community Assistance Partnership, the national homebuilders association, realtors and financing institutions.
- Developing a stronger state presence in meetings to protect onsite business interests.
- A special section now exists on NOWRA’s website where all support documents are available for NOWRA state group organization and operations.



### New Programs in the Works!

Additional member services are being organized that will include a health and life insurance program, membership recruitment training, materials and support. In addition, NOWRA's organization of the state leaders group has resulted in monthly meetings via teleconference calls; an annual state leaders meeting, and second workshop at the NOWRA annual conference. A mentoring program among state leaders is underway with support and sharing of ideas, materials and strategies. A new program for managing training has been launched this summer.

### Where does all the Money Go?

A major portion of NOWRA's budget is for the operation of the Association. Staffing for states and members services are provided through the management staff of Hanifin Associates with Linda Hanifin Bonner as Executive Director, Helen Curry, Bookkeeper, Reta Ward and Annette Higgs as program managers. Francis Hammersmith provides coordination of advertising and marketing of NOWRA's products. Responsibilities of the Executive Director include:

Categorize these with headings if you can to link them to the issues that are important to the states: ie/ State Association Support/ Education Support/ Conference Support/ Administrative support.....others?

- Implementing the actions identified by the association to fulfill its mission - managing staffing assignments, maintaining budgets, defining issues requiring priority or attention of Exec Committee or Board, keeping the association on a cost-effective customer service base, and maintaining performance on job tasks.
- Organization & staffing support to Exec Committee, directors and committee chairpersons for meetings, responding to requests, scheduling and presentations
- Proposal preparation and grant writing, research leads and pursue new funding opportunities, defines new strategies for board action, secures meetings with potential sources, produces letters, prepares marking materials, makes phone calls and follow-up contacts.

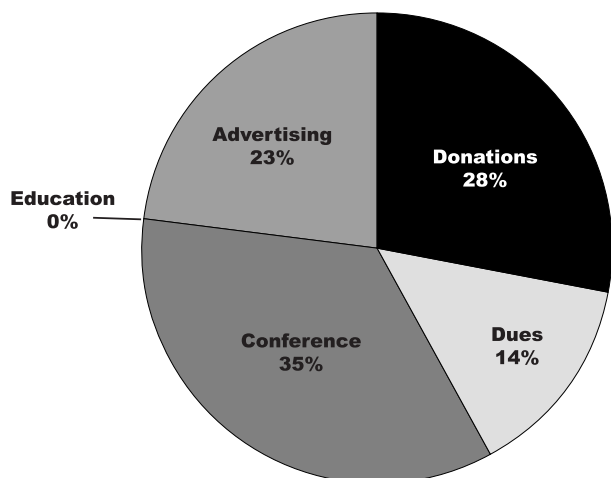
- Membership recruitment for states and national programs.
- Negotiating conference and program contracts, develops budget & pricing - program venue; interacts w/education committee to produce technical program; conference committee on local events & activities; develops and produces all marketing & program materials
- Overall direction, writing, editing of all publications; recruitment of articles, defining content, layout of sections, and developing annual plans for the coming year.

Responsibilities of the staff program managers includes:

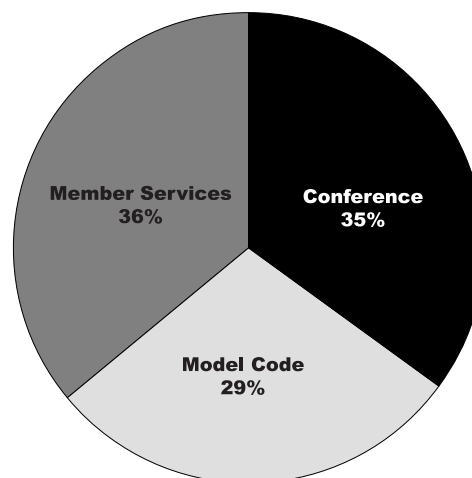
- In-house management of NOWRA's website content - setting up company data in website; confirmation of information and establishing associated web links; and working with NOWRA's technical contractor on website transition and upgrades.
- Processing and managing all membership data and responding to member needs through the website and telephone requests

*continued to page 18*

### NOWRA 2004 Income



### NOWRA 2004 Expenses



continued from page 17

- Supporting the Executive director in the work with state leaders on program plans, membership marketing and affiliation with NOWRA - addressing organization details & logistics to get new state groups established and promotion of NOWRA's education and training programs
- Attending to all production, printing coordination details as well as mailing and distribution of all NOWRA materials
- Providing support and maintaining contact with NOWRA business interests regarding advertising and conference exposition and other financial support - handling logistics and servicing of business members -- particularly in preparation for conference expo, interacts with Expo contractor.

Management of all financial transactions include:

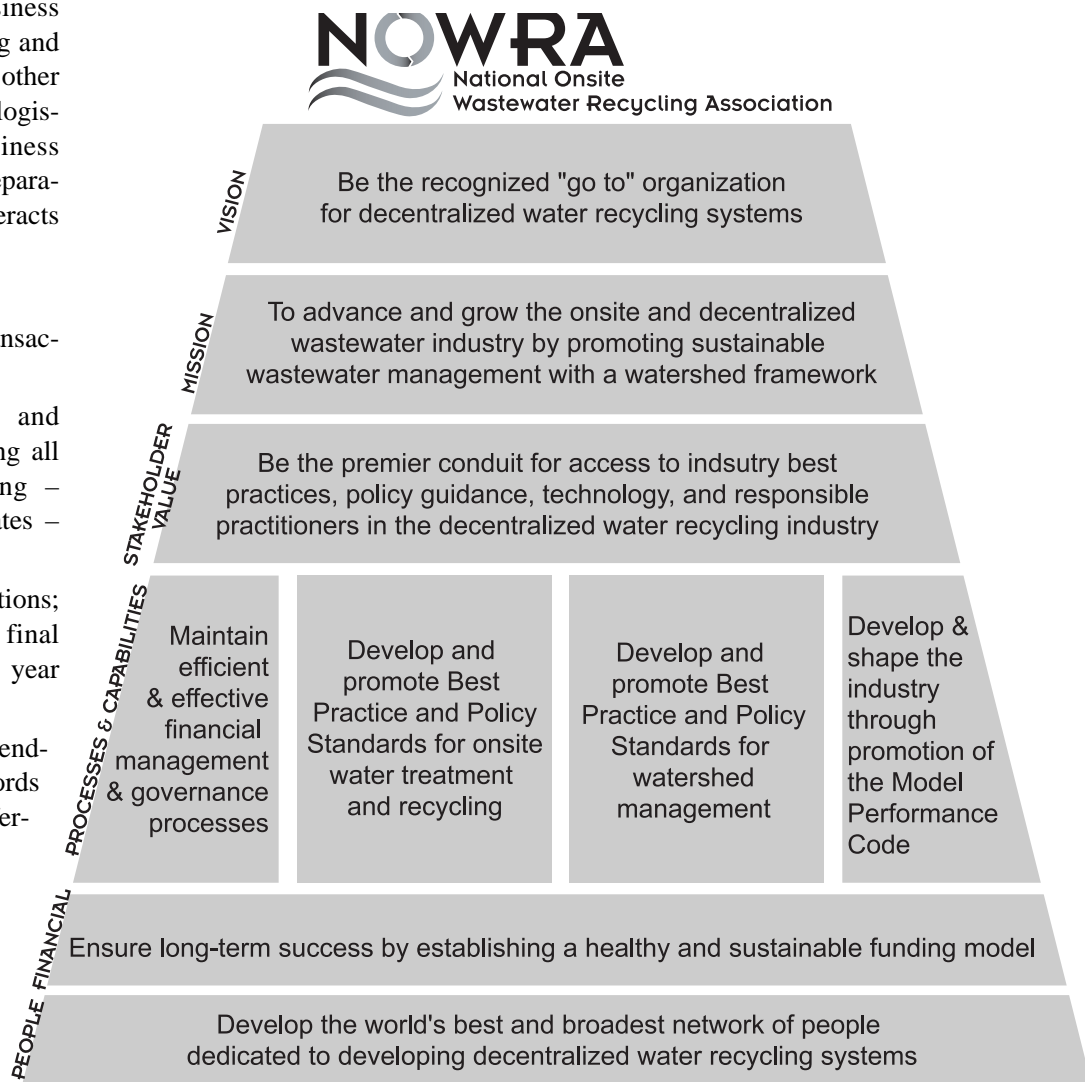
- Maintaining receivables and payables accounts, reconciling all checking accounts, invoicing - membership, advertising, states - preparing financial reports
- Tech review of all transactions; budget support; preparing final monthly reports & end of year preparation for CPA
- A major level of effort is expended just with membership records and the NOWRA annual conference finances.

