

ONSITE journal

Spring 2007

NEWS FOR THE DECENTRALIZED WASTEWATER INDUSTRY

Vol. 16 No. 2

Maintenance, Management, and Member Education



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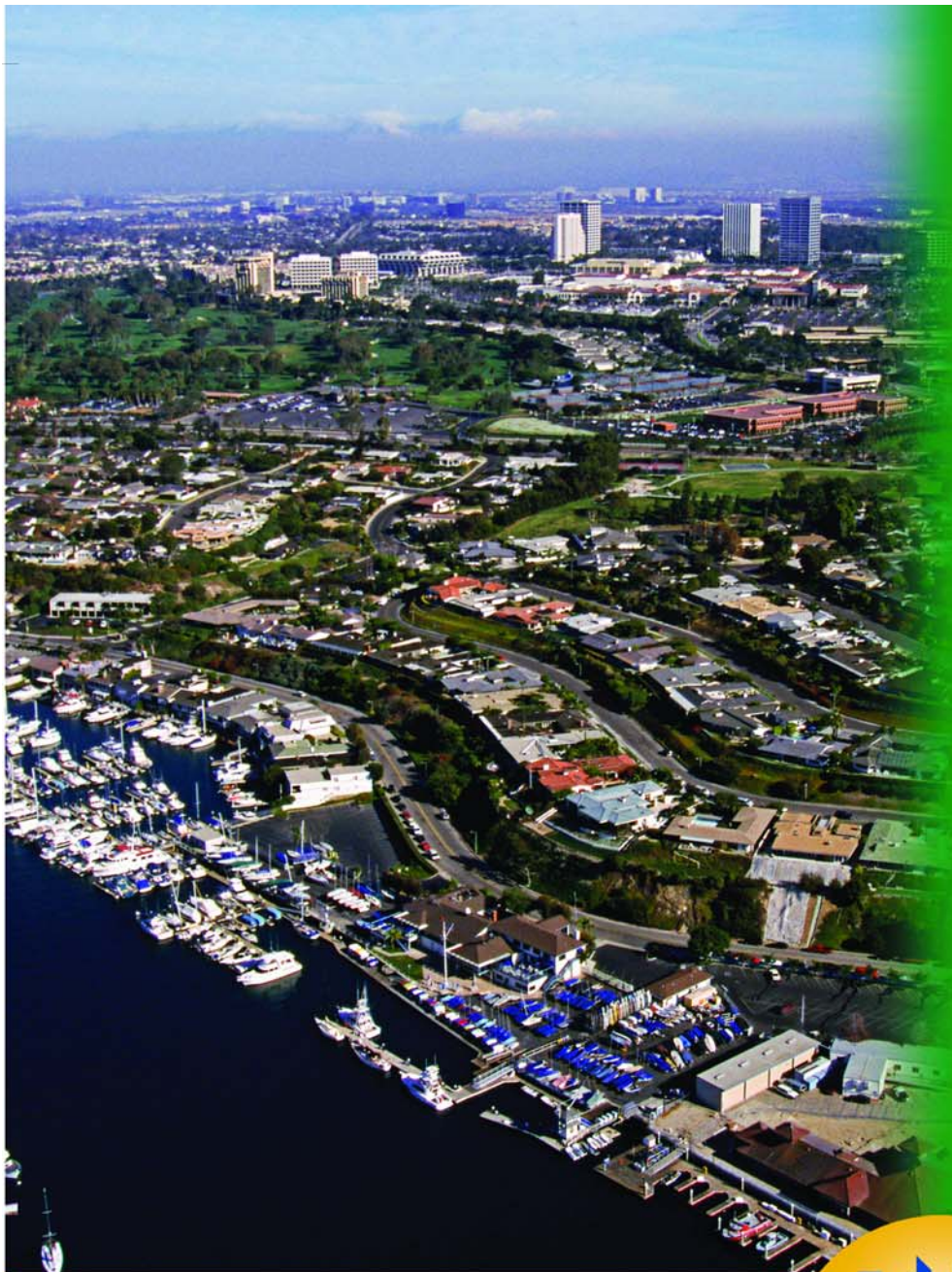
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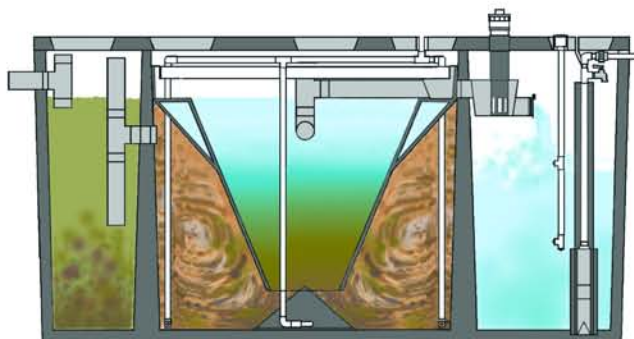
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ONSITE Spring 2007 journal

NEWS FOR THE DECENTRALIZED WASTEWATER INDUSTRY

National Onsite Wastewater Recycling Association, Inc.

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NOWRA's Water for All Life Conference A Successful Launch to Sustainable Goals

NOWRA's 16th Annual Technical Education Conference was held in conjunction with its first ever International Program cosponsored by IWA and WERF on March 12–14, 2007 in Baltimore, Maryland. The *Water for All Life* conference was a tremendous technical and educational success with excellent speakers and information presented in both the International and the traditional NOWRA programs.

The International Program invited speakers from all over the world to share their country's experiences and innovations in the decentralized industry. From Australia to Malaysia, China to Israel, and Germany to Ireland, these international professionals presented their ideas on such diverse topics as rainwater harvesting, green roof design and watershed management. This program wasn't just about wastewater—it brought together multiple aspects of conservation and sustainability applicable to the entire water industry and valuable for all water professionals. It truly was about *Water for All Life*.

NOWRA's 16th Annual Technical Educational program once again rose to the highest standards, also presenting ideas and information from countries outside the U.S. including Japan, Italy and Australia. NOWRA's premier program, Onsite A to Z, was a smashing success, providing participants with a wastewater treatment overview. It included sessions on soils and site evaluation, septic function, design, construction, inspection and troubleshooting, and operation and maintenance. The NOWRA side also included diverse topics such as "Utilizing GIS and Land Management Data to Assess Small Community Wastewater Needs," "Western Australian Case Studies of Wastewater Treatment and Recycling in Urban Villages," and "Onsite Bacteriological Testing of Drinking Water."

The conference included a special event at the Baltimore National Aquarium, featuring its popular Australia exhibit. Conference participants were allowed to tour the Aquarium Tuesday evening after it was closed to the public, enjoying exhibits featuring everything from Chesapeake Bay aquatic life to coral reefs to sharks, rays and sea turtles.

On Thursday, the final day of the conference, NOWRA's off-site field trip shuttled participants on a whirlwind tour of three local Maryland sites featuring innovative wastewater facilities. Participants traveled to Ellicott Meadows Condominium Community in Ellicott City, MD; Mountainside Day Camp in Frederick, MD; Paddocks East Shared Facility in Glenelg, MD; and the Sean Smith Property in Braddock Heights, MD.

continued on page 11

An Installer Manufacturer Perspective

What a difference it makes to learn from those who work in unfamiliar areas, and under circumstances possibly outside of your comfort zone. This year the NOWRA educational conference and exhibition in Baltimore had a different feel than previous years. After seeing the same faces year after year, show after show, the temptation for participants to become stagnant is often too great to resist. Those involved year after year know many of the stakeholders in our industry who share their knowledge in technical sessions, as well as during business and social events outside of the show environment. Bringing in the international crew provided an eye-opening experience. It demonstrated that the almighty United States can learn from others' experiences in similar yet different environments. Since the vast majority of the planet cannot afford the astronomical costs associated with big pipe wastewater treatment networks and infrastructure, the logical solution is often the appropriate use of onsite technologies. The lack of prohibitive regulatory guidelines in many corners of the globe also aids in perpetuating our industry abroad.

NOWRA annually assembles some of the most educated and experienced engineers, manufacturers, installers, service providers, and regulators on the planet. It is a compliment to our organization and membership that so many international participants traveled such great distances, some literally from the other side of the Earth to learn from us and share their knowledge and experiences as well. I personally spoke with numerous participants who were forced to travel multiple days from their homes just to arrive in Baltimore.

The old paradigm for water was that it was a resource comprised of individual resources (i.e., drinking water, surface water, ground water, storm water, and wastewater) which all were examined separately. There has been a shift to a perspective of a single flowing resource where we now try to think of water entering all of these phases at some point during its cycle. As we broaden our perspective regarding water by joining the individual components together we must continue to share and improve our knowledge and experience in the international arena in a similar fashion. It is my hope that NOWRA continues to embrace a global onsite perspective for our sake, for there sake, for goodness sake.

—BRIAN SCHEFFE, *Front Range Precast Concrete, Boulder, CO*

NOWRA/EPA Model Code Regulator Education Program

A Report on the Kentucky and Maryland Workshops

With funding support from the U.S. EPA Office of Water, NOWRA has launched an education program for regulators and policy officials on the process to change or develop new codes to manage onsite and decentralized systems within a regulatory framework. The program features a series of workshops intended to assist regulators and policy officials with understanding how to use the recently produced Model Code Framework documents to evaluate, revise, or develop codes governing onsite systems. The content of the workshops features options available and steps involved to accomplish this process.

The education and outreach program for regulators and policy officials also officially presents the newly adopted documents, entitled the “Model Code Framework for the Decentralized Wastewater Infrastructure. Available on CD or for download on the Model Code website, the technical documents for the program include: Vol I: Code Design Philosophy and Guidance; and Vol II: Workbook for Writing the Code. Appendices to Volume II include the Classification Matrices, Procedures for Administering the Confined Treatment components Database and Matrix, Tank Standards and the “Do Not Flush” List Guidance. Another document, the Soils Component, is still in development. These materials and other program activities information are available on the Model Code (www.modelcode.org) and NOWRA websites.

The education and outreach program also features a new website devoted exclusively to the work of changing and producing codes for the decentralized industry. The website is structured to enable easy access to information produced for this program and to facilitate a dialogue on problems experienced and successful solutions. Within the website is a community bulletin board for committee members to review and comment on materials produced in this program. While contents on the community bulletin board can be viewed by the public, only committee members with access codes can input and download documents.

Two of the four planned workshops have been held; one in Lexington, KY and the second in Baltimore, MD. (Separate and more detailed reports are located on the Model Code website—www.modelcode.org). Each workshop had at least 22 participants, with only a few who were not regulators. The Baltimore workshop, held prior to the NOWRA International Conference, was also attended by regulators from Italy, Israel, and Germany.

Workshop leaders are Dr. Richard Otis, P.E., (also serving as the program’s project manager); Tony Smithson, (NOWRA’s Model Code Committee Chairman); Mike Corry, Mark Hooks, Tom Groves and Ron Suchecki, Model Code Committee members; and Linda Hanifin Bonner, NOWRA’s Executive Director. A third workshop is scheduled to occur

June 21, during the NEHA conference at the Tropicana Hotel in Atlantic City, NJ. A location for the 4th workshop is underway. Go to the NEHA (www.neha.org) or NOWRA Model Code (www.modelcode.org) websites for more information or to register.

Handouts and Preparation

All participants received a notebook containing an agenda, attendee list, summary of responses to preliminary questionnaire, copies of presenters presentations, pre-edited version of model code framework, evaluation matrices and appendices, as well as a CD with a complete and edited copy of model code documents. Additional materials were provided and all documents are on the website (www.modelcode.org).

Pre-Workshop Input – Understanding the Issues

Workshop registrants were asked to respond to a brief questionnaire addressing regulatory issues currently before them and to identify specific topics they’d like to have presented in the workshop. Using this advanced information, workshop planners and facilitators were able to direct the content of the presentations to meet participant needs and to provide a meaningful learning experience. The responses received were also used to develop the challenge topics that participants later used in the problem-solving sessions.

In these responses, nearly all the workshop participants reported that they are actively involved in both the regulatory process affecting decentralized systems, as well as working to change codes. The primary challenges affecting their work in making these changes or revisions to the state or local codes included political opposition from individuals who desired to maintain the status quo; disagreement among groups (outside the regulatory environment) regarding the need for the code change; a lack of interest from onsite industry groups, available information on system performance, and that a cookbook of solutions does not exist.

Several topics identified as “special assistance to be addressed in the sessions” included:

- obtaining information on development of performance based standards,
- learning how to locate the most current regulations used throughout the US,
- understanding the overall implementation process,
- where to obtain legal advice in the development of codes,
- understanding the type of framework needed to make changes to codes, and
- having case studies and examples of where a model code has been implemented.

Other subject areas also requested were: performance standards, technology and evaluation, O&M, inspection and monitoring, enforcement of the code, non-residential/community system management, state vs. local authority, system designs, risk assessment, soil treatment and how regulations can address environmental concerns.

The Learning Process

The morning session began with an overview of presentations about the reason for the work, documents produced, and issues being experienced in the industry. In the afternoon, participants were divided into groups, assigned a challenge topic and asked to develop ideas toward a resolution or solution to the issues encountered. The breakout sessions received high praise for the dialogue that stimulated the thought process and were acknowledged as an active learning tool.