**A Common Sense Approach to Growing Your State Organization**

To assist NOWRA State Leaders in membership recruit-

ment and growing their associations, a special training workshop is also scheduled occur on Saturday, October 8, 2005. This session, occurring prior to the 14th annual conference, will provide state groups with the tools and information needed to identify the benefits of belonging to NOWRA and the affiliated state group.

In a special letter signed by President Raymond Peat and Vice President Jerry Stonebridge, the Board expresses its sincere appreciation to the state leaders group for their your valuable support and commitment to the onsite industry. They emphasized that the Board will continue to persevere to maintain your support, and to listen to member needs. ●



# NOWRA'S FUTURE – THE EVOLUTION OF A NEW STRATEGIC DIRECTION

Beginning in March, NOWRA Board members have embarked upon discussions and examinations of issues facing the onsite industry and the strategic direction and activities NOWRA should pursue on behalf of its members. With the support of facilitator, Terry Brown, these sessions have continued through the months with members spending two days in Minneapolis in late June. From the first session, the Board drafted a new mission statement, supported by four pillars of principles, from which a strategic direction has emerged. From the second session, the following priority projects were selected that addressed both short and long term needs.

**Education materials, development & training and delivery.** This project focuses on the development of association materials that are “owned” by NOWRA for use by states training programs. A budget will be developed for 2006 taking into account the production costs of materials, needed support of NOWRA office staff and marketing activities. For the current year, development of these items will be integrated into the NOWRA conference program. As an example, the 1st project is NOWRA Updated Onsite Systems A to Z which will be presented this year at the NOWRA Conference in October 2005. The next program will be the development of installer training materials (for the December program). These two programs begin the establishment of a “NOWRA Library” of education and training materials for use by states and member programs.

**Develop of Business Partnerships.** This project focuses on a major outreach program to those businesses that are affected by the work of the onsite industry. The initial effort will occur at the NOWRA 2005 Conference with the 1st “Business Roundtable.” This program addresses the industry’s economic and research activities and collaborative projects. A task force, chaired by Brenda Guy, will development the framework and implementing activities for the roundtable for the NOWRA 2005 conference, and necessary materials. Brenda identified the teams of people to be part of the effort – (a) people will be working on presentation infor-

mation (b) group working on the list of companies (c) roundtable agenda – all for approval by board. Phase I will focus on getting roundtable organized, and that this initial outreach effort critical and supports giving birth to the proposed business council

**Model Code Consulting Services.** The purpose of this project is responding to the states for services to provide technical assistance on state code reformation. Discussion on the approach included viewpoints on whether the states will pay for this service and the effectiveness of this program for NOWRA.

**NOWRA Installer Education Program and Tradeshow.** This program is targeted to provide a special two day education and training program for installers and the service industry. Its purpose is to meet the important needs of these practitioners. Because busy schedules often preclude activities during good weather months, this program will occur in the winter month, in a warm location such as Las Vegas, NV. President Raymond assumed the lead role for organizing the program with the education and communication & marketing committees. This is the type of program that has been requested by NOWRA state leaders.

President Raymond Peat stated his belief that these efforts can now move forward because they have champions in place that will assume responsibility

for their direction. Board members are in agreement that more people outside of the Board need to get involved in NOWRA’s work, and that through these immediate projects this effort will get underway.

## Other June Board Meeting Actions

Matt Byers reported that the work of the Technical Practices Committee, for the conduct of the water conditioning symposium is well underway and that the planned session is a tremendous start to a great program. Bob Mayer is completing work on the drip standards; and the committee will support the Education Committee in reviewing the technical aspects of the conference papers. He also elaborated on the June 8th meeting at NAHB Research Center with the Executive Director as an excellent opportunity to open doors for collaboration on several projects benefiting NOWRA members and the NAHB.

NOWRA Participation in 2005 Conferences of partnering associations was approved by the Board. Participation in these programs is to promote NOWRA’s work and resources to a broader range of audience, and requires funding for staff travel and materials.

- National Environmental Health Association (NEHA) – June 24-

*continued on page 20*

*continued from page 19*


28, 2005, Providence, RI. This group represents members of the health departments and agencies throughout the US and Canada.

- Rural Community Assistance Partners (RCAP) – August 24-28. This group represents the professionals who are working with small communities to provide technical support for infrastructure needs. Education Committee Chairperson, Sara Christopherson will represent NOWRA, as she is on the program with a presentation.
- National Association of Towns and Townships (NATAT) – Sept 9-12 (Washington, DC). This association represents more than 55,000 public officials throughout the US
- WEF Tech (Water Environment Federation) – October 26-30 (Washington, DC). This organization represents 40,000 technical professionals in both aspects of the decentralized industry.

**NAHB Research Center Discussions.**







The Board authorized the Executive Director continue the dialogue with the NAHB Research Center, and to provide further recommendations on future collaborative efforts. Specific comments noted that these discussions can be used as opportunity for larger dialogue to facilitate an understanding about the decentralized industry – e.g., future summit conferences.

NOWRA's Board meets monthly via teleconference calls. All meeting reports are posted on NOWRA's website. The next group meeting occurs on Sunday, October 9th, 2005 at the NOWRA Conference Hotel, Cleveland Renaissance Hotel, Cleveland, Ohio.



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## Biographical Information on NOWRA Candidates

Mary K. Clark | John E. McCray, PhD | Kornell "Trapper" Davis | George Loomis | Phil Lundman | L. Martin McElhenny, P.E. | Mark Hooks RS, CPM | Theo B. Terry, III, RS | Howard Wingert | William "Pres" Allinder, P.E., P.L.S

### Candidate Name: Mary K. Clark

#### Profession, Position & Title

Project Director Stone Environmental, Inc. (Stone) (9 years) for municipal systems, conducting needs assessments and feasibility studies; water quality sampling, modeling and risk assessments soils, site and hydrogeological evaluations for cluster systems; and developing community wastewater management plans. She has a B.S. degree in Natural Resource Conservation, University of Connecticut.

#### Years within onsite industry and/or relevant expertise and credentials

30 years of experience in the onsite industry (in 2006), beginning as an engineering technician (7 years), conducting site evaluations, preparing design plans and specifications, and conducting inspections during installations. A former Vermont state regulator, and Assistant Regional Engineer (7 years), reviewing and approving onsite and municipal water and wastewater system designs, troubleshooting problems, and upholding enforcement efforts. Also had own business as a Certified Site Technician (6 years) preparing small system water and wastewater design and construction services.