Rating the Program

Concluding the day's work, each participant completed a detailed questionnaire that provided instructors and planners with their opinions and comments about the value and content of the program, and what could be improved.

Overall, the content of the presentations are rated as:

- Producing what session description had promised and being logically organized. The majority of responses stated they were "Very Satisfied" (in MD), Mostly "Satisfied" (in KY).
- Providing adequate detail within the sessions was reported to be evenly split in MD with very satisfied; and, more "Satisfied" in KY
- Mostly "Satisfied" in being provided with adequate information needed in both sessions; and the same with the "Quality of Handouts" being received.

Specific Comments noted that participants:

- Wanted to have more personal opinions/experiences from presenters on working with Model Code
- Found that some of the handouts didn't match Power Points
- Would have liked to have discussion groups after each Power Point instead of just once at the end
- Would like to be more familiar w/MC before presentation (to compare it to what's already in place)
- Perceived that the presentation(s) were based on the assumption that the Model Code is already accepted by everyone— which is not the case.

Presenters providing the session knowledge were found to be:

- Mostly "Very Satisfied" (in MD), mostly "Satisfied" (in KY) with the overall quality of the individuals and Relevant subject matter/examples being presented.
- Mostly "Very Satisfied" in both sessions with participant involvement and interaction; that the presenters Encouraged Questions, Answered Questions, and Moved the topics along at a reasonable pace.
 - Mostly "Very Satisfied" in MD, even split in KY with the appropriate number of presenters provided in the sessions.

Responses to Specific Questions

Was information provided useful? Most individuals replied affirmatively, with a couple "somewhat's; good for "sharing ideas," and need for more specifics on regulatory language.

How will you use the information provided? When preparing regulations; making decisions, developing state code, and recommending it to legislators; using it as a guide in code development, to help rewrite "our" code, stimulate thoughts and possible actions, train state regulators, and try to convince peers and bosses to include in comprehensive plan. Some were not sure how to use it now—or just needed time to figure out how to implement it.

How can planners improve upon the next workshop?

Advice given was to provide more details in implementation, use speaker microphones, have more regulators and practicing engineers/designers present (existing group too general); have attendees review framework ahead of time, provide more examples of what does and does not work, more on HOW to change, more handouts w/examples of existing systems, introduce state regulation to provide more comments, apply information to current state regulations showing benefits; and, please provide MORE EXAMPLES/CASE STUDIES.

Other Comments

- Break-out sessions were good but need more of them
- Would like more in-depth discussion and treatment of specific issues
- Great job!
- Wish I'd been registered for entire conference—this is a knowledgeable group of professionals.

Conclusions

In the concluding comments, three messages were re-enforced from the presentations in working with the code process. First, regulators who enforce the codes should not be solely responsible for writing the code. And in the development or changing of codes, there should be a stakeholders group working with the regulators throughout the process. Further, a mechanism is required to address the conflict of interest that will inevitably occur among the participating parties. Overall the workshop process is providing a valuable interactive learning process; however, it was concluded that the sessions need examples of how other groups are working with the code changing process, clarifying the challenges or pros and cons of the changes being made; and giving an example of a code for cluster systems, as well as a plan to manage the development of the regulations for the newly created code. ■

For more information on the NOWRA Model Code
or to register for the June 21 workshop, visit:
www.neha.org or www.modelcode.org

NOWRA Board Candidate Application

Notice of NOWRA Application Search for 2008–2010 Board of Director Positions

Excerpt from NOWRA BYLAWS
(Adopted 2006 version)

ARTICLE V. GOVERNANCE

Section 1. Organization

The conduct of the affairs of the corporation and the attainment of its purposes shall be managed and guided by the Board of Directors.

Section 2. Structure

The corporation's Board of Directors is comprised of sixteen members, that includes the four (4) Executive Committee members (President, Vice President/ President Elect, Secretary-Treasurer, and the Past President) and at least two (2) representatives each from the various member sectors as identified below. The exception is the VIP sector, which shall not be represented. The exact number of directors may be changed by resolution of the Board of Directors. Each Director serves a three-year term or until their resignation, removal from office, or death. Each director elected serves a three-year term unless they are elected to be an officer, in which case the member will remain a director until expiration of the complete term of office. Transition of the current board to the future board should be no more than one-half of the member representation through attrition and one-half through new board members over 2-3 years.

Board Member Sectors include the following designees.

- (a) Site Evaluator/Soil Scientist, Designer/Engineer
- (b) Supplier/Vendor
- (c) Installer/Contractor
- (d) Operator/Manager/Maintenance-Service Provider
- (e) Compliance Monitor/Regulator
- (f) Academic/Researcher
- (g) VIP (very interested party)

When a director is elected to the Board, as a stated sector representative, that board member will remain in that sector for the duration of that director's term on the board.

As of December 1, 2007, there are four (4) positions on the NOWRA Board of Directors to be filled in the August elections.

The position categories include:

- Academic
- Installer/Service provider,
- Engineer
- Manufacturer/Supplier

State groups are encouraged to recommend candidates and individuals are encouraged to apply for serving in this role. Directors and officers who serve in these positions, do so on a voluntary basis, and are not financially compensated for this work.

Expectations of NOWRA Board Members Roles & Responsibilities

- Participating in 4 (face to face) meetings, that includes a 2-day strategic planning session, monthly teleconference calls, reading and reviewing all distributed materials.
- Serving as an active liaison and mentor with state groups on topics, and participating as NOWRA's official representative at meetings when requested.
- Contributing time in a leadership or participatory role on committees and special task groups when requested.
- Providing guidance and direction to the NOWRA Board and staff on the issues representing your industry sector or organizations positions and policies.

Supporting ongoing activities to ensure financial sustainability of the association.

Application Process

Potential candidates should prepare a letter to the NOWRA Nominations Committee c/o Executive Director. The letter should include:

- a statement of your desire to be considered for one of the positions within a specific category, and acknowledgement of the commitment to fulfilling the expectations, roles and responsibilities as a member of the Board of Directors,
- current employment, professional title, and position,
- number of years of work or affiliation within the onsite industry, and relevant expertise and/or credentials.

In addition, please prepare a statement responding to the following questions.

- What specific area of interest do you desire to work with the NOWRA Board on industry issues and how you will make a contribution
- **Why you are willing to serve on NOWRA's Board as a leader in the onsite industry**
- What is your perspective(s) on the directions that NOWRA as an organization should consider in order to increase its leadership role in the industry
- What are the critical issues that NOWRA's Board should be addressing on behalf of its industry members

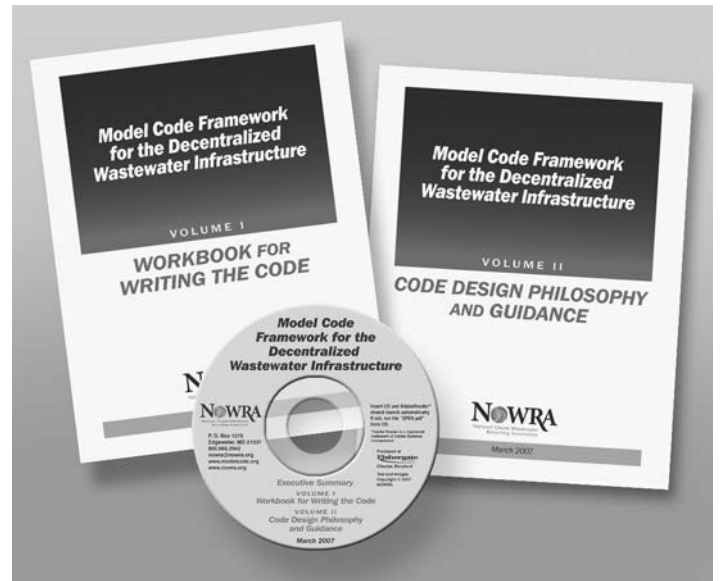
Send this information by June 15, 2007 to

NOWRA's Executive Director, Linda Hanifin Bonner, either by mail (PO Box 1270, Edgewater, MD 21037) or email: executivedirector@nowra.org or fax to 410-798-5741

NOWRA and EPA Sponsor June 21 Model Code Regulator Workshop

NOWRA is pleased to announce the next Model Code Regulator Workshop on June 21, 2007 immediately following the National Environmental Health Association's (NEHA's) annual conference in Atlantic City, NJ. With funding from the U.S. EPA Office of Water, these workshops are part of an overall education and outreach program for regulators and policy officials who manage onsite and decentralized systems within a regulatory framework. The workshops assist regulators and policy officials in understanding how to use the Model Code documents to evaluate, revise, or develop codes governing onsite systems. The workshop also identifies options available and steps involved to accomplish this process. The program includes an overview of the newly adopted documents, entitled the *Model Code Framework for the Decentralized Wastewater Infrastructure*, which was released in March 2007.

The *Model Code Framework* was written and developed by a number of onsite regulators who are part of NOWRA's Model Code Committee, some of whom will be conducting the workshops. All workshop participants receive a CD containing the *Model Code Framework* documents and a workbook containing the Executive Summary and presentation. The Model Code Regulator Workshops are at no cost and are open to all state and local government officials involved in onsite wastewater and decentralized systems. Workshops are limited to 40 attendees. An educational and informational website (www.modelcode.org) now contains all model code documents produced, as well as updates about ongoing activities. Recent workshops were held in Lexington, Kentucky and Baltimore, Maryland.



Workshop Details—June 21, 2007

Location: Tropicana Hotel, Atlantic City, New Jersey (8 a.m. to 5 p.m.). This workshop occurs immediately following the three days of Onsite Wastewater Systems Education Session at the NEHA 71st Annual Educational Conference and Exhibition. Registration for the Model Code workshop is through NEHA and NOWRA. Please visit www.neha.org or www.modelcode.org to download the registration form and questionnaire. All registrants should complete a short questionnaire to assist workshop leaders in addressing state and local issues.

Workshop 4 Location Being Sought

One additional workshop is scheduled to occur after Workshop 3, but the location has not yet been finalized. Locations being considered are: the Southeast, the Southwest, and the Great Lakes. Location selection will be based on the level of interest of state or local regulators. Please contact NOWRA at 800-966-2942 to express interest in one of these possible locations or as serving as a workshop host. ■

2007 Conference *(continued from page 7)*

Participants agreed that this year's conference was a great success. Said Jan Hygnstrom from the University of Nebraska-Lincoln "The topics were very interesting and made me excited about future paths and technology... This year, the plenary sessions fit the bill. I also enjoyed the panel discussion/wrap up." Tom Groves of NEWIPCC said "I thought the hotel, the content, and the agenda were exceptional."

In order to continue to provide the highest level of educational resources to the onsite wastewater industry, NOWRA has maintained its *Water for All Life* website, www.waterforall-life.org, as a resource database for onsite professionals. All provided presentations by speakers in the International Program can be found under the Resource Documents tab in the left column. It is NOWRA's hope that the onsite industry will take advantage of this exceptional educational resource to discover innovative technologies and ideas from all over the world, in all aspects of water sustainability and reuse. Take part in our goal of Water for All Life: Visit www.waterforalllife.org today! ■

NOWRA 17th Annual Technical
National Onsite Wastewater
Recycling Association Education Conference

PAST, PRESENT, AND FUTURE
Water's Value is a Constant

Save the Dates! April 7–10, 2008

Memphis Cook Convention Center
Memphis, Tennessee

2008 CALL FOR PAPERS

The National Onsite Wastewater Recycling Association (NOWRA) welcomes abstracts for papers to be presented at the NOWRA Annual Conference in Memphis, Tennessee on April 7–10, 2008.

The NOWRA annual conference serves as the premier conference for the conveyance of new research, regulations and policy, experience and practices in the decentralized wastewater industry. The conference's exposition hall provides an invaluable opportunity to network and view the current and emerging technologies in decentralized wastewater treatment.

The 2008 conference is being held on the shores of the Mississippi River in Memphis, Tennessee, and is a follow-up of the 2007 international conference. NOWRA is promoting a holistic view of water and water resources and is fundamentally interested in promoting appropriate technology and processes for water and waste water. Based on the historic, current and emerging issues of the great river city of Memphis and the overall goals of NOWRA, the theme for this conference is *Past, Present and Future: Water's Value is a Constant*.

In addition to the three-day annual conference covering a broad range of topics relating to onsite/decentralize wastewater treatment, NOWRA will host a pre-conference session on April 7th focusing on *decentralized systems and nitrogen* and will likely have a track of the conference April 8th through April 10th focusing on the range of related nitrogen issues.