#### Board Category - Engineer

#### Commitment to Board Position

I greatly respect the organization and believe it is the leader in promoting decentralized wastewater treatment topics in this country. I have been a part of the annual conferences since 1999, and an indi-

vidual member since 2002. I understand the position involves participating in 4 meetings including a strategic planning workshop; working with state groups, NOWRA committees, and special task groups; and providing guidance and recommendations to the Board on current industry issues.

#### Specific area of Interest

My areas of interest include soils and hydrogeology; water quality impacts to groundwater and surface water; education and outreach; operation and maintenance from a property owners perspective; community wastewater management including financing.

#### Industry Contribution

My passion has been in developing fact-based community wastewater management plans and providing the outreach to have a community understand and accept the conclusions, and move to adopt and implement plans. Changing the approach on how to conduct feasibility studies to evaluate need and compare options for solutions is needed throughout this country (and beyond). It is becoming more and more difficult to fund decentralized projects, mainly due to the costs versus number of users is disproportionate and unfeasible, and unless there is a direct connection between the onsite system and surface waters, grant funding may not be available. With limited state and federal funding dollars, rural communities will be left behind unless a new paradigm is adopted. I think NOWRA can tap into its knowledgeable membership to help solve this major issue.

#### Direction for NOWRA as an Industry Leader

At Stone I have been able to expand my message on education through community assessments and national conferences such as NOWRA. There still is lacking a visible national campaign on linking water quality protection to performance of onsite systems. The message needs to include fixing older systems, making maintenance "second hand" to the homeowner, whether they do it themselves or hire someone, and how functioning onsite systems protect public health and the environment. I think NOWRA can help lead the way in conducting such a national campaign. I would be honored to serve on the Board in order to continue my message to hopefully include everyone living or working with an onsite system

#### Critical Issue(s) NOWRA should Address

Regarding future research needed, I would like to see the soil treatment capabilities of a range of soils, not just sands. I also think septage treatment and disposal is an emerging issue.

### Candidate Name: John E. McCray, PhD

#### Profession, Position & Title

Currently, a tenured, associate professor in the Environmental Science and Engineering Division at Colorado School of Mines in Golden Colorado, and is on track for early promotion to full professor. Also serves as the director for the Interdisciplinary graduate program in Hydrologic Science and

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Engineering at Colorado School of Mines. This program integrates 8 different departments across campus.

**Years within onsite industry; and/or relevant expertise and credentials**

Has been working on topics directly related to the onsite industry for 7 years; and expertise includes infiltration of wastewater in soil systems, biozone formation and hydraulic impacts, and wastewater pollutant transport from site to watershed scales. My research has encompassed laboratory, field, and mathematical modeling studies. In addition, I have been working in soil science and hydrology, fields integrally related to the onsite industry, for more than 15 years.

**Board Category – Academic**

**Commitment to Board Position**

I understand this position comes weighted with great responsibilities, and requires a significant amount of volunteer work; and expect to attend 4 annual meetings of the board, and probably a few state meetings, each year. I also expect to help develop and author NOWRA policy, educational, and research documents. The position will include interfacing with state agencies across the nation, and creating dialogue with national political leaders and funding agencies.

**Specific Area of Interest**

I wish to work as a NOWRA Board member on industry issues in several different areas. First, I hope to promote more rigorous assessments and mitigation of the potential for onsite pollution by using research results and mathematical modeling tools (simple and complex, as the situation warrants). I think it is important to develop protocol for rigorous site assessment

before building large developments that use onsite systems. Onsite systems are a natural solution to groundwater resource problems. However, implementation of onsite systems in hydrologic settings that are not favorable often cause pollution or surface breakout of wastewater and give the industry a bad reputation. Protocols for site assessment could prevent future degradation of water quality, and lead to pre-installation design that is in harmony with the hydrogeologic conditions. However, the cost for assessment is not negligible (nor is it prohibitive), and it is NOWRA's job to help make the industry aware of the benefits of these costs. The goal is to install large systems that improve our sustainability without degradation of water quality.

**Industry Contribution**

I am willing to serve on the NOWRA board because I feel strongly about water sustainability (quantity and quality) and believe that onsite systems are the only truly sustainable method for wastewater disposal. I also have a love for quantitative research in areas related to this field (contaminant transport in soils and ground water, watershed hydrology, mathematical modeling) and want to promote these fields in the onsite industry. Strong leadership is needed within the academic community to promote research and education related to onsite systems. I believe that I can best contribute to these goals by serving on the NOWRA Board of Directors.

**Critical Issue (s) and Direction for NOWRA as an Industry Leader**

NOWRA should more rigorously address issues of pollutant treatment. The industry has focused primarily on infiltration rates and hydraulic behavior of systems.

However, while this approach minimizes human exposure to wastewater, the obvious adverse impact to human health, it does not properly address the issue of conserving water quality. Maintaining water quality is critically important to water sustainability as well as for general acceptance of the onsite industry by the public and regulatory agencies. In particular, treatment of virus and emerging organic chemicals (pharmaceuticals, etc) has not been rigorously addressed. Pollutant transport and transformation are my primary areas of academic expertise, so I believe I can be useful to the NOWRA board and the industry. A long-term goal of NOWRA should be to use its experience and expertise to promote proper wastewater disposal in developing countries. While we are faced with plenty of challenges to the industry in the U.S., it is our responsibility to contribute to the world water problem. This can be very rewarding for the time spent, because small efforts can lead to great improvements in developing countries.

**Candidate Name:  
Kornell "Trapper" Davis**

**Profession, Position & Title**

Owner/ manager of Coastal Plains Environmental Group and co-owner/manager of Commonwealth Onsite Solutions

**Years within onsite industry; and/or relevant expertise and credentials**

Over fourteen (14) years experience in the onsite wastewater treatment field as both a regulator in the Commonwealth of Virginia. As a regulator in the onsite industry, provided training to new Environmental Health Specialists coming into the soil evaluation and onsite wastewater treatment field.

Served on the Board of Directors for the Virginia Environmental Health Association and along with others provided guidance and recommendations to the Commonwealth of Virginia Department of Health during the re-write of the Sewage Handling and Disposal Regulations that took effect July 1, 2000.

#### Board Category – Service Provider

#### Commitment to Board Position

As a sitting Board Member of VOWRA, I am proud to be able to further the development of onsite technology, by educating and training members of the onsite industry, regulators, legislators and general public within the Commonwealth of Virginia. I would be honored to continue, and to expand this role by working within the Board of Directors of NOWRA and assisting with growing the organization, and of the onsite industry as a whole.

#### Specific Area of Interest

The management, operation and maintenance of alternative treatment systems, is relatively new and is currently lightly or even non – regulated in many states and localities. The Virginia chapter of NOWRA is proceeding with a “push” to require a higher degree of training, equaling an increased knowledge base, along with certification or credentialing of installers and service providers of alternative treatment systems. We also see the need for continuing education hours for installers and service providers to maintain their credentials and/or certification on a national basis.

#### Industry Contribution

Coastal Plains Environmental Group is a company devoted to the management, operation, and maintenance of alternative onsite treat-

ment systems in Virginia. I actively promote routine service and maintenance for all alternative treatment systems, as well as participate in educational conferences and workshops for the engineering, installer, service provider, and regulatory communities. I have participated in the review of the “Consortium’s” service provider training program that has been developed, and have been an active participant in the conferences and training workshops sponsored by the newly formed Maryland Onsite Wastewater Professional Association (MOWPA).

#### Critical Issue (s) and Direction for NOWRA as an Industry Leader

Issues involving alternative treatment systems are becoming critical in states throughout the US. I am heavily involved in addressing changes in regulations in the state of Maryland and Virginia, both of which are grappling with the difficulties of an increased number of permits for alternative treatment systems, and the lack of oversight in the area of onsite maintenance. With the completion of the “Consortium’s” service provider training program, I see a need for a national credentialing program along with a method to track Continuing Education Hours for service technicians. I believe that NOWRA should initiate and maintain such a national database and tracking mechanism, which would lead to an increase in the membership rolls, as well as a potential other revenue source.

#### Candidate Name: **George Loomis**

#### Profession, Position & Title

Currently and since 1983 a Research and Extension Soil Scientist in the Natural Resources Science Department, College of the

Environment and Life Sciences at the University of Rhode Island. Has twenty years of experience working in the onsite wastewater field conducting wastewater management, alternative and innovative wastewater treatment system research, undergraduate education, and practitioner training. Also Director of the New England Onsite Wastewater Training Center (OWTC), which is celebrating ten years of hands-on field training.

#### Years within Onsite Industry and relevant expertise

As Center Director, direction has been provided on five state or federally funded onsite wastewater demonstration system projects since 1996, installing, operating and maintaining, and researching the performance of 56 decentralized advanced treatment systems. He has over 18 years experience dealing with municipalities as they wrestle with decentralized wastewater issues and management of onsite systems. OWTC clientele are homeowners, real estate agents, site evaluators, installers, designers, regulatory officials, and municipalities, with a full range of classes provided to meet the continuing education credit requirements for several licensed groups of professionals within the region.

My staff and I have been active in several curriculum projects as both reviewers of others work and as writers. I served as a reviewer of the Consortium of Institutes for Decentralized Wastewater Treatment university and practitioner curriculum projects. Most recently, I also participated as a writer for the Consortium

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Operation and Maintenance Service Provider Program Curriculum. The objective of this project was to develop standardized O&M training materials that could be used to train O&M service providers (and hopefully lead to certification).

#### **Board Category - Academic**

##### **Commitment to Board**

I am fully aware of the responsibilities, roles and expectations of this position. If elected, I pledge to serve NOWRA in this position to the best of my ability.

##### **Contribution to Industry**

I believe that serving your chosen profession is a duty of all those in the field, and that we all have certain talents that we can share. I look forward to serving the NOWRA membership by using my experience as an educator to help influence NOWRA training efforts. I would like to investigate possible partnerships between NOWRA and other established educational institutions or entities that already have established and successful onsite training programs. I believe that education and certification and transfer of standardized information are very important issues facing all industry members. Continued decentralized wastewater system funding is also a critical issue facing our industry today that needs to be, once again, brought to the forefront as a priority. I believe that NOWRA plays a critically important role as the voice of the industry, and I would be honored to serve on the Board of Directors.

## **Candidate Name: Phil Lundman**

#### **Profession, Position and Title**

President of Petersen Supply since its inception and in the manufacturing and distribution business of offering innovative products and technical support to engineers and contractors in the plumbing and pipeline industry for over forty years.

#### **Years within onsite industry; and/or relevant expertise and credentials**

Petersen Supply has worked with other onsite system suppliers, engineers, designers, and contractors in developing POWTS inspection criterion in Wisconsin and Minnesota. We have cooperated with customers and regulators in developing training resources for increasing competencies of Petersen and customer employees. Petersen has also developed and maintains a proprietary management database on all their installed systems

#### **Board Category – Service Provider**

##### **Commitment to Board Position**

Regardless of my election to the NOWRA Board of Directors, I look forward to helping NOWRA lead the industry into greater competency and trust.

##### **Area of Interest**

One specific area of interest is working with the NOWRA Board in the area of management of decentralized wastewater systems including the development of a program for Responsible Management Entities for clustered subdivisions.

#### **Critical Issue (s) and Direction for NOWRA as an Industry Leader**

Possibly the most important priority for NOWRA is increasing the level of public trust in those it rep-

resents. This includes collaborating with political and regulatory decision makers and building professionalism in the industry by providing training and resources for continued competency development of all those involved with NOWRA. NOWRA members are a valuable resource with vast experience and knowledge that needs to be shared, focused, and deployed in a way that fosters good will and public trust.

NOWRA membership should offer a coveted advantage that will bring public confidence and market differentiation from those who do not subscribe to NOWRA values. By developing industry standards of professionalism that builds trust, NOWRA will emulate other mature industry organizations that have earned public confidence and can publish influential position papers relied on by the public, related industries, and regulatory organizations.

## **Candidate Name: L. Martin McElhenny, P.E.**

#### **Profession, Position & Title**

President and CEO of McElhenny Engineering, a 10 person design firm specializing in on-site wastewater design, located in metro Atlanta, GA. Has a BS degree in Civil Engineering from Penn State in 1974, and licensed as a Professional Engineer in 1978, designing alternative septic systems for over 25 years.

#### **Years within Onsite Industry and relevant expertise**

My wastewater experience however is not limited to on-site systems. I have designed industrial pretreatment facilities, negotiated NPDES Permits for Fortune 500 companies and have served as President of a



local Municipal Wastewater Authority. I face the critical issues of our industry on a daily basis.

**Board Category – Engineer/Designer**

**Commitment to Board**

Interested in working on the Model Code as I believe this is of a critical nature to our industry. I would also be interested in working at the legislative level to improve the acceptability of on-site wastewater systems

**Contribution to Industry**

I believe the Distributed Sewer approach can be both a low cost and environmentally sound option and not enough states consider this option in the planning process. This I consider to be the critical issue that faces NOWRA. Other issues include standardization of criteria for waterproofing, implementing the model code and hav-

ing a professional and active local chapter in every state.

**Candidate Name:  
Mark Hooks RS, CPM**

**Profession, Position & Title**

Environmental Manager with the Florida Department of Health's Bureau of Onsite Sewage Programs.

**Years within onsite industry; and/or relevant expertise and credentials.**

Worked within the onsite wastewater industry since 1988 beginning with the Kentucky Department of Public Health as a soil scientist later becoming a program evaluator and assistant Division director in 1995. In 2000 moved to Florida to oversee the onsite sewage research program for the Florida Department of Health. Is a registered Sanitarian with the

State of Kentucky and a Certified Environmental Health Professional in the area of Onsite Sewage Treatment and Disposal with the State of Florida. I am also a Certified Public Manager and a soil scientist, and active with the NOWRA Model Code development.

**Board Category - Regulator**

**Commitment to Board**

I have a comprehensive understanding of the commitment and expectations that go along with this position with the full support of my agency to carry out those responsibilities.

**Specific Area of Interest**

I am particularly interested in the model code. While all parts are important, my specific area of interest is pre-treatment system

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performance. I can offer the experiences of Florida's program with deploying these systems. Pretreatment before disposal is becoming common in sensitive areas of our state. Having a good handle on how systems perform in the real world is the key to success. Florida's research program is currently evaluating a number of treatment technologies

#### **Contribution to Industry**

Through the code, NOWRA has the opportunity to improve the performance and acceptance of onsite wastewater systems nationally. I want to help NOWRA make that difference. Onsite Wastewater Systems are here to stay; and they must be successful in order for our children to have drinkable, swimmable water.

#### **Perspectives on Industry Direction**

NOWRA must recruit the regulatory community more aggressively. Participation by regulators is important for the organization's survival. It is critical that regulatory officials work closely with the industry in developing policies. NOWRA meetings offer an opportunity for an open discussion of issues that result in better regulatory policies. NOWRA must also be a leader in training all wastewater industry professionals.