Two types of abstracts are open for considerations:

1. Technical topics including both case studies with limited data and research projects with a larger data set.
2. Policy topics dealing with regulations & policy, management, etc

They can be presented in a range of formats:

- A. Poster
- B. 30–45 minute presentations in either breakout or plenary sessions
- C. Panel discussions from 45 minutes to a full day
- D. Topic focused seminars from 1/2 to a full day

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

1. *Technical*
 - a. Influence of onsite systems on the surrounding eco systems
 - b. Modeling the fate of wastewater constituents: treatment processes and soil environments
 - c. Treatment processes: process level understanding of commonly used treatment components
 - d. Innovative products, technologies, and solutions for wastewater treatment
 - e. Nitrogen related research and case studies
 - f. Cluster system design and application
 - g. Reuse case studies and research
 - h. System performance evaluation
 - i. Modeling of decentralized systems
 - j. Soil and site evaluation research and evaluation tools
 - k. Fundamental decentralized related research
2. *Policy*
 - a. Business and research ethics round table discussion
 - b. Standards, regulations and policy
 - c. Effective planning and management
 - d. Cluster systems
 - e. Responsible management entities
 - f. Performance standards
 - g. Reuse
 - h. Education, training and certification
 - i. Successful planning and management strategies to assure performance

Abstract and Paper Deadlines

1. Abstracts submittals are due by **September 7th, 2007**
2. They will be submitted electronically at NOWRA's website at: <http://www.nowra.org/abstracts.html>
3. Confirmation of abstracts submission will be sent via email within one week of the abstract being received.
4. Individuals will be notified of the Education Committee's selection by **October 5, 2007** and provided with instructions regarding paper criteria and format. A draft agenda will also be provided at this time. This information will also be available on the web site.
5. Approved submittals are to be produced as papers and submitted via the website to the Education Committee for review and editing by **January 4th, 2008**.
6. Comments and/or edited papers will be returned to the author by **February 8, 2008**.
7. Final papers must be provided to the NOWRA Headquarters office by **March 3, 2008** in electronic format to be included in the proceedings and conference.

Submittal Procedures

The following information is needed to submit your paper via the web site:

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 of co-authors, if any.
6. Abstract Type
 - a. Technical
 - b. Policy
7. Format for presentation
 - a. Poster
 - b. 30–45 minute presentations in either a breakout or plenary sessions
 - c. Panel discussions from 45 minutes to a full day
 - d. Topic focused seminars from 1/2 to a full day
8. Session topic in which you paper best fits:
 - a. Influence of onsite systems on the surrounding eco systems
 - b. Modeling the fate of wastewater constituents: treatment processes and soil environments
 - c. Treatment processes: process level understanding of commonly used treatment components
 - d. Innovative products, technologies, and solutions for wastewater treatment
 - e. Nitrogen related research and case studies
 - f. Cluster system design and application
 - g. Reuse case studies and research
 - h. Soil and site evaluation research and evaluation tools
 - i. Standards, regulations and policy
 - j. Performance standards and system performance evaluations
 - k. Education, training and certification
 - l. Business and research ethics round table discussion topics
 - m. Successful planning and management strategies to assure performance
 - n. Other: _____
9. Title of paper
10. Abstract: 200–300 word description of the proposed paper/presentation. (Please do not send a PowerPoint presentation or the full text of the paper/presentation.)
11. A short biography that includes education degrees and description of experience as it relates to the onsite industry.

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

NOWRA'S THIRD ANNUAL INSTALLER ACADEMY

A Specialized Installer and Onsite Industry Training Program

December 10–12, 2007 • Riviera Hotel • Las Vegas, Nevada



The Installer Academy features the nation's leading educators and practitioners teaching skills and providing the technical knowledge needed to comply with state regulations. This program gives attendees 3 days of sessions with "State-Approved" CEUs.

NOWRA's 2007 program includes:

- ★ **The "NEW" Consortium Installer Education Course**
- ★ **Business Sessions**—with secrets to growing profits
- ★ **Practitioner Training**—giving experiences learned in the field
- ★ **Manufacturer Product Training Workshops**
- ★ **NEHA Installer Credential Examination**

Visit www.nowra.org for more information.



Count on the Installer Academy every year, always in December, always in Vegas!

SIGN UP TODAY – RESERVATIONS ARE GOING FAST!

Registration for NOWRA Members

Registration for NOWRA Non-Members

Name badges will be created using names below	Exhibit Hall Only \$95 ¹	1-Day Training + Exhibit Hall \$195	3-Day Training + Exhibit Hall \$195 until 9/30 ²	Name badges will be created using names below	Exhibit Hall Only \$95 ¹	1-Day Training + Exhibit Hall \$245 before 12/7 ²	3-Day Training + Exhibit Hall \$375 before 12/7 ³
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹\$150 on 12/10 or 12/11
²\$295 from 10/1 thru 12/7; \$395 on 12/10

¹\$150 on 12/10 and 12/11
²\$350 after 12/7
³\$475 after 12/7

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Card # _____ Exp. Date _____

Security # (3 digits on back of card) _____ Signature _____

Name on card (please print) _____

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City, State, Zip _____

Mail form to: NOWRA, P.O. Box 1270, Edgewater, MD 21037 or fax to (410) 798-5741. **For more info: (800) 966-2942 or www.nowra.org**

Note: Application and fees apply only to NOWRA Installer Academy activities. Participants are responsible for securing and purchasing their own hotel reservations.

THIRD ANNUAL **INSTALLER ACADEMY** *Request for Training Presentations*

The Installer Academy, a NOWRA premier education and training program, will again be held at the Riviera Hotel on the Las Vegas strip from December 10-12, 2007. Attendance and interest in this event continues to grow, and this year will prove it even better! Share your expertise and experience with others in our industry.

This conference focuses on specialized installer training programs. We are asking installers to share their valuable knowledge and experience in design, installation, inspection and O & M of systems, as well as some of the practical skills needed to do your job and run a successful business. This is your chance to participate as one of the trainers in a growing event! NOWRA is looking for trainers in the following areas:

1. Technical – Suggested topics include:

- a. Introduction topics
- b. Design of conventional and alternative systems
- c. Installation of conventional and alternative systems
- d. O & M of conventional and non-conventional systems
- e. Inspection of conventional and non-conventional systems
- f. Troubleshooting of conventional and non-conventional systems
- g. Other

2. Practical – Suggested topics include:

- a. Safety training
- b. Basic wiring
- c. Equipment operation, safety and maintenance
- d. Other

3. Business – Suggested topics include:

- a. Intro to business practices
- b. Tools for running a small business
- c. Incentive programs for employees
- d. Other

4. Vendor or state specific training - These programs fall under the vendor training room program. There is a \$500 fee for each 4-hour block of training along with the requirement of purchasing a booth at the conference.

It is important that we offer a range of topics of interest to onsite professionals during the 3 days of training. If you would like to share your knowledge on one of the topics listed or you have an idea for another topic, please provide the following information:

1. Category of training
 - a. Technical
 - b. Practical
 - c. Business
 - d. Vendor or state-specific training
2. A description of each training session which can range from one to six hours
 - a. Title,
 - b. A brief description of the topic,
 - c. Length of the training, and
 - d. For multiple topics, include an outline of the training with estimated length and speaker.
3. A description of any hand out materials that will be provided to attendees.
4. Any costs to NOWRA for proposed agenda
5. Background for each trainer which describes your areas of expertise and experience. This information will be used to meet CEU requirements and introduce speakers.



**Proposals are due
June 25th, 2007.
They can be emailed to
Sara Christopherson,
the NOWRA Education
Chair, at or faxed to
612-624-3434.**

Any questions about potential topics should be directed to Sara as well. She can be reached by phone at 612-625-7243.

Even if you are not able to share your expertise this year...come join us in the fun, excitement, and tradition of NOWRA's Installer Academy. Bring your whole team! Early registration deadline is coming soon! Get registered today!

For more information visit www.NOWRA.org

Count on the Installer Academy every year, always in December, always in Vegas!

December 10-13, 2007 • Riviera Hotel • Las Vegas, Nevada

NOWRA Participates in the National Ground Water Protection Council Annual Policy Meeting

BY LINDA HANIFIN BONNER, PH.D., EXECUTIVE DIRECTOR

As part of NOWRA's direction to coordinate industry issues and work with other organizations, the National Ground Water Protection Council (NGWPC) has been one of several identified as a priority group. Attending the two day meeting in Washington provided a perfect opportunity to initiate a stronger dialogue between the two organizations and to establish a productive working relationship and partnership opportunities for the advancement of the industry. It also became apparent that it was even more important to attend this particular meeting, when the agenda included a whole afternoon discussion about onsite systems and the role that the NGWPC plays, and NOWRA was not identified as part of the presentations. [See accompanying article "EPA Seeks State Assistance" on page 17].

During the past years, and in previous issues affecting the onsite industry – particularly the "underground injection program", NGWPC has had a lead role influencing EPA and state regulars on positions regarding the issuance of permits for large-scale use of decentralized systems. NOWRA has taken a strong position regarding the impacts of state regulations—namely the UIC—on developments using septic systems. Similarly, during the past few years the organization has pursued studies affecting onsite systems and not communicated this work with the industry. Clearly, NOWRA has to be more involved in order to protect the interests of its members.

At the same time, many members of NGWPC (who for the most part are all regulators) also have responsibilities within their jurisdictions for approving septic systems. The NGWPC has produced a "Call to Action" report, which identifies specific strategies to protect the nation's groundwater. From this

continued on page 16

NOWRA's SepticLocator.com is YOU!

It's all about YOU—your business service, your products. Have you updated your member profile so consumers can locate you?

Did you know that 62% of people use the internet to find someone who offers a particular service or product? With completion of the SepticLocator technical changes, access to updated information is now even faster! The SepticLocator is both a NOWRA member directory, as well as a national resource of professional services and products in the decentralized industry. Septiclocator.com puts your business in front of thousands of potential customers with just one click. Think of it as the ultimate yellow page ad. Marketing costs can really cut into your bottom line, and NOWRA is taking the bite out of that cost. Your membership fee of \$30.00 provides you with an incredible opportunity.

It's easy to operate from both sides! For customers, simply entering their zip code and search category gains instant access to your company information. For businesses, updating their company information gains instant access to thousands of potential customers! That's why it's so important for your company profile to be current. Customers cannot find your services if your information is out of date or incomplete. Also, in order to maintain our status at the top of Google's listings, we request all SepticLocator businesses post the SepticLocator icon on their website.

This project has been a top priority since its inception in 2004. NOWRA worked with WebConnections (based in Baltimore, MD) to design and produce the original SepticLocator in 2005. In 2006, as the SepticLocator began operations, numerous events required other technical enhancements in NOWRA's overall website structure. These new enhance-

Septic System Trouble? Help is just a click away! www.septiclocator.com

Visit www.septiclocator.com to find a local company that can:

- Pump your septic tank
- Replace your system
- Provide onsite equipment
- Design and install a new system
- Advise you on proper maintenance

The companies and individuals listed on septiclocator.com are members of the National Onsite Wastewater Treatment Association (NOWRA). NOWRA members have access to up-to-date training and participate in initiatives to improve the quality of the onsite wastewater products, services, and regulations.

NOWRA

SEPTIC LOCATOR

Begin Here!

ments and a configuration to a new host server were completed in early 2007.

NOWRA is now pursuing an aggressive marketing campaign, which means your information needs to be on the site. The NOWRA member database is the core information source of industry products and services for the SepticLocator. All NOWRA members have access to update their information profile that identifies their available products and services. Members can easily update their member profiles by going to SepticLocator.com and logging in using their user name and password.

SepticLocator.com is also linked to the National Association of Home Builders (NAHB) Resource Center, the National Ground Water Association, and the Water Quality Association member sites. NOWRA state member websites and Business Benefit Program participants should also include a link to SepticLocator.com. As the 2007 marketing campaign increases, more links to member sites are an essential action needed to expand the access and use of this resource. ■

NOWRA Participates in NGWPC Annual Policy Meeting *(continued)*

major report, a series of fact-sheets have been produced that addresses each of the specific action initiatives. These fact sheets are to be used as a non-technical information resource for policy officials.

What is the National Ground Water Protection Council?

Funded by the U.S. EPA & DOE (no dues structures) the NGWPC is a “*national association of state ground water and underground injection control agencies whose mission is to promote the protection and conservation of ground water resources for all beneficial uses, recognizing ground water as a critical component of the ecosystem.*” They evolved as a group over 20 years ago, primarily to protect ground water from petroleum issues. The Members are primarily state & local regulators and also includes representation from private industry groups focusing on the petroleum industry. The National Ground Water Association is an integral organization in their work. In a similar capacity, GWPC members are also members of the Association of Water and Wastewater State Agencies (ASWIPCA) and, in fact, some are NOWRA members.

Relationship to the Onsite Industry

During the fall (October 2006) ASWIPCA board meeting, onsite systems was raised as an issue to be addressed because of growth issues occurring in states, etc. As part of GWPC’s new initiative “Call to Action” evolving from their strategic plan, a series of “message sheets” have been produced. One of them focuses on onsite systems and another on UIC. They are very well done (copies were made and provided to NOWRA’s Communications & Marketing Committee). Coincidentally, at the March 2007 board meeting in which onsite systems were addressed, the meeting was held in Washington, DC at the same time as the NOWRA conference, and yet, none these officials came to the NOWRA meeting.

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Meeting Events

The morning session focused on opening comments—a presentation from Cynthia Dougherty, U.S. EPA Drinking Water, which touched on the 1st phase of a plan underway for source water protection—creating a UIC national database about issues throughout the country and the ongoing research being compiled on where policies have translated into success stories; EPA wants them to report about accomplishments. The second part of the morning focused on the “Ground Water Report to the Nation – A Call to Action Report” and how it will be used and marketed, etc. Their primary goal (like NOWRA’s) is to raise public awareness on protection of ground water. A PR firm they hired presented some very interesting strategies to move their message and action agenda forward.