#### **Critical Issue(s) NOWRA Should address**

The establishment of maintenance programs for onsite systems is the top priority. The reason onsite systems have been treated as a temporary solution until sewers are available is due to lack of maintenance. We don't flip the power on to a sewer system and expect it to work. Onsite systems are no different and we must change the public's views.

### **Candidate Name: Theo B. Terry, III, RS**

#### **Profession, Position & Title**

Manager of Technology for Ring Industrial Group (Oakland, TN) and Registered Sanitarian with the state of Kentucky.

#### **Onsite industry; and/or relevant expertise and credentials**

Nineteen years of experience in the onsite industry, in both the regulatory side as well as the private sector. Worked for a Kentucky public health agency for the first eleven years and the last eight years with Zabel Environmental Technology. BS in Biology, Western Kentucky University

#### **Board Category – Manufacturer**

#### **Commitment to Board**

Previously served on the NOWRA Board of Directors earlier in my career, and I am fully prepared to serve once again for the betterment of NOWRA and the onsite industry.

#### **Specific Area of Interest**

The onsite industry is a fragmented one. NOWRA's broad goal at its inception was to be a unifying force for the industry. I feel that my experience, working countless hours with state associations over the years, would allow me to make a positive contribution in this area for NOWRA, as would my other professional experiences and aptitudes.

#### **Critical Issue(s) NOWRA should Addressing on behalf of Industry**

I envision a National Onsite Wastewater Recycling Association that will serve as a resource for all members of the onsite industry, from the grassroots level of the installer and contractor, to the person researching new methods and technologies for treating waste-

water, to the individuals working for companies who design and sell these projects. I see a national association as a service provider to all members of the onsite community, particularly as a mentor and advisor to state onsite associations.

#### **Direction for NOWRA as an Industry Leader**

I see a national association, not content to maintain a level of mediocrity, but one that embraces an open attitude toward new ideas and strategies that will not only grow the association, but better the industry as a whole. I see a proactive, not reactive, leadership

### **Candidate Name: Howard Wingert**

#### **Profession, Position & Title**

President/Owner, Concrete Sealants, Inc., New Carlisle, OH 45344

BS, The Ohio State University; JD, University of Dayton School of Law

#### **Years within onsite industry; and/or relevant expertise and credentials**

- 21 years experience in the onsite industry as a supplier of sealants for precast concrete, polyethylene, and fiberglass septic tanks
- Current member of the National Precast Concrete Association (NPCA) Septic Tank Product Committee. Former member of the Board of Directors of the NPCA Education Foundation. Former chairman of the NPCA Education Committee
- Current member of the Sewage Advisory Committee assisting the Ohio Department of Health to develop new onsite regulations for the State of Ohio
- Sixteen year member of ASTM Committee C-27.30 which oversees ASTM Standard C-1227 Standard for Precast Concrete Septic Tanks

- Assisted the Consortium of Institutes for Decentralized Wastewater Treatment by serving as a reviewer of the recently completed Septic Tank Module of the Practitioner Training Curriculum

#### NOWRA related activities:

- Organized the concrete septic tank vacuum test presentation conducted at the 1998 NOWRA Annual Conference held in Cincinnati, OH
- Made a presentation titled, How Onsite Wastewater Reuse System Provided the Answer to an Economic Development Problem in an Ohio Community, at the 2003 NOWRA Annual Conference held in Nashville, TN
- Assisting in the ongoing development of the Septic Tank standard of the NOWRA Model Code.

#### Board Category – VIP/Industry

#### Commitment to Board and Interest

In past years, I have been content to work, somewhat anonymously, in the background to assist in the promotion of the onsite industry. I have been encouraged by several individuals to become more actively involved in NOWRA. Therefore, I am submitting my name for consideration to serve on the NOWRA Board of Directors. In addition to my experience serving the industry as a supplier of materials used to make septic tanks I have had the unique experience of installing and managing the ongoing operation of an onsite wastewater re-use system at our manufacturing facility.

#### Candidate Name: William "Pres" Allinder, P.E., P.L.S

#### Position, Title, Profession

Director of the Bureau of Environmental Services of the Alabama Department of Public Health (ADPH) for ten years. The Bureau is the ADPH branch that,

along with several other functions, regulates all Onsite Sewer Systems in Alabama that have a design flow rate less than 10,000 gallons per day. I am a Professional Engineer and Professional Land Surveyor.

#### Industry Expertise

In addition to my public health experience, I practiced in the private engineering field for seven years and was the design and construction engineer for a major state agency for sixteen years. A major portion of my non- Public Health career has been focused toward onsite and environmental engineering.

#### Commitment to Board

The State of Alabama has greatly benefited with its involvement in

NOWRA and I look forward to being a part of its leadership in the coming years. In particular, I am very interested in working within NOWRA with the issues surrounding the decentralized, or cluster, systems that are rapidly becoming the development tool of choice. ●

### STATE LEADERS WORKSHOP

October 8, 2005

10am - 4pm

Cleveland Renaissance Hotel

Topic

### Membership & Developing Legislation

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# NOWRA 2006 Call for Abstracts

The National Onsite Wastewater Recycling Association welcomes abstracts for papers to be presented at the NOWRA Annual Conference in New Orleans Marriott Hotel, Louisiana on August 25-31, 2006.

The annual NOWRA conference is the premier location for wastewater professionals in the US to gain knowledge, education, networking, technology and solutions in the decentralized wastewater treatment arena.

Conference theme for 2006

## Wastewater Treatment through Integrated Watershed Management

### Several types of abstracts are open for considerations:

1. Research based presentations with papers
2. Policy and Management related topics with papers
3. Technical presentations with papers or support documentation
4. Forums and panel discussions with supporting documentation

### All subject matter related to onsite systems is open for submission, including:

- Watershed Management Issues, including sustainability, permitting and stakeholder collaboration
- Assessment tools or approaches to broader integrated evaluations
- Innovative Products, Technologies, and Solutions for Wastewater Treatment
- Surface water quality protection
- Sustainable solutions in costal areas
- Measured success with licensing/certification program
- Effective management of subsurface and surface discharging on-lot treatment systems
- Technology to provide advanced nitrogen and phosphorus removal
- Successful planning and manage-

ment strategies to assure performance

- Soil and site evaluation research and evaluation tools

Questions about the applicability of topic should be discussed with Committee Chair, Sara Christopherson by email at [shc@umn.edu](mailto:shc@umn.edu) or by phone at 612-625-7243.

### Abstract and Paper Deadlines

- Abstracts submittals are due by January 15, 2006.
- They should be sent as MS Word documents to [shc@umn.edu](mailto:shc@umn.edu) and will be reviewed by the NOWRA Education Committee. If you are unable to email your submittal, please fax it to (612) 625-1263. Confirmation of all abstracts received will be provided by Sara Christopherson
- Individuals will be notified of the Committee's selection by February 15, 2006, and provided with instructions regarding paper format.
- Approved submittals are to be produced as papers and submitted to the Education Committee for review and editing by June 1, 2006.
- Final papers are to be sent to the NOWRA Headquarters office by July 15, 2006 in electronic format.

### Submittal Procedures

Please provide the following details as MS Word Documents.

1. Name of Lead Author and Presenter
2. Affiliation of Lead Author / Presenter
3. Address of Lead Author/Presenter
4. Phone number and email address of Lead Author/Presenter.
5. Names and emails of co-authors, if any.
6. Abstract / Presentation Topic: Choose the category below which fits your paper and presentation or suggest your own:
  - a. Basic Wastewater Treatment
  - b. Operation and Maintenance
  - c. Watershed Management
  - d. Planning
  - e. Cluster Systems
  - f. Assessment Tools
  - g. System Performance Evaluations
  - h. Regulations
  - i. Education
  - j. Design
  - k. Innovative treatment systems
  - l. Commercial waste
  - m. Other:

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7. Title
8. 200-300 word description of the proposed paper/presentation. (Please do not send a PowerPoint presentation or the full text of the presentation.)
9. A short biography that includes education degrees and description of experience as it relates to the onsite industry.

All papers will be expected to fill a 45-minute time slot with 35-40 minutes of presentation and 5-10 minutes for questions.

**Save these Dates for  
NOWRA Future Conferences**  
– Also watch the website for ongoing updates.

**2006**  
**NOWRA 15th Annual Conference**  
**August 26-30, 2006**  
**New Orleans Marriott Hotel, LA**  
**New Orleans, LA**

**2007**  
**NOWRA 15th &  
INTERNATIONAL CONFERENCE**  
**March 10-15, 2007**  
**Marriott Baltimore Waterfront Hotel**  
**Baltimore, MD**

*Due to the aftermath of the hurricane's destruction, the decision for this location is being reconsidered.*

## Special Sessions



**OPENING FORUM PANEL**  
Tuesday, October 11 at 8:00am

### ***Watertight Septic Tanks***

The NOWRA Opening General Session focuses on an industry issue receiving significant attention in recent years – watertight tanks. The model performance code has sparked conversation about the methods to assure water tightness. This subject has broad application resulting from a decade long controversy regarding the tanks in the onsite industry. This session features a four-part discussion to address many of these issues.

The session will open with a message setting the tone and moderated by Sara Christopherson, Chair NOWRA Education Committee. The first part presents the issues and methods covered by the Model Performance Code Committee. It will be lead by Bob Pickney, Chairman of the Septic Tank Subcommittee.

The second session provides an opportunity for material manufactures to present their perspectives on the results of the Model Performance Code Septic Tank Subcommittee, as it relates material quality, installation and testing protocols. Industry representatives at this time include:

- Concrete, Dean Frank, Director, Technical Services, NPCA
- Fiberglass, Mike Sloan, Xerxes Corp
- Polyethylene, Henri Ouellet, President, Premier Tech.

Part 3 features presentations about several tank testing programs that have been implemented from across the United States. These presentations will focus on cost, performance and effectiveness. Invited speakers presenting this information include:

- Paul Booher, Florida Department of Health, and
- Uri Papish, Oregon Department of Environmental Quality.

The 4th part of the session is devoted to the audience to ask questions of the presenters and to discuss many of the items being addressed.



# Special Sessions

Monday, October 10, 2005 at 8:00 am — Gold Ballroom

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## **BALANCED GROWTH AND SURFACE WATER PROTECTION IN THE LAKE ERIE WATERSHED**

*Presenters: Kirby Date, AICP, (Moderator) Coordinator, The Countryside Program of Northeast Ohio*

*Edwin Hammett, Director, Ohio Lake Erie Commission Kyle Dreyfuss-Wells, Director, Chagrin River Watershed Partners*

In 2000, the Ohio Lake Erie Commission released the Lake Erie Protection and Restoration Plan that provided a comprehensive set of recommendations for the State of Ohio and its partners to improve the quality of Lake Erie. A significant conclusion of the plan was that land-use trends in the basin are a major factor preventing the full restoration of the lake.

In meetings conducted over a two-year period, a Blue Ribbon Task Force of government and private stakeholders recommended a program for implementing balanced growth that is known as the Balanced Growth Initiative. This Initiative provides a new focus on land use and development planning in the major river tributary watersheds of Lake Erie. The goal of the initiative is to link land-use planning and development/construction decisions to the health of watersheds and the Lake. The Initiative is voluntary, incentive-based, and has two parts.

- 1) A Planning Framework recommends the creation of Watershed Planning Partnerships which will designate Priority

Conservation Areas and Priority Development Areas in each watershed. These designations are intended to focus state development dollars and conservation efforts over the long term.

- 2) Best Local Land Use Practices recommends planning, development and zoning practices that can be implemented by local jurisdictions throughout the Lake Erie watershed.

Ed Hammett, director of the Ohio Lake Erie Commission, will present an overview of the Balanced Growth Initiative. Kirby Date, Coordinator of the Countryside Program, and leader of the Balanced Growth Initiative work group that developed the Best Local Practices, will address development, conservation and their relationship to surface water protection and on-site wastewater issues. Kyle Dreyfuss-Wells, Director of the Chagrin River Watershed Partners, and member of the Best Local Practices work group, will address the specifics of surface water protection, focused especially on issues in the Chagrin River Watershed.

## **NATIONAL SYMPOSIUM**

Thursday, October 13, 2005 at 8:00 am – Ambassador Ballroom

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### **MYTH VS FACT: DO WATER CONDITIONING CHEMICALS AFFECT ONSITE TREATMENT OF WASTEWATER?**

A recent newspaper story about the lack of knowledge customers have about maintaining and operating their onsite systems, reports that a regulator told the owner not to use fabric softeners or water conditioners because it could gum up the systems components. Installers in different parts of the county also make similar claims while others, including manufacturers, have very different opinions. This controversial issue focuses on one core question: does the wastewater (back wash) generated by water conditioning units cause harm to the onsite treatment system's operations???

In an effort to “clear the air” and sort out the conflict, the National Onsite Wastewater Recycling Association (NOWRA) is hosting an all-day special issues symposium, Thursday, October 13th at the Cleveland Renaissance Hotel at the conclusion of its 14th Annual Conference. Experts representing industry positions – water quality and onsite wastewater -- will convene at 8:00 am to focus on this question. The expert's task is to lay the issues on the table, bring out the facts as we know them, determine what is unknown, and identify steps to be taken to resolve the outstanding questions.

The challenge about this issue is loaded with controversy – which has major economic and environmental implications. Responses and positions from different groups vary from one extreme to the other. Some manufacturers claim no adverse effect and continue to allow the practice of water-conditioned

wastewater to be processed by their onsite system. Others issue caution, sometimes forbidding it or citing violation of the system warranty. Publications issued by public officials and regulators state that the back flush should not even go into the system at all – even claiming that local/state codes prohibit the introduction of the back flush into the onsite system. The water conditioning industry refutes these claims and states that they have data to prove they are right. So, what's the real story? Is there a right or wrong answer to this sensitive issue? Equally important, what are the owners of onsite systems supposed to do, and who should they believe, as they are being advised as how to effectively maintain an expensive investment to their property value

This forum is a collaboration of the National Onsite Wastewater Recycling Association (NOWRA) and Water Quality Association (WQA). Professionals from both industry sectors will provide literature reviews, current research projects, and field observations from well-known installers and service providers. They will evaluate the effects of conditioning chemicals on septic tanks, aerobic units and soil treatment and dispersal systems. After the presentations, the panel of experts will conduct an “open-mike” forum, obtaining comments from audience participants. The results of this program will be summarized in a report produced by the NOWRA Technical Practices Committee in cooperation with the Water Quality Association. This will result in a “white paper” for both industries on this subject. Go to NOWRA's website – [www.nowra.org](http://www.nowra.org) for more information about the participants and issues on this symposium.

# Special Sessions



Wednesday, October 12 – 8:00 a.m. – Whitehall Ballroom

## **Removing Barriers to Evaluation and Use of Decentralized Wastewater Technologies and Management – A Special Issues Forum**

Over the past decades, the engineering community in the United States has primarily focused on centralized wastewater solutions as the only viable technology to meet the needs of municipal clients. While the engineering community is aware of decentralized technologies, something prevents them from even subjecting them to an equitable analysis against their centralized sibling. Most of these barriers to considering evaluating these systems are well known, and include:

- Decentralized solutions are smaller, with less prestige,
- Profit margins and grosses are lower for decentralized,
- Engineers are less comfortable with the design of decentralized systems,
- Clients are easier to sell on centralized, both because they are more familiar with it and engineers are more comfortable selling it,
- Financial assistance programs are exceedingly biased in favor of assisting centralized solutions, and
- Engineers learn little about decentralized wastewater treatment in college and beyond.