The lunch speaker was Mike Shapiro, EPA Assistant Water Administrator, who in his message, discussed septic systems not in a very favorable context in relationship to ground water—and at the same time, he did not mention the MOU work or other agency activities that are working to address these perceptions. While it was very disconcerting to hear his comments, it was also not an appropriate forum to address them. GWPC members had their own questions about the many disconnects within “Administrators” statements on protection and program issues and the lack of funding for projects they advocate to be completed.

The afternoon session focused on “Ground Water/Surface Water Issues Task Force” in which onsite systems was the primary agenda topic. [See accompanying article “EPA Seeks State Assistance” on page 17.] Joyce Hudson & Jennifer Hause (from SORA) had been requested to present information about what they are doing re: onsite system. NOWRA was also provided an opportunity to brief the group about the Association’s mission and particularly the work of the model code, the *Water for All Life* conference, and SepticLocator. There were a lot of misleading statements and information made about the industry by subcommittee members, which only reinforced the importance of NOWRA becoming involved in their work. As a part of the information exchange, the current issue of the *Onsite Journal* was distributed to the subcommittee members.

Opportunities

NGWPC leaders expressed a desire to establish a strong working relationship with NOWRA. There is an opportunity for a model code workshop or education session at their September 9th policy forum in San Diego. The GWPC president, Sara Pillsbury (NH), would like for NOWRA to consider providing a session, which has been forwarded to the Education Committee. NOWRA has sent a follow-up letter to the NGWPC officers and their Executive Director to encourage a stronger working relationship among the organizations. ■

EPA Seeks State Assistance in Analyzing Regulation of Septic Systems

EPA officials are urging state water regulators to gather information on how individual states regulate large septic systems, commonly called cluster systems, saying the information will complement agency efforts to strengthen state regulatory programs and that the agency lacks the resources to gather data on all aspects of septic system regulation.

Septic and other decentralized wastewater treatment systems are an issue of concern because poorly maintained, damaged or leaking septic systems discharge a wide range of pollutants to groundwater or surface waters.

Pollutants can include nutrients and microbial pathogens. EPA officials say 25 percent of U.S. homes have septic systems, and one-third of new construction uses them. Additionally, more than half of the nation's septic systems are more than 30 years old—making them more vulnerable to failure and discharges—and approximately 10 to 20 percent of all systems fail each year, EPA says.

In many states, septic systems are permitted by health departments, but an improperly managed system can harm water quality, a concern to state environment departments.

EPA signed an agreement in 2005 with several national organizations to work toward curtailing pollution from septic systems, but several key organizations, including the Association of State & Interstate Water Pollution Control Administrators (ASIWPCA) and the Ground Water Protection Council (GWPC), were not part of the agreement (Water Policy Report, Jan. 24, 2005, p4).

Recently, ASIWPCA and GWPC formed a workgroup to address issues of concern to both groups and chose management of septic systems as their first project, state sources say. The idea was to gather information on what each of the 50 states requires for siting and managing septic systems, which could then allow state regulators to “speak with one voice” on septic system issues and develop best management practices, one state source says.

But the workgroup had some second thoughts about the project when it learned EPA and the National Small Flows Clearinghouse (NSFC) were collecting similar information. NSFC is a nonprofit organization funded by an EPA grant and collects and disseminates information about onsite wastewater collection and treatment systems for communities of less than 10,000 people.

At an April 2 meeting of GWPC, Sarah Pillsbury of the New Hampshire Department of Environmental Services asked, “Is this the right project for us?”

EPA officials, however, said the agency's efforts will not address all types of systems and urged the state regulators to move forward with their project. The EPA-NSFC survey is geared toward gathering information about state regulation of individual septic systems and will not capture so-called cluster or other large capacity systems that treat wastewater from several homes, Joyce Hudson from EPA's Office of Wastewater Management said. “Where we'd need help is to move . . . to [gathering information on] large capacity systems” and how states regulate them, she said.

Hudson said developers have said it is easier to install individual systems in new developments, rather than cluster or high-capacity systems that may have a smaller environmental footprint. This may be due to developers' greater familiarity with regulations for individual systems rather than larger systems and states may need to clarify their requirements for larger systems, she said.

Michael Wireman, a groundwater expert with EPA Region VIII, asked what the trends are in the use of cluster systems. Hudson said individual states would know the breakdown of what is being permitted but that information has not been gathered at the national level.

Jon Craig of the Oklahoma Department of Environmental Quality said cluster systems are routinely installed in neighborhoods where individual septic systems have failed.

Pillsbury, who is the GWPC president and a member of the ASIWPCA-GWPC work group, said the state regulators will continue talking to EPA to see what information-gathering niche the states are trying to fill.

The survey EPA and NSFC is developing will gather information in two phases, EPA sources say. The first phase will gather information on states' current onsite wastewater regulations, whether different agencies regulate individual and clustered systems, whether money from state revolving funds can be used for septic systems and requirements for managing the systems. In the second phase, EPA regions will look at how well states' onsite system regulations include the program elements contained in voluntary EPA guidelines. Hudson said EPA will be looking at one state per region. Draft versions of the state questionnaires are available on InsideEPA.com. ■

Source: Water Policy Report via InsideEPA.com

Date: April 16, 2007

Issue: Vol. 16, No. 8

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2007 Business Benefit Program Members

Gold

Bio-Microbics, Inc.
Bord Na Mona-Puraflo
Consolidated Treatment Systems, Inc.
Containment Solutions, Inc.
Delta Environmental Products
FRALO Plastech
Geoflow, Inc.
Hoot Systems, Inc.
Infiltrator Systems, Inc.
Jet, Inc.
Netafim USA
Orenco Systems, Inc.
Premier Tech Environment
Ring Industrial Group, LP
Zoeller Pump Company
Xerxes Corporation



Silver

American Manufacturing Co., Inc.
Aquapoint Inc.
Concrete Sealants, Inc.
Salcor, Inc.
SJE-Rhombus Controls
Wieser Concrete



Bronze

Adenus Technologies, LLC
Ecological Tanks, Inc.
Front Range Precast Concrete
Norweco, Inc.
Waterloo Biofilter Systems, Inc.



Loyal

ARCAN Enterprises, Inc.
Coastal Plains Environmental Group
Gast Manufacturing
Quanics, Inc.



NOWRA's A to Z Training Seminars Well Received at Pumper Show

Whenever a trade show and exposition is crowded both on and off the trade show floor, you have to know something good is happening. And so it was at the recent Pumper Show in Nashville.

With the "can't miss" venue of Opryland as their backdrop, the people who make up the backbone of the industry were exposed to new and existing solutions to their business.

Beyond the "eye candy" of the trade show though is the educational forum, and this year the report card is A+.

This writer had the opportunity to look in on several meetings, and every one was very well attended. Even with seating for 600 in the breakout rooms, there were Standing Room Only situations. But the one I spent all day attending was NOWRA's A to Z training, and it was beyond my expectations.

Presented by Sara Christopherson of the University of Minnesota (NOWRA's Education Committee Chair) and Nancy Deal of North Carolina State University (NOWRA's Education Committee Vice-Chair), this full day series of one-hour presentations actually only scraped the surface of NOWRA's powerhouse A to Z curriculum. It was more like A to H simply because there wasn't enough time to present the full program.

Ask any of the 600+ attendees who attended each of the sessions and you will find a myriad of reasons why they were there. Sure, there is always the CEU reason, and that's fine, but when installers and dealers say they have sat through A to Z before and wanted to hear it again, or that they wanted their

new employees to learn from the ground up, you know you have a winner.

The biggest problem that seemed to face Nancy and Sara was not being able to grab a break between sessions, but that didn't seem to bother either of them. They usually had at least 15 people talking with them after each class to further discuss a point, and that was only broken up by needing to get the next session rolling. It even carried over into the trade show floor at the NOWRA booth where they continued to be met by attendees who either thanked them for their great presentations or asked follow-up questions.

NOWRA wishes to thank Cole Publishing for providing the forum for these classes and especially wants to thank Sara and Nancy for their very professional delivery of information everyone needs to know. NOWRA looks forward to presenting once again at the 2008 Pumper show in Louisville, Kentucky. ■

—MIKE STOLL, *Netafim USA*



NOWRA presented its A to Z Training Seminar at the Pumper Show in Nashville.



AN OPEN LETTER OF APOLOGY TO Xerxes Corporation

On behalf of the NOWRA Officers and Board of Directors and Conference Committee, we sincerely apologize for the unfortunate incident involving one of our most loyal business members. It was discovered at the NOWRA conference that Xerxes Corporation was listed as a NOWRA Silver Business Benefit Member instead of a Gold Member. This was immediately corrected in all materials.

Xerxes Corporation will be listed as a 2007 Gold Business Benefit Partner in all publications for the remainder of the year. A new business banner was made with the Gold Business designation for use and display at all NOWRA public programs. This status is listed in the Onsite Journal, on the website, incorporated in the SepticLocator, and corrected on the "Water for All Life" website.

2006 Annual Report to the Membership

Linda Hanifin Bonner, Ph.D., *NOWRA Executive Director*

INTRODUCTION

This report presents to NOWRA's members an accounting of the 2006 program accomplishments developed and endorsed by NOWRA's Board of Directors from its **2005-2006 Strategy and Business Plan** (October 9, 2005). It summarizes the base from which the Board of Directors and volunteer committee members conducted their work on behalf of their representative members. An accompanying graphic illustrates how NOWRA's work is organized and developed to support the State Associations programs and their growth.

A description of the programs within the **Business Plan** funded and implemented in 2006 identifies the activities that fulfill the mission, goals, and objectives of the organization. The Financial Analysis section addresses how NOWRA receives and uses its money in order to provide member services. Two graphics present membership information: one is a breakdown of members within each of the states and the second shows the composition of NOWRA's membership. As NOWRA's Board of Directors goes forward with its planning process for the future, the integration of the 2007 member survey will be an important factor in the consideration of programs and projects.

2005-2006 STRATEGY AND BUSINESS PLAN

Developing this plan involved participation from NOWRA's officers, board members, and committee members in a series of meetings in early 2005. The result of these work sessions produced updated and expanded Mission and Vision Statements. It also produced a new long-term goal: **To be the "go-to" organization on decentralized wastewater recycling.** Achieving the new vision and fulfilling the expanded mission now requires that NOWRA extend beyond its current efforts to create a broader network of members, partnering organizations, and the public. In 2006, the Board of Directors adopted another statement that represents the organization and its work and commitment to the industry: **People Caring About Water.**

The entire 2005-2006 Strategy and Business Plan is available on NOWRA's website. Excerpts from the Business Plan are used to present NOWRA's 2006 work and accomplishments. NOWRA's Board will review these efforts in 2007 at its annual planning session and further define future strategies and work for 2008.

The approved strategic pillars are the framework of principles for the plan and resulting action initiatives.

- **Maintain efficient and effective financial management and governance processes**

- **Develop and promote best practice and policy standards for onsite wastewater treatment and recycling**
- **Develop and promote best practice and policy standards for watershed management**
- **Develop and shape the industry through promulgation of the Model Performance Code**

From these pillars, the approved business plan action initiatives were produced and implemented as described in chart on the facing page.

NOWRA's 2007 plans will not include any new programs or projects until a new strategic business plan is produced mid-year. NOWRA's Board agreed at its December 2006 meeting that, in adopting the 2007 Budget, all activities would focus on completing remaining programs and projects. The 2007 business plan will include the results of the 2007 member survey being conducted under the auspices of the State Leaders Committee.

2006 PROGRAMS

Pillar #1—Management & Governance

The continuation in addressing the Association's governance structure was a major priority in 2006. Some of the activities began in 2005 were completed in 2006. In 2005 the adopted budget policy and production process was carried into 2006. This section also included procedures establishing how proposed programs are examined and resources obtained to ensure they were self-sufficient. At that time, an updated version of membership costs was completed and distributed to the membership.

In 2006, the board and committee members dedicated a significant amount of time to how NOWRA operates as a national organization and the role and responsibilities of its board and respective committees. The ByLaws Committee examined and updated the NOWRA bylaws. NOWRA's committee structure and interaction within the management of the Association were also examined and updated. Of significance to both the national organization and the states is the development of an operational policies and procedures manual. A preliminary draft was produced in 2005 and development continued on sections in 2006. A review draft is expected to be produced in 2007.

Institutes of Learning

In 2005, NOWRA established the Institutes of Learning as a national educational entity for the decentralized industry, which continued its work in 2006 with 3 state training sessions. The

continued on page 22

NOWRA's 2005–2006 Initiatives/Actions and Accomplishments

(The processes and capabilities from which work activities evolve.)

Initiatives/Actions

Accomplishments

PILLAR #1—Maintain efficient and effective financial management and governance processes.