A key step in finding solutions is to thoroughly understand each barrier and its causes, then discussing them with members of the engineering field as well as stakeholder groups that influence engineers. At the same time, while tremendous bias exists for centralized solutions, there are case studies in which to gain valuable insights which are derived from communities and engineers who have tried decentralized approaches and been very satisfied with the results. These people faced many of the barriers and found waysthrough or around them. Clearly, they have found solutions or thought of many ideas for how to resolve barriers.

In this forum, the first results of a project focused on understanding and overcoming the barriers to equitable evaluation of decentralized wastewater treatment technologies will be presented. The barriers found, and their root causes, will be discussed. NOWRA participants are invited to share their experiences with the barriers and tell the stories about how they have overcome them.

Leading this panel discussion is: Carl Etnier, Scott Johnstone, Stone Environmental, Inc., and Christy Bixler, Water Environment Research Foundation. Carl Etnier has worked with decentralized wastewater treatment for fifteen years. His Ph.D. studies (currently ABD) were in wastewater decision-making, including economic issues, and he has been a part of numerous communities wrestling with wastewater decisions.



## **Onsite Systems and Technology A to Z**

2 Days  
Monday / Wednesday  
8 am to 5 pm

NOWRA's Onsite Systems and Technology A to Z has historically provided invaluable instruction regarding onsite wastewater. With this critically acclaimed program as a starting point, the agenda has been updated for 2005 to provide practitioners, public officials, students, builders and realtors with comprehensive information regarding onsite wastewater treatment. The new program includes materials from the recently completed CIDWT Curriculum Project as well as several totally new presentations. The result is a well-rounded and inclusive short course that will appeal to attendees from all sectors of the industry.

**History of Onsite Wastewater Treatment** provides an historical perspective of wastewater treatment and chronicles the evolution of onsite systems.

**Chemistry, Biology and Wastewater Characterization** describes the basic science behind the technology and discusses the variable characteristics of wastewater that influence methods used to treat it.

**Principles of Site and Soil Evaluation** gives even the "non-soils" professional a baseline understanding of not only the soil parameters that control the efficacy of treatment but also the importance of overall site issues that must be considered for system design.

**Water Movement and Treatment in Soils** illustrates the concept of soil/water movement in relation to biomat formation and management.

**Septic Tanks** describes the wastewater treatment processes that occur in septic tanks, design features that improve tank function and facilitate O&M and discusses the importance of tank capacity and structural integrity.

**Advanced Treatment Systems** highlights the principles of onsite wastewater treatment using ATUs and media filters and focuses on effluent quality parameters that may affect their design and use.

**Soil-based Treatment Technologies** illustrates how gravity and pressure systems are designed and used for distribution to and dispersal within the soil treatment component.

**Pump Selection and Controls** provides detailed information on design, component selection and configuration of systems used to deliver effluent under pressure.

**Construction Principles** includes practical information on component installation, system watertightness, final grading/landscaping and quality assurance while emphasizing the importance of safety.

**Operation and Maintenance** provides the basic information for ensuring long-term system reliability via regularly scheduled, thorough and intensive system inspections.

# Special Sessions

Tuesday, October 11, 3:00 pm

## ***Developing an Action Framework for Business and Economic Development in the Integrated Decentralized Water Resources Industry***

On Tuesday, October 11, 2005, the National Onsite Wastewater Recycling Association (NOWRA) will host a “Business Roundtable” session during its 14th Annual Conference, in Cleveland Ohio. The purpose of this event is to bring together business leaders from both within the onsite wastewater technology industry and those whose businesses are affected by the products and services provided by these companies.

### **Identified Discussion Topics**

- The Economics of the onsite/decentralized water resources industry. Growth and sustainability without dependency on government funding.
- Size of the Industry –answering the question of the actual dollar volume size of the industry.
- Opportunities for both large and small business in the decentralized wastewater industry.
- The Importance of the Model Performance Code in minimizing the cost of product approvals.
- Demonstration of a “Return on Investment Calculation” for businesses when states implement a Model Performance Code.

- Defining EPA’s direction and future impact upon the decentralized industry.
- The role of business in moving the decentralized industry forward.
- Importance of establishing long-term sustainable revenues to support NOWRA’s work on behalf of the decentralized water resources industry.
- Establishing a NOWRA Business Advocacy Council to support large and small business needs within the Integrated Decentralized Water Resources Industry.

In addition to both large and small business, invited participants to the roundtable panel include the representatives from the White House Economic Advisory Council, the National Homebuilders Association, U.S. Environmental Protection Agency, NOWRA Industry members and the National Mortgage Association.

The NOWRA Business Roundtable begins at 3:00 pm (edt) in the Ambassador Ballroom of the Cleveland Renaissance Hotel, 22 Public Square, Cleveland, Ohio. Additional information can be obtained from NOWRA’s website: [www.nowra.org](http://www.nowra.org); or calling 800-966-2942.

Monday, October 10 and Wednesday, October 12 at 8:00 am – Van Aken

## ***Basic Leveling and Applications for Onsite Professionals***

**Separate Registration Required – this course is limited to 15 participants.**

This special two-day workshop is designed to provide installers, designers and inspectors with knowledge, skills and tools to perform accurate leveling work, and effectively apply it in the daily work within the onsite industry. In this course, participants have the opportunity to achieve a solid technical foundation of knowledge and the confidence to apply skills to accurate, consistent and efficient installations, or inspections. It enables practitioners to achieve a professional level and leader in Quality Installation Assurance. In this program you will learn how to apply the basics of differential and profile leveling and to develop field notes, and develop Quality Installation Assurance (QIA) Tools to:

- meet your specific needs,
- verify the accuracy of your work and the work of others,
- develop effective job control methods,
- improve communication on the job site,
- communicate effectively with other professionals,

- develop practical and valuable documentation, and
- protect your business interests and those of others’.

The workshop will be taught in a hands-on setting, using classroom instruction and laboratory practices with survey leveling equipment. Equipment and materials will be provided

### **Course Instructors:**

Dr. Larry C. Brown, Professor, Extension Agricultural Engineer Director, Overholt Drainage Education and Research Program, & Int’l Program for Water Management in Agriculture at the Ohio State University.

Ralph Benson, R.S., Clermont County General Health District

The authors have designed the workshop course on applications of basic leveling applications, targeted for onsite wastewater treatment system installers, designers and health department personnel who work with installers. Various parts of the workshop materials have been taught for a number of years at the OOWA/OLICA annual meetings or have been developed in field practice and incorporated into this program.

# Special Sessions



Thursday, October 13th – 7:30 am to 5:00 pm – Cleveland, Ohio

## **NOWRA 2005 Conference Experiential Field Education Program**

The 2005 NOWRA Experiential Field Education Program takes individuals out of the traditional classroom setting to provide learning skills based on achievement of specific projects and programs. It includes a diversity of site visits in providing essential professional education relating to onsite wastewater treatment applications. Experiential learning is gained through direct observation, presentation by practitioners, and discussion supplemented with educational materials. This program, specifically designed for the education of onsite industry practitioners, receives continuing education units and certificate of completion. Four different topics, relating to the main theme, are provided at four locations in this day-long program.