Develop & adopt a strategy and business plan.	October 2005 – Completed and adopted the overall Strategic Business Plan and initiated implementation.
Establish a budget policy and formal budget process.	December 2005 – Adopted the budget policy and production process. 2006 – Completed first draft of NOWRA Policy and Procedures Manual for Organizational Operations.
Produce a “cost-to-serve” analysis.	December 2005 – Adopted; Produced an updated version of the membership costs for 2005 and 2006; established procedure that all programs are self funded.
Restructure NOWRA's Committee process.	August 2006 – Initiated the restructure and updating of NOWRA's committees roles, responsibilities and work plans (details on website).
Establish the NOWRA 501 C (3) Institutes of Learning.	November 2005 – NOWRA 501 C(3) Entity (Education and Entity and Research Foundation) was established; Structure for the NOWRA Institutes of Learning approved for implementation.

PILLAR #2—Develop and promote best practice and policy standards for onsite wastewater treatment and recycling.

Establish an annual Installer Academy with specialized training for industry practitioners.	December 2005 – Conducted the First Installer Academy. December 2006 – Second Installer Academy.
Produce and offer fee-based, self-sustaining education programs.	June 2006 – Concept produced by the Education Committee & training and adopted by NOWRA's Board.
Establish Specialty Symposiums.	2005/2006 – Conducted Water Softener Symposium and Nitrogen Program
Establish an RME Certification Program.	Task force established.
Conduct the First International Program on Decentralized Sustainable Systems.	Organized in 2006 and conducted in 2007.

PILLAR #3—Develop and promote best practice and policy standards for watershed management.

Create a NOWRA Business Partners Program.	Worked with NAHB-RC, WQA, and NGWA to create business partners.
Produce Position Statements and Papers.	Draft concepts produced.

PILLAR #4—Develop and shape the industry through promulgation of the Model Performance Code

Complete and Adopt the Model Code documents.	June 8–9, 2006 – Adopted (documents on website: www.modelcode.org).
Obtain funding and initiate an education and outreach program for regulators.	2007 – Received grant & developed program for implementation in 2007.
Establish a consulting services program for restructuring state and local codes.	Concept developed and information produced; listed on websites.

ADDITIONAL ACCOMPLISHMENTS

- Phase II of NOWRA's website upgrades and launched “free” septic locator listing as a strategic member benefit .
- All NOWRA members transitioned into new administrative database and listed in the online membership directory.
- Continuation of the NOWRA sponsored insurance program in response to State Leaders' requests for a health and medical program for their members.
- Participating with EPA in MOU Partnership program.
- Updated and revised NOWRA Bylaws for strengthening organizational effectiveness.
- Adopted new visual image and initiated corporate capability materials for promoting NOWRA's work and industry message.

2006 Annual Report to the Membership *(continued)*

purpose of this program is to provide organizational support to States as they establish and conduct their own training programs. Educational materials and instructor training sessions are provided within organizational and financial frameworks that enable State groups to profit from their programs. It is being integrated with the International Continuing Education Association in order to provide NOWRA members with a national certification program process and will be located within the Education & Research Foundation. The structure also forms the basis for NOWRA's CEU programs. Today, six states have programs that are financially successful and three more have plans to become a part of the Institutes. This program was implemented at no cost to NOWRA.

Education & Research Foundation

In 2005, NOWRA established the National Onsite Water Resources Education & Research Foundation, a 501 C(3) not-for-profit organization. The FOUNDATION is a separate organization of the National Onsite Wastewater Recycling Association (NOWRA) that is focused on research, certification and other programs that may be defined in order to advance decentralized wastewater technologies and applications towards protection and achievement of water quality. Its overall mission is to achieve technological and managerial advancements in water quality through the conduct and application of research and education programs and projects. In this capacity, the FOUNDATION serves as the mechanism in which the development and conduct of these activities occur. This foundation is also the organization in which the NOWRA Institutes of Learning resides and where industry certification programs will be located for practitioners. In 2007, work on the governance of the Foundation will be completed and a strategic business plan produced for program implementation.

Pillar #2—Industry Standards & Practices through Education

Evolving from this strategy are the actions taken to advance industry's standards and best practices. In NOWRA's mission, the main approach at this time is through education and training. NOWRA's primary education program occurs through its annual conference in which a variety of education programs are provided. In 2007 a link on the new NOWRA website will give members access to the papers and presentations from conferences and meetings over the past five years. This section will not be accessible to the public and is a valuable member benefit.

During 2005, and at the request of state groups and other organizations, the NOWRA Education and Training Committee produced a format to develop and deliver educational sessions. The most frequently requested program is NOWRA's A to Z of Onsite Systems. These services will continue in 2007 and States desiring this service should contact NOWRA's Education and Training Committee Chairperson, Sara Christopherson, or the NOWRA office.

In 2006 NOWRA conducted its Annual Conference in Denver Colorado (August 2006) and the 2nd annual Installer Academy in Las Vegas, NV (December 2006). The Installer Academy was established in response to industry requests for specific training and education, and was initiated in 2005. This program specifically provides the skills and education needed to fulfill industry standards and practices.

In 2006, organization and production for the 1st International Program on Sustainable Systems was initiated. This program, held in conjunction with the NOWRA Annual Conference, was co-sponsored by the Water Environment Research Foundation and the International Water Association. The program was held on March 10-15, 2007 at the Marriott Waterfront Hotel in Baltimore, MD., The program title, Water for All Life, focused on the integration of decentralized systems to support a sustainable water infrastructure. A new website was also established for this program.

Pillar #3—Watershed Management through Alliances

Activities within this strategy focus on the mechanisms to be used to achieve this goal. These initial activities were directed to establishing position statement and working with other organizations. In 2006, NOWRA continued its participation (also in 2005) within the EPA MOU Decentralized Industry Partnership. NOWRA provided the partnership with technical support for its own website and identity (www.epamoupartners.org). Similarly, NOWRA supports the work of this group through the participation its Model Code Education Program and Installer Training.

In addition, meetings between NOWRA and the National Association of Home Builders (NAHB) Research Center addressed the development community's needs regarding onsite technology and systems. Building industry members want to know who in the decentralized industry provides design and system services – and who to call for advice and products. With the new Septic Locator, this response is quickly provided. The NAHB Research Center established a direct link to NOWRA's website and the Septic Locator so their members can access this information. With this new service, NOWRA members now have expanded business opportunities. In addition, NOWRA partnerships with the National Ground Water Association and the Water Quality Association also promote the Septic Locator. In 2007 NOWRA will continue to strengthen partnerships with new organizations. This program is at no cost to NOWRA.

Another activity within this strategy focuses on legislative and government regulations that affect the industry's work and its role in the nations infrastructure. Since NOWRA does not have a paid lobbyist, it pursues a "grass-roots education" approach with staff members to the nation's congressional and senate leadership. In 2006 visits to House and Senate appropriations committees and delegation members were made by the NOWRA office to ensure that NOWRA is recognized as the "go-to organization" for information about decentralized systems. Staff members (as well as state governors) all receive copies of the NOWRA Onsite Journal and other publications. In addition, NOWRA is pursuing

an active role with the US EPA in monitoring and providing input on the Underground Injection Program in the states that affect industry members.

Pillar #4—Model Performance Code

The NOWRA Board of Directors adopted the completed framework for a Performance Code on June 9, 2006. This action culminated a 4-1/2 year endeavor to produce a framework responding to regulatory issues. With funding support from the U.S. EPA Office of Water, NOWRA also organized the planned education program for regulators and policy officials to learn how to revise codes for onsite wastewater treatment systems that incorporate performance measures to be implemented in 2007. A special website was established for this program.

The Education program features a series of workshops intended to assist regulators and policy officials with understanding how to use the recently produced Model Code Framework documents to evaluate, revise, or develop codes governing onsite systems. The content of the workshops features options available and steps involved to accomplish this process.

ADDITIONAL 2006 MEMBER SERVICES

Online Member Directory and Septic Locator

In December 2005, NOWRA contracted with a computer firm to refine the capabilities of its online locator into a comprehensive member directory and products and services locator. The new SepticLocator, produced in 2006, is a national online directory and search engine that allows consumers to easily find a local product supplier, service provider or individual industry practitioner in their area.

In March 2006, NOWRA transitioned all members into a new administrative database and listed them in the online membership directory. The goals of the new website directory are to strengthen communication between members and to become a national technical resource for consumers. The first phase of this work was completed in April 2006, at which time members received instructions on how to update their member profiles in order to provide accurate information to consumers seeking their services. *The invested cost of this funded project was \$15,000; however, the results of this work eliminated the printed directory that provides NOWRA an annual cost savings of \$17,000 (not including staff time)*

NOWRA member listings in the expanded Online Services Directory are also the foundation for the new Septic Locator search engine. Updated NOWRA member profiles are listed on the website under the new Septic Locator link. The Septic Locator key word search and Google-like ads direct business prospects and system owners to our member list. The design of this search engine is one of the most user-friendly septic yellow pages ever to appear in the onsite industry – and is now ranking at the top of the Google search! This program is now provided to NOWRA members as a no cost benefit. In 2007, a special marketing program will be developed to promote the availability of this resource and the public profiles of NOWRA members.

With the expanded capabilities of the online member directory each state association has the ability to manage its own member database through an administrative tool on the NOWRA website. Each state association will have a designated person with a special access code to update their state member records in order to eliminate duplicate work and sending monthly lists to the national office. The NOWRA office provided training to state administrators and also provided the updates for those states without technical support.

The result is a more efficient and cost-effective process for both the state groups and the national office. Duplicate records have been eliminated, providing a cost savings in postage for mailings of member materials. Both NOWRA and the state groups now have the latest member updates so that when an online change is made, both offices share the same common database for accessing member information - resulting in a significant savings of cost and time. This program will continue in 2007 with future updates to provide additional support to States in managing their membership database. The cost of this project was \$5,000, which means that over a 3 year period this investment will save NOWRA \$20,000 in reduced costs to manage and report on membership records.

Insurance Program

This program was launched in 2005 and continued in 2006 in response to State Leaders' requests for a health and medical program for their members. Marketing of this program occurs through NOWRA and Association Health Programs. Information is provided to all state groups at annual meetings and conferences. Annual flyers summarizing key benefits of this program are provided to each member with their membership mailing. Additional information is also available on the NOWRA website for

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2006 Annual Report to the Membership *(continued)*

use in state newsletters and meetings. This program will continue to be sponsored by NOWRA in 2007 for member states, with an analysis of other services underway. Costs associated with this program are reflected in management and production of promotional flyers and materials.

Member Services to State Groups

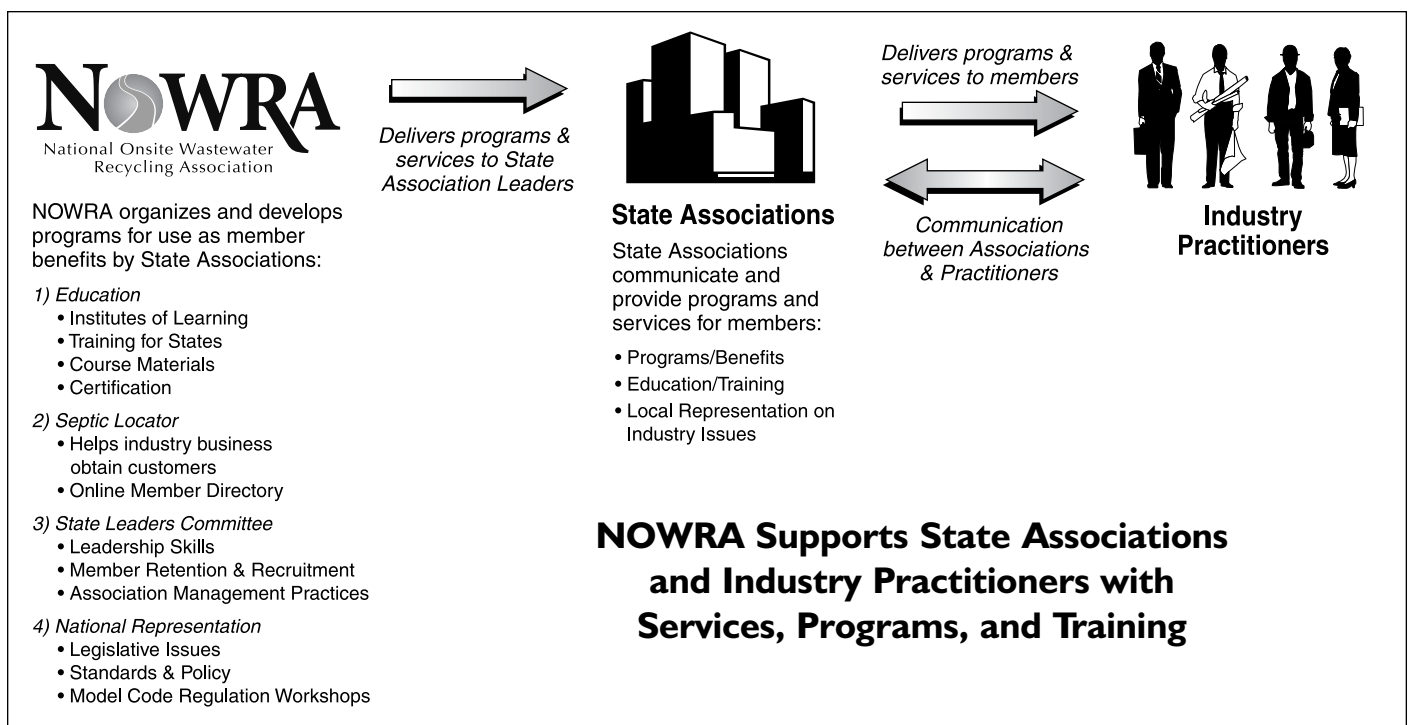
NOWRA supports its State Groups with services, allowing the Associations to provide ongoing benefits, keep existing members and recruit new ones through programs, activities and products that include:

- Free website hosting and technical support services to the states.
- A centralized online membership directory and state member database.
- Septic Locator, an online website directory of all members that is linked to NAHB-RC ToolBase, the National Groundwater Association website, the Water Quality Association website and those of the EPA and MOU organization partners.
- Member Health & Medical Insurance Program.
- Participation in a Business Member discounts program at Office Depot.
- State access to Directors & Officers liability insurance program.
- Availability of materials for the organization of State Association finances, including a Membership Retention & Recruitment Manual; Grassroots Legislative Action Plan Guidance and Direction.
- Organization and financial management support and training, such as strategic planning sessions.

- The NOWRA Institutes of Learning, which provides a standard method for State education programs in quality and documentation of education and training units.
- Quality education sessions at the NOWRA Annual Conference and Installer Academy that enhance member skills and knowledge.
- Conducting Education & Training programs upon requests of the States.
- Availability of Board Members and Officers to give presentations and provide materials at annual State conferences and meetings.
- Representation at State & National agencies on issues affecting industry interests.
- NOWRA Consultant Services on Regulatory Codes.
- Participation by State leaders in monthly teleconference calls regarding current and ongoing issues affecting industry interests.

Semi-annual workshops and training sessions for State Leaders to build and advance association programs and projects.

NOWRA also provides its State leaders with leadership development skills, training in membership recruitment and retention, and business management practices for non-profit associations. Meetings are held twice a year with the leadership team from the States to define where NOWRA support is needed, to address membership issues, and provide administrative support for stabilization. Participation in the monthly teleconferences enables States to keep current on activities facing their constituents. In addition, States are given information from the national office for use in newsletters and activities.



FINANCIAL ANALYSIS

NOWRA derives its funding for operations and the conduct of its programs and projects from member dues, the annual conference, advertising in its publications (the *Onsite Journal* and Conference Program) business support and special project grants. Since its inception, these areas have been the primary source of funding. NOWRA's growth has expanded its services and benefits to its members. However, the funding base for member services has not increased proportionately. In 2006, membership income declined, as three state associations were unable to affiliate due to financial issues.

NOWRA Revenues: In 2006 NOWRA's income came from the following sources.

- 50%** Annual Conference and Installer Academy
- 16%** Membership Dues (both state and individual)
- 12%** Business Benefit Program – which includes prepayment of exhibit booths and advertising in the conference program and onsite journal for the year
- 11%** Advertising derived from the onsite journal, conference program and any other publications – not in the Business Benefit Program
- 10%** Funding from outside sources, e.g., grants/donations

NOWRA Expenses: In 2006, NOWRA's overall expenses were directed to the four core areas listed below. 2006 expenses were reduced from 2005 and a decrease of member servicing costs also occurred due to efficiencies with overall administrative services.

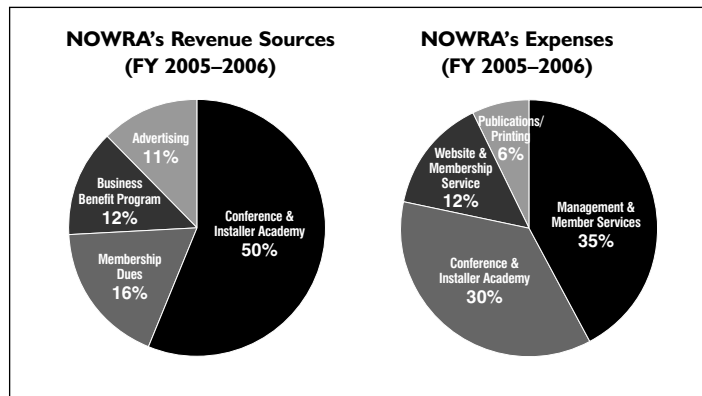
- 35%** Management and member services (primarily for NOWRA office staffing support, postage and mailings) had an 8% decrease from 2005. In 2006 NOWRA paid \$222,000 for management services (Executive Director, 2 full-time, 1 part-time staff). Actual costs for services provided by the management company in 2006 were \$340,492.00. The Executive Director's W-2 statement of 2006 earnings was \$49,800. NOWRA does not pay rent or utilities (except for actual cost of telephone usage for 3 lines), does not own any computer equipment, nor pays costs for upgrading and maintenance.
- 30%** Annual Conference and Installer Academy costs (support program development and management)
- 12%** Website & Membership Services and Enhancements
- 16%** Publications/Printing – the Onsite Journal, Septic Help brochure, Homeowner/Consumer folders, and others
- 7%** Special projects –e.g., model code

Any profit gained from the success of NOWRA's conference and academy and not used for other purposes is then used to fund member programs and projects.

2006 Member Services Analysis

In 2006, while overall expenses were reduced, three areas directly related to increased member services.

- I. Investment to develop the Septic Locator online member directory and membership administrative program will in the long-term be a cost savings.



2. New marketing materials for the National Association and subsequent use by the states to promote the industry's work – that will be used to generate new revenue sources.
3. Printing and postage to send information regarding the insurance program and benefits provided by NOWRA directly to members, along with instructions to update member profiles on the member directory and Septic Locator.

Member Dues: NOWRA's Board of Directors sincerely appreciates the State support and agreement to increase the member dues rate by \$10.00, beginning in 2006. The increase was made based upon the recommendation and support of the NOWRA State Leaders Group at its April 3, 2005 meeting. This recommendation was made as a result of a presentation and analysis of financial issues in maintaining a lower dues structure. Following that meeting, the NOWRA Board of Directors voted on June 12, 2005 to increase the 2006 member fee from \$20.00 to \$30.00. This rate continues in 2007. A decision will be made in 2007 regarding an increase in 2008 member fees to the \$40.00 rate that was originally in effect in 2001.

Member Servicing Costs: Membership dues for individuals not affiliated with a state association are \$140.00 a year. Regulators rates are \$60.00 a year and student membership is \$35.00. NOWRA membership dues through an affiliated state association are \$30.00 a year. Expenses directly associated with member servicing are those that relate to management & member services, postage and mailings, education and training, communications and publications. It is these expenses that are used to calculate the real member cost, based on membership dues income. Other income, such as advertising, is used to offset costs of publications; additional revenues from conferences and the installer academy are used to fund additional projects and programs.

2006 Membership Income = \$138,480.

2006 Member Costs (in categories above) = \$269,275.

- 2006 Service Costs for 5093 members = \$25.68 loss per member
- 2005 Service Costs for 5115 members = \$28.34 loss per member
- 2004 Service Costs for 4864 members = \$30.40 loss per member
- 2003 Service Costs for 3577 members = \$58.40 loss per member

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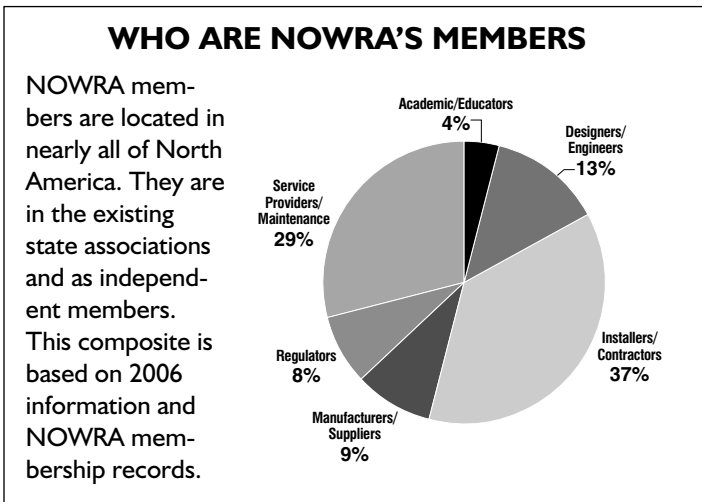
SUMMARY

As an organization, NOWRA has more than doubled its membership since 2001. This increase is a result of the growth of an industry that services nearly 40% of the nation’s wastewater infrastructure. The membership growth has primarily occurred through the affiliated state associations that NOWRA supports, as shown in the state report chart. With industry growth, a demand for increased services is also occurring. However, the income pattern for NOWRA has not changed, and new sources of revenues have not occurred in the past five years.

NOWRA’s 2005–2006 Strategy & Business Plan stated that “existing revenue sources alone are insufficient to drive activities under NOWRA’s previous mission, much less support its broadened mission and vision. Developing a more diverse, robust and sustainable funding model, driven by new financial policies and procedures is therefore a major priority.” Opportunities for additional revenue sources currently exist within the 2005–2006 Plan.

- Identifying and pursuing program grants within the Education & Research Foundation framework
- Establishing a Specialty Technical Symposia Series
- Completion of position papers, development of policy standards and accompanying certification programs
- Organization and implementation of defined certification programs within the Institutes of Learning
- Implementation of the NOWRA Regulatory Code Structure and Management Consulting Services Program

NOWRA’s 2007 work and accomplishments will be dependant upon many variables: how the alignment of member support and volunteers materializes to advance the Associations goals with the identified member needs, and how the generation of revenue sources occurs to implement the defined programs and projects. ■



NOWRA STATE MEMBERSHIP REPORT

Constituent State Membership <i>(Shaded states are not affiliated with NOWRA)</i>	2006 Paid Members	2005 Paid Members
Alabama Onsite Wastewater Assoc. <i>(not affiliated)</i>	17	20
Arizona Onsite Association	25	35
California Onsite Wastewater Association	245	316
Colorado Professionals in Onsite Wastewater	143	95
Concrete Precasters Association of Ontario	33	82
Carolina Onsite Association (includes North & South)	53	31
Delaware Onsite Wastewater Association	242	219
Florida Onsite Wastewater Association	474	473
Georgia Onsite Association <i>(not affiliated)</i>	12	6
Iowa Onsite Wastewater Association	427	411
Kansas Small Flows Association	114	119
Kentucky Onsite Wastewater Assoc. <i>(not affiliated in 2006)</i>	27	171
Maryland Onsite Wastewater Professionals	67	169
Minnesota Onsite Wastewater Recycling Association	28	48
Michigan Onsite Wastewater Association	98	93
Missouri Small Flows Association	382	319
Nebraska Onsite Wastewater Association	67	79
New Jersey Onsite Professionals Association <i>(individual members)</i>	17	32
New Mexico Onsite Association <i>(not affiliated)</i>	12	15
Ontario Onsite Wastewater Recycling Association	198	111
Ohio Onsite Wastewater Association	248	191
Oregon Onsite Wastewater Association <i>(not affiliated)</i>	6	15
Pennsylvania Onsite Wastewater Association	54	67
Tennessee Onsite Wastewater Association	74	78
Texas Onsite Wastewater Association	365	391
Utah Onsite Association <i>(not affiliated)</i>	9	9
Virginia Onsite Wastewater Association	235	281
Washington Onsite Wastewater Association	416	282
Wisconsin Onsite Wastewater Association	175	235
Wisconsin Precast Association	32	27
Yankee Onsite Wastewater Association	105	
Total State Membership Numbers	4388	4519
Additional Independent Membership	703	596
Total Membership as of 12/06	5093	5115

NOWRA 2007 Member Survey.

Sponsored by the NOWRA State Leaders Committee, a survey of member issues is being conducted in early 2007. Its purpose is to assist both the State Associations and NOWRA in better understanding member needs for services, identifying future programs, and other areas affecting your work in the industry. The information received will then be used by the states and NOWRA leaders to prioritize future programs and projects to provide for the membership, and the level of resources needed to accomplish them. Completing this survey will require about 15–20 minutes. Once completed, please fax it to the NOWRA headquarters office at 410-798-5741. It is not necessary to provide your name; but we do need to know the state in which you are a member.

1. What are the reasons you joined an industry organization? (please circle the appropriate letters)

- a. To obtain needed education and training.
- b. To have my professional interests represented on regulatory and legislative issues.
- c. To participate in a health insurance program.
- d. Networking with other professionals.
- e. Future job opportunities.
- f. My business (boss) requires it.
- g. I like the Septic Locator.
- h. Other, please state _____

2. On a scale of 1 (low) to 5 (high) please give each item a rating about the value you place on the following association services.

- _____ Education and training
- _____ Representation and protection of professional interests on regulatory/legislative issues
- _____ Participating in a health insurance program
- _____ Networking with other professionals
- _____ Future job opportunities
- _____ Participating in the Septic Locator
- _____ Other, please state _____

3. What programs or services would you like your association to provide?

4. Please rate on a scale of 1 (low) to 5 (high) those items from the list below that describe what you need most, as a professional in this industry, to advance your business or career.