**A detailed schedule for the NOWRA 2005 program follows this description.**

**Project Site #1** - The University School, a private male education facility in Hunting Valley, Ohio.

**Project Summary.** After realizing that the extended aeration plant was no longer adequate and not meeting effluent discharge standards, school management added a wetlands system to provide tertiary treatment to the effluent. The wetlands system overflows to a receiving stream, which serves as the water supply for a native trout hatchery. The wetlands installation has resulted in a dramatic improvement in the stream water quality, which now supports a healthy invertebrate and fish population. School representatives will be on site to discuss the dual role in which performance of the wetlands system and a trout culture program are conducted at the school for student education.

**Project Site #2** - A resident installation of a drip distribution system.

**Project Summary.** The system will be installed to service a new home being constructed in either eastern Cuyahoga County or western Lake County. Site and installation details, however, are dependent on the specific development occurring at the time of the tour.

**Project Site #3** - Installation of a new Infiltrator Quick 4 Equalizer 24 chamber system in Geauga County.

**Project Summary.** The installation of this system demonstrates many of the additional benefits this new design has over past models. These include a wider design which allows for an increased overall storage capacity, reconfigured chamber ends that allow for an increased contouring ability and reengineered end plates that allow for direct serial distribution without using drop boxes.

**Project Site #4** - Tim Frank Septic Service in Huntsburg, Ohio – Septage Management

**Project Summary.** The Tim Frank Company provides a wide variety of high quality residential and commercial onsite treatment services. The USEPA awarded Tim a special award for Outstanding Septage Gathering, Processing and Utilization Services in 1998. In 2001, Tim was also recognized as the “Contractor of the Year” by the onsite industry. After a catered lunch, a tour of the site will lead us through the septage treatment and land application processes that occur at this facility. Representatives from several companies will also be on site to conduct presentations and demonstration projects that incorporate different types of septage management and dewatering equipment and techniques.

### **Important Items Regarding this Program**

- Boarding of buses occurs at 7:30 a.m.
- Buses leave the hotel at 8:00 a.m. promptly and return approximately 5:00 pm.
- A reservation and fee is required for this program. Program Fee is \$95.00 and includes educational materials, transportation and a catered lunch.
- Even if other transportation is being used, individuals must still register, pay the fee, and inform NOWRA.
- Participants should make allowances for any time delays affecting the return of the busses.
- Appropriate field attire – specifically footwear is required. Be prepared for weather conditions.
- Only two busses are reserved. It is recommended that you sign up early for this unprecedented educational experience.
- NO REFUNDS will be made for “no-shows!”

### **Detailed Itinerary**

**SIGNS WILL BE POSTED AT THE NOWRA REGISTRATION DESK AND IN THE HOTEL LOBBY IDENTIFYING THE LOCATION OF THE BUS BOARDING**

**7:30 am** – Busses available for boarding – all persons must be on the bus by 7:50 a.m. for a headcount and sign in – no exceptions!

**8:00 am** – Busses promptly leave the hotel – no waiting and no refunds for “no-shows”

**8:45 am** – Arrive at University School, 2785 SOM Center Rd., Hunting Valley

**9:45 am** – Leave University School

**10:00 am** – Arrive at location of drip distribution system installation in Lake County

**11:00 am** – Leave drip system installation site

**11:15 am** – Arrive at Infiltrator installation site in Geauga County

**12:00 noon** – Leave Infiltrator installation site

**12:15 pm** – Arrive at Tim Frank Septic Service Facility, 12715 Madison Rd. (St. Rt. 528), Huntsburg

**Lunch** – Tour of facility; Presentations and demonstration projects

**3:45 pm** – Leave Tim Frank Septic Service Facility

**5:00 pm** – Arrive at hotel

# National Onsite Wastewater Recycling Association 14th ANNUAL TECHNICAL EDUCATION Conference & Exposition

***Appreciation and Acknowledgements to the  
Following Businesses for Supporting  
NOWRA'S Programs with Special Donations in 2005.***  
These funds are used to support the work of the NOWRA Model Performance Code

INFILTRATOR SYSTEMS, INC.  
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WISCONSIN ONSITE WASTEWATER RECYCLING ASSOCIATION  
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## ***NOWRA BUSINESS BENEFIT PROGRAM MEMBERS***

Member benefits include conference booths, discounts on advertising and online locator listing. The remaining funds are used to support NOWRA's overall program operations.

### **GOLD BBP (Annual Fee \$5,000)**

Delta Environmental Products  
Orenco Systems, Inc.  
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### **SILVER BBP (Annual Fee \$3,500),**

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National Environmental Services  
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### **Loyal Supporter BBP (Annual Fee \$350)**

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Dunne Company  
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Snowden On Site Inc.  
Arcan Enterprises  
Topp Industries, Inc.  
K-Rain Mfg. Corp.  
Tim Frank Septic Company





# Special Sessions



WEDNESDAY, OCTOBER 12 – GOLD ROOM – 1:30-3:00 PM

## MODEL PERFORMANCE CODE PANEL SESSION

Members of this panel will present perspectives on the current thinking regarding what constitutes performance-based codes and how they can be developed and implemented. Key topics to be addressed include:

- Reasons for Performance Codes and key drivers within government and industry
- Types of Performance Codes being considered
- Common elements to a Performance Code
- Roadblocks to implementation
- The respective roles of NOWRA, the Consortium and state Associations in promoting Performance Codes

All panel participants have been involved in the development of performance codes and bring to the discussions a unique perspective. Participants include the following persons.

Michael (Mike) Corry, Infiltrator Systems, Inc., Past Chair, NOWRA Model Performance Code committee

Richard (Dick) Otis, Ayres Associates, Madison WI, drafter of performance code concepts

John Rowse, British Columbia Ministry of Health, drafter of the British Columbia performance code materials

Mark Hooks, Florida Department of Health, drafter of the Florida performance criteria

Bob Mayer, American Manufacturing Company, past President, NOWRA

Moderator: Ted Loudon, Professor Emeritus, Michigan State University

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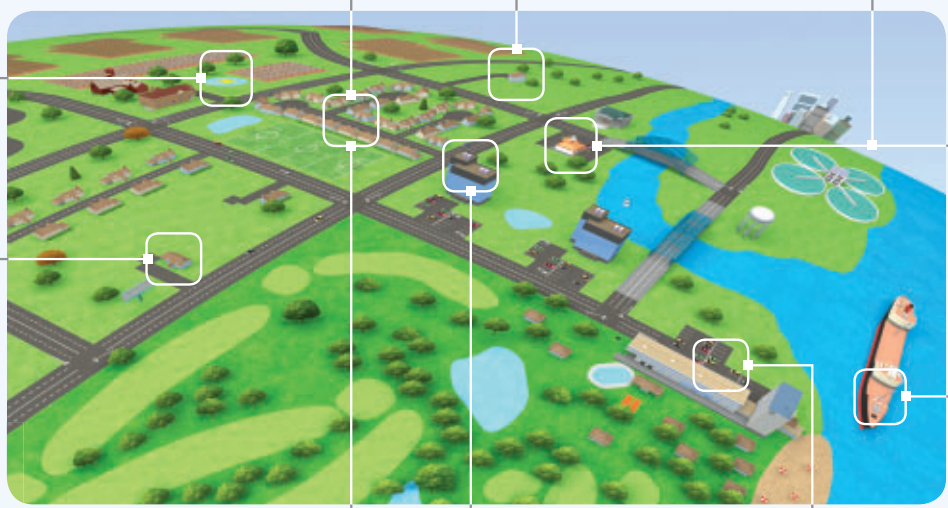
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