- _____ Basic education and training for all industry levels.
- _____ Knowledge about rules and codes at the state and national level.
- _____ Regulator support for industry codes.
- _____ Higher levels of expertise for designers & installers.
- _____ Established standards for maintenance and service.
- _____ Other, please state _____

5. On a scale of 1 (low) to 5 (high), please rate the actions and initiatives in the list below that you believe the onsite industry should either address in its work or provide.

- _____ Adopting design standards for onsite systems.
- _____ Certification Programs for installers, service providers, system designers, engineers.
- _____ Funding for research projects.
- _____ Advocating state requirements for continuing education and training.
- _____ Having a capital hill lobbyist.
- _____ EPA/State Underground well injection program
- _____ Partnering with National organizations on common professional issues
- _____ Industry standards on installation, operations and maintenance and system design.
- _____ National homeowner education program.
- _____ National system inspection (program) at point of sale
- _____ Developing Responsible Management Entity (RME)Standards
- _____ Other, please state _____

6. Please rate, on a scale of 1 (low) to 5 (high) the following programs that NOWRA should provide.

- _____ Becoming a national certification organization.
- _____ Specialized Training Seminars.
- _____ Support to State Associations with Education and Training.
- _____ Professional development programs
- _____ Online education & training
- _____ Technical design manuals
- _____ Industry standards.
- _____ An educational clearinghouse for the decentralized industry.
- _____ Services to improve onsite system standards

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7. Member Benefits

a. What are the three most important benefits that your State Association currently provides that supports you in your profession?

b. What are the three most important benefits that the National Association currently provides that supports you in your profession?

8. Member Needs

a. What are three services that you need from your State Association that represent the value of your membership?

b. What are three services that you need from NOWRA that represent the value of your membership?

9. Please rate on a scale of 1 (low) to 5 (high) the following services and benefits.

- _____ NOWRA Annual Conference
- _____ NOWRA Installer Academy
- _____ NOWRA Onsite Journal
- _____ NOWRA Septic Locator
- _____ NOWRA Institutes of Learning
- _____ NOWRA Sponsored Insurance Program
- _____ NOWRA Sponsored Office Depot Business Program
- _____ NOWRA Website Hosting Services
- _____ State Annual Conference
- _____ State Education Programs
- _____ State Newsletter
- _____ State Website

10. Responder Information

a. What is your professional category?

b. How many years in this profession? _____

c. Do you hold any certifications? _____
If yes, please identify _____

d. What State Association are you a member?
_____ How long? _____

e. Did you join the State Association to become a NOWRA member? _____

f. Would you recommend a colleague to join a State Onsite Association? _____

Please fax the completed survey to the NOWRA headquarters office at **410-798-5741**.
It is not necessary to provide your name; but we do need to know the state in which you are a member.

Thank you for taking the time to complete this survey!

An Open Letter to NOWRA's Members and State Associations

From Tom Groves, NOWRA Vice President — April 20, 2007

From time to time, the NOWRA Board of Directors receives inquiries from our state member associations on various issues affecting their members and/or member benefits. On behalf of the NOWRA Board of Directors, we appreciate this input and thank those who take the time to put down their thoughts on how NOWRA can become a stronger organization and better serve its member states. We appreciate candor and suggestions for improvement; suggesting potential solutions shows a real commitment towards collaboration and for bettering the organization.

I've broken this article down into some of the issues recently brought to the Board's attention:

"Who is NOWRA?"

The question is often heard, "Who is NOWRA?" and "Who does it serve?" The present board is working hard towards refining this message and getting it out to our constituents. I think we all agree that NOWRA cannot be everything to everybody; we simply do not have the resources to accomplish this and the task would be near impossible.

So who do we envision NOWRA to be? The answer is: NOWRA can be different things to different people (i.e., individual members, companies, organizations, universities, etc.). The present Board strongly believes that NOWRA should be a resource for the industry and our state associations to help advance the onsite industry and protect the environment. Some of these roles could include assisting state member associations with bylaws development, keeping members apprised of federal/state/local legislation, advancing the Institutes of Learning, participating in the EPA Partners MOU, etc. Much of NOWRA's past success has stemmed from its education and technical programs—this has been the strength of the organization. Many talented instructors and experts in the field are NOWRA members and have offered their services over the years to help professionalize the onsite industry through NOWRA's educational programs.

NOWRA's Annual Technical Conference is Not Relevant to Installers

We've received some comments recently that the technical nature of the annual conference may actually discourage installers and service providers from attending. Yes, the NOWRA Annual Technical Conference is technically focused, but there are generally multiple sessions to attract all

interests. Additionally, as NOWRA has continued to grow, we have had increasing difficulty in attracting installers to the annual conference. NOWRA has never had great success attracting installers from around the nation to its annual conferences. At best, we generally attract some installers from the local area where the conference is being held. Past attempts of "Backhoe Ro-De-Hoes" have proven unsuccessful, so instead of beating our heads against the wall, the NOWRA Board in 2005 listened to the installer membership and created the Installer Academy—a program developed specifically for the installer. In the meantime, the Education Committee elevated the quality of papers and presentations to be included in the annual technical conference where many academics, researchers, regulators, and manufacturers often attend.

The Installer Academy was also purposely sited in Las Vegas in December to avoid state association meetings as well as the construction season for many of the northern states. The Installer Academy was created to respond to the many installers who make up the NOWRA membership by providing a forum for national installer training. Our hopes are to try and bring installers from as many states as possible together to learn from each other and from some of the talented speakers. The presentations at this conference do not have the same rigorous requirements as the NOWRA annual technical conference, but the content is still exceptional. We hope this will encourage and provide an opportunity for installers and other service providers to share their own experiences with a national audience at this venue in a peer to peer format. The sharing of experiences and knowledge from individuals from different states is extremely important for the transfer of knowledge between states and the onsite industry.

NOWRA is confident that the Installer Academy will not compete with our state association meetings. The Education Committee is working hard towards making the Installer Academy a different type of training program for the small installer company. We envision the Installer Academy to offer specialized training that is not readily available at most state meetings, such as business development skills, Onsite A to Z course, OSHA safety, and manufacturer specialized training. We do not believe that we will attract large numbers of installers or service providers from any one state, but instead will attract a few from many states; thus not causing hardship to any of our state associations.

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An Open Letter to NOWRA's Members and State Associations *(continued)*

NOWRA Board of Directors

NOWRA's bylaws currently state that the Board of Directors should be made up of at least two representatives from each of the following industry groups: regulators, designers/engineers, installers, service providers, academics, and product manufacturers. The present Board follows suit with these bylaws, but periodically a board position is vacated or a Board member moves from one segment of the industry to another. This is quickly balanced once the new election occurs or the current president appoints a replacement Board member as is his/her right according to the bylaws.

Presently there are not specific representative spots for state association presidents or executive directors on the NOWRA Board. This is an issue that the current Board will be visiting now that our bylaws have been brought up to date (December 2006—also available on the NOWRA web site). A Task Force has been created to investigate alternative Board composition options and report back to the State Leaders Committee and the Board. It should also be noted that although there is not a devoted Board spot(s) for state associations at this time, there

is presently ample state representation on the Board of Directors via members who also serve or who have served as Board or Officers of their state associations (i.e., Tom Groves who is presently the Vice-President of the New England states association (YOWA); Brian McQuestion who recently completed the term of President of the Wisconsin association; J.R. Inman, Washington; Sara Christopherson, Minnesota and others). The Board highly encourages nominees from state associations that fit into the existing board categories.

The NOWRA Executive Committee understands the high cost of travel and the expense incurred by Board members as they participate on the NOWRA Board. Although we would very much like to offer travel reimbursement for Board members since they devote many volunteer hours to the association, unfortunately with NOWRA's current financial position, we are unable to accommodate this, but it is a goal of the organization as is our goal of creating financial stability for the whole association. Present commitments from Board members require monthly Board conference calls and quarterly face to face meetings. NOWRA tries to coordinate the face to face meetings with other travel commitments, such as the NOWRA annual conference and Installer Academy, in order to reduce travel costs. In addition, an attempt is made to schedule other quarterly meetings at a convenient location or at a location of an upcoming NOWRA annual conference where the meeting room and oftentimes hotel rooms are provided free of charge. Current and prospective Board members are made aware of the financial travel constraints during the nomination process and agree to assist in covering their own travel expenses through their company, university, or agency.

Member Services

As NOWRA continues to grow, there are new and necessary tools needed to better serve the membership. In 2007, NOWRA's new and improved web site debuted; and I believe all will agree that it is a great improvement. We plan to utilize the web site as a primary source of information sharing for our membership. Additional solutions to increase member services include refinement and clear definition of the Executive Director duties, increased staff support, enhancement of NOWRA's standing committee roles and resources (including potential committee staff interns), and the incorporation of new technology to assist the management of the association. Some of these improvements include membership database software, online registration capability (both for NOWRA and for state groups), web site bulletin board enhancements, etc. Unfortunately, some of these additional tools require financial resources that NOWRA does not presently have, but hopes to soon.

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The NOWRA Institutes of Learning (IOL) was created to assist state member organizations with credible education materials and contact hour tracking. It is a program that NOWRA has high hopes for, and will serve as a model of what NOWRA is able to offer our member states. The Board will also continue to work closely with the Consortium of Institutes for Decentralized Wastewater Treatment (CIDWT). NOWRA values its relationship with CIDWT and has the highest respect for the Consortium materials and instructors, some of who are also past or present NOWRA Board members. NOWRA has worked with the Consortium on many of the projects that were funded by the National Decentralized Water Resources Capacity Development Project (NDWR-CDP) and at least one third or more of the individuals who worked on the O&M Manual were NOWRA members. NOWRA looks forward to continuing our close relationship with the Consortium as the annual conference, IOL, and Installer Academy continue to grow.

Office Location, Management Services, and Conference City Selection

The NOWRA Board occasionally hears concerns and suggestions about the main office location, Executive Management services, and conference city selection. We appreciate these concerns and suggestions because it shows that our members care about the association’s well-being and operations.

The present (and past) Boards have believed that it was important to have an office presence on the east coast due to the proximity to EPA’s office in Washington, D.C., as well as other national organizations such as WEF, NESC, NAHB, etc. We understand the cost of doing business on the east coast can be more costly, but strategically, the Board was willing to accept it, especially with the prominence of onsite/decentralized systems in EPA’s upcoming watershed agenda. This does not mean that this will be the permanent location of the NOWRA office, but it explains the theory behind the Board’s logic and current location.

The current Executive Management contract expires at the end of 2007. The Board believes that it is healthy for every organization to review their needs and go through a Request for Proposal (RFP) process every few years to make sure that member services are being met. The NOWRA Bylaws Task Force is presently forming a job description and RFP for future Executive Management services that will be presented to the full Board in June. The Board plans for an open RFP to be issued during the summer of 2007 to the current Executive Management Company as well as others that may be interested. The RFP will be followed with the review, interview, and selection of candidates during the fall months.

When it comes to selecting locations for the annual conference, NOWRA’s Conference Planning Committee usually targets Tier-2 city locations due to financial considerations

about airfare, hotel, and meeting room costs as well as accessibility from major airports. The 2007 conference in Baltimore was an exception to the rule due to its specialized International agenda. For 2008, NOWRA’s annual conference will be held in Memphis, TN. There is a current RFP for 2009 and 2010 cities, but due to our conference’s growing size and exhibit hall requirements, we are sometimes forced to consider cities that are more expensive than Tier-2 cities. The Board is also sensitive to the requests of our state groups to not compete with their annual conferences, which are often held in the winter/early spring months. Because of this, NOWRA targets alternative months and cities/states where no potential conflict exists.

On behalf of the NOWRA Board of Directors, we thank all members and state associations for expressing their concerns and suggestions about the organization and suggesting ways to make it stronger. Your interest can only make this organization stronger. We welcome all members who are interested in pursuing a role on the NOWRA Board of Directors or on one of the standing committees (Education, Technical Practices, Model Code, Conference, Marketing/Communications, External Affairs, etc). If you have any interest in a Board or Committee position, please contact the NOWRA Office at (800) 966-2942. ■

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Missouri's Onsite Wastewater Treatment System Laws Help Protect the Environment and Homeowners

The state of Missouri is well endowed with water resources—two major rivers, hundreds of miles of smaller rivers and streams, a number of major reservoirs, thousands of small lakes and ponds, and high quality groundwater in the Ozarks.

These valuable resources daily contribute to the quality of life for every Missouri citizen by providing public and private sources of drinking water, life to thousands of species of wildlife, irrigation water to agriculture, a necessary resource for the state's industries, and countless hours of pleasurable recreation including fishing, boating, swimming, hunting, bird watching, camping, etc.

Every Missourian is tied to the state's water resources in a variety of ways and therefore has a responsibility to use this resource wisely, protect it from harm, and preserve it for future generations. Water resources are finite and can be polluted or destroyed.

One of the largest challenges to maintaining the quality of our water resources is the collection, treatment and dispersal back into the environment of the many wastes produced in our society. Every citizen produces wastes of some kind and therefore has a personal stake in maintaining water quality, and because disease can be transmitted via water sources, protecting public health.

Approximately 30% of Missourians live outside of urban areas that provide public wastewater collection and treatment. These citizens must depend upon onsite collection and treatment systems that utilize the soil as the final dispersal environment. These onsite systems, if not designed, installed and maintained correctly can be detrimental to water quality and public health. The problems of sub par onsite systems intensifies as the state's population increases and more citizens purchase small parcels of land outside of urban areas and live close to one another.

Urban areas adopted regulations to safe-guard water quality and public health long ago, but prior to 1995, similar regu-

lations in rural areas did not exist. Septic tanks were often made of car bodies, old refrigerators, or 55 gallon barrels. These "systems" open discharged raw, untreated sewage into streams, lakes, and into road ditches. In August of 1995, the State Legislature passed Missouri's first law regulating onsite wastewater treatment systems to provide minimum standards for designing and installing onsite systems to protect and maintain our valuable water resources and maintain public health.

Why should onsite installers be required to have a license and obtain continuing education?

We've all heard it; "My daddy did it this way for 50 years—if it's good enough for him, it's good enough for me." Let's be real; modern on-site wastewater treatment has taken a tremendous leap in the last 10 years. Our knowledge of soils and how it interacts with wastewater has mushroomed. A large body of knowledge has been assembled nationally that allows the appropriate technology to be chosen for various soil and site conditions. Because of these advances, the onsite industry is becoming an industry of *professionals*, and those that work in this industry must take advantage of the available training and education to remain so. Those that do not will most likely continue to install substandard systems, which will fail, and in the process degrade water quality, public health, and cost the homeowner thousands of dollars to repair or replace the system.

What do property owners gain from onsite regulations and installer regulations?

The biggest advantage that property owners receive from educated installers is:

- Assurance that the system installed is state-of-the-art technology & most reliable
- Assurance that the price of the system is competitive with other installers
- Assurance that the property owner is getting what they paid for
- Assurance that the installer will return to correct any problems. ■

Carolina Onsite Water Recycling Association

This April, the Carolina Onsite Water Recycling Association asks "Are you ready for a changing workforce?" With baby boomers reaching retirement, the wastewater industry stands to lose as much as 27% of its work force in the next 10 years. With this retirement comes the loss of on-the-job experience and technical know-how gained by wastewater treatment professionals who have spent years in the industry. Better and broader training is one solution, encouraging knowledge of wastewater treatment infrastructure at all levels of relevant education, from graduate to vocational. Utilizing retired professionals and emphasizing the value of the industry are other offered solutions, as well as accelerated recruiting. ■

Florida Onsite Wastewater Association

Florida focuses on the Wekiva Onsite Study this April. Initiated in June of 2004, the Wekiva Parkway and Protection Act required an intensive look at the environmental impact of development on the Wekiva Study Area and the Floridian Aquifer. Specifically, nitrogen impact to surface and groundwater quality was addressed by the Florida Department of Health (FDOH). Currently, the FDOH is examining the amount of

nitrogen that makes it into groundwater from a septic tank, as well as the differences between nitrogen loading by different categories of septic systems. After completion of these studies, a range of solutions will be provided if contributions of nitrogen from onsite systems are found to be significant.

There are also several bills in the Florida legislature regarding the onsite industry, including one that would create the Wekiva Onsite Sewage Treatment and Disposal System Compliance and Grant Program. The grant would provide financial assistance to property owners in the Wekiva River Protection Area for constructing, reconstructing, altering, repairing or modifying their onsite systems. Another bill requires mandatory inspections of onsite wastewater systems every five years. A third bill, created to protect Florida's springs, would require an assessment of existing conditions and evaluate and recommend strategies for future protection.

Don't forget, Florida's annual 2007 Convention will be held July 26-28 in Orlando, Florida! ■

Kentucky Onsite Wastewater Association

This spring, the Kentucky Onsite Wastewater Association (KOWA) focuses on education. As the onsite industry of Kentucky matures, the initial stages of education need to be revised to reflect this growth, steering away from retraining and more toward annual updates on changes and new technology. In the hopes of creating an integrated educational program with uniform requirements, President Katie Peake has requested that Kentucky onsite industry members provide their own ideas on educational reform. Members are directed to call their KOWA, KAMFES or Registered Sanitarian Committee members and provide their ideas and opinions. ■

Yankee Onsite Wastewater Association


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YOWA's 2007 Board of Director Election Results

We are happy to announce that the following YOWA members were elected to serve as the Board of Directors effective January 1, 2007 for a three year term: David Clark (MA), Steven Corr (MA), Stephen Dix (CT), Victor Giard (VT), Thomas Groves (Regional), James Jacobsen (ME), Russell Martin (ME), Andrew McBrearty (MA), Michael Moreau (MA), Daniel Ottenheimer (MA), David Potts (CT), Brent Reagor (MA).







Thanks to all who participated in the voting process; we appreciate your commitment to expanding the onsite wastewater profession. We will look to increase the Board in the future to insure that all New England states as well as all

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State Association Updates *(continued)*

sectors of the industry have a representative. The Board of Directors will be meeting monthly to help frame the immediate future of the organization by electing new Officers and sponsoring YOWA training programs and initiatives.

2007 YOWA Membership Renewals

In 2006, YOWA established itself as a viable and energetic state member association. Our membership at the conclusion of 2006 was 105 members. YOWA created cost-effective communication with our members in 2006 by the use of an electronic newsletter and a Web Site (www.nowra.org/yowa). We look forward to continuing these efforts in the coming year.

2007 will bring new challenges to YOWA. In order for YOWA to continue this effort and grow as a state member association of NOWRA, member dues were increased. Although the membership cost is an increase from the 2006 entry level dues structure, we believe it is still a great value. The membership voted on, and agreed to the 2007 membership rate at the October 2006 Membership meeting.

YOWA Establishes Two Committees

An Outreach Committee and an Education Committee were established at the October membership meeting. The responsibilities of the Outreach Committee are to continue the YOWA Newsletter as well as promote membership recruitment. The responsibilities of the Education Committee are to conduct training programs in at least two of the six New England states for 2007 (tentatively Connecticut and Vermont). Additional duties of the Education Committee are to bring training programs to each of the New England states on a rotational basis as well as assisting NEIWPC with the 3rd Northeast Onsite Wastewater Treatment Short Course and Equipment Exhibition planned for March 11-13, 2008 in Groton, Connecticut.

For information on YOWA, please contact the Interim President John Higgins at septicssystem@comcast.net or the NOWRA office at (800) 966-2942. ■

Rules That Govern the Practice of Onsite Designs in Washington

In Washington, the Board (WA DOL), through its rules and law, governs the practice of a licensed on-site designer. They receive questions from time to time that have a broader scope and implication. As I think about this on a national basis, I wonder what rules of conduct are similarly articulated in licensing board for designers and soil scientists in other states in similar situations. In any case, full disclosure with your clients is always the best rule of thumb.

Mr. Twiss, Executive Director, WA DOL writes:

“One chapter of the rules that has broad implications to all designers is the *Rules of Professional Practice* found in Chapter 196-33 of the Washington Administrative Code (WAC). Violations of the rules subject a licensee to disciplinary action that includes, among other things, license revocation, suspension and/or fines.”

Here is the situation

A manufacturer representative of an aerobic treatment unit (ATU) has an agreement with a state licensed designer to specify their product. The agreement usually recognizes that the designer is knowledgeable in the operational specifications of the product(s) offered by the representative and can appropriately design a system to make use of the product.

The problem comes in when the designer is given financial incentive by way of compensation and/or gratuity, from the manufacturer or their representative, to promote and incorporate the ATU in their designs. This is further exasperated when the designer does not reveal to their client that he or she is receiving such incentive when the ATU is included in the design.

In specific reference to this situation the following provisions of the *Rules of Professional Practice* apply:

- **WAC 196-33-300(9) Licensees shall only accept compensation from one party for services on a project, unless the circumstances are fully disclosed to and agreed to, by all interested parties.**
- **WAC 196-33-300(10) Licensees shall not solicit or, accept gratuities, directly or indirectly, from contractors, their agents, or other parties dealing with their clients or employers in connection with work for which they are responsible.**

If you are involved in such agreements please pay close attention to these rules and adjust your practice as may be appropriate. You may have a lot at stake not to. ■

—Submitted by John Thomas (revision of article published in the WOSSA newsletter by George Twiss, ED, WA DOL)

Safety in Your Workplace: Something to Talk About

BY JOHN THOMAS

In early November, WOSSA hosted the two day National O&M training program for onsite systems. With a host of local expertise and Dr. Bruce Lesikar from Texas A&M, operations and maintenance issues were reviewed and discussed with over 70, attendees. This program offers a sensible, systematic approach to documentation of all system components and technologies currently in the marketplace.

Included in the program were discussions on business ethics and safety. I was the presenter for the safety segment and thought I would share some things to think about as you go through out your day. Safety doesn't happen by accident (pun intended). There are two elements that must happen. The first is a safety management plan. Depending on your work activities, you as a company owner have specific responsibilities under your version of Labor and Industry in your state. To paraphrase the General Duty Clause of the code . . . you must provide for a safe workplace. It takes some effort to put an effective program in place.

In the presentation, we talked about safe behaviors and unsafe behaviors. Unsafe behaviors are the accidents waiting to happen. To set the stage, I asked the group this question. "How many of you have never had a speeding ticket? After a bit of hesitation, only one person raised her hand. I was really quite stunned, but then asked everyone, if the ticket received, modified the unsafe behavior of speeding? There was a lot of embarrassed smiles and chuckles, but I was really getting at the choices that people make, when unsafe behaviors are reinforced by positive feedback. Here's an example . . . those folks out on the highway that go over the speed limit by 10-15 miles an hour and pass a cop going in the other direction and he doesn't turn around to chase you.

- > Unsafe behavior: Speeding,....
- > Positive reinforcement for negative behavior: No Chasing, No ticket,....
- > Rationalization: If I were going any slower, I would get rear ended.

John Thomas is Executive Director of the Washington On-Site Sewer Association (WOSSA).

I know you have done it . . . so have I . . . often several times a day. So when we put these choices in context to unsafe behaviors on the job, accidents tend to happen due to four root causes.

1. Eyes not on **Path**....ever tripped or slipped because you were walking backward dragging a hose or piece of equipment....
2. Eyes not on **Task**something diverts your attention, the radio, a horn, the phone, someone in the shop yells to get your attention and your deeper into the bench grinder than you want to be.
3. Line of **Fire** . . . This is obvious, but as you are watching your cell phone drop out of your shirt pocket into the septic tank and you bend over and then get hit with the splash back. Do you have your safety glasses on?
4. **Rushing** . . . two more jobs to do, traffic backed up . . . and now you back to making choices.

Of course the situation gets worse (or more predictable) when you start making choices with more than one of the above "root causes" in play. . . Rushing, eyes not on task, line of fire . . . dominos.

Feel free to use this as a topic for discussion at your next tailgate safety meeting!

Be safe.....someone is depending on you. ■

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BY ANISH JANTRANIA AND ALLEN KNAPP

Abstract

If onsite/decentralized wastewater systems are to be accepted as alternatives to offsite/centralized wastewater systems, the performance expectations of both should be similar and well understood. Wastewater does not know or care whether it is treated by an onsite system or by an offsite system—the potential for adverse impacts on public health and environmental quality from untreated or mismanaged wastewater remains the same for both. It is, therefore, essential to define the performance expectations of onsite/decentralized systems that disperse treated wastewater into the subsurface soil environment rather than into surface waters and communicate those expectations to interested and concerned stakeholders. It is equally important in a performance-based regulatory program for onsite/decentralized wastewater systems that there be a monitoring program in place to assure that the expected performance is attained. When a community chooses a decentralized wastewater solution, it must consider the costs of planning, construction, and operation, but it also must consider the long-term costs associated with monitoring. Since most onsite wastewater regulatory programs are in their infancy with respect to performance monitoring, how can a community plan for those costs? Can a community afford water quality monitoring in the traditional sense, or are there other more cost-effective approaches?

In 2003, Virginia Department of Health (VDH) agreed to investigate the effectiveness of a performance-based regulatory framework when onsite/decentralized systems are installed and operated under management program levels four and five as outlined in the Voluntary Management Guidelines published by the U.S. EPA. As a result, Charles City County, Virginia became the first county in the Commonwealth to experiment with the performance-based regulatory framework. The county administrator, with the approval from the board of supervisors, signed an agreement with VDH to be the entity responsible for onsite/decentralized wastewater systems that would serve a group of existing homes. The homes selected either had failing septic systems or no systems at all; and those that lacked indoor plumbing used outhouses. A community development block grant administered by the Virginia Department of Housing and Community Development (DHCD) provided funding for the wastewater systems and for renovating the homes. VDH agreed

to regulate the decentralized wastewater systems under the agreement using a performance-based regulatory concept instead of the state's existing prescriptive regulations.

One of the important aspects of the Charles City County agreement is the performance monitoring, inspection, review, and reporting (PMIRR) scheme. The scheme specifies frequencies for gathering and reporting information related to the performance of the decentralized wastewater systems. The basic regulatory principle being exercised is that of assuring the public that the impacts on public health and environmental quality from the operation of decentralized wastewater systems are within expected and acceptable limits. The PMIRR scheme needed to be efficient and cost-effective, and at the same time allow the regulatory agency to ensure that the onsite systems continually meet the public health and environmental protection standards established via the performance standards contained in the agreement. In 2004, U.S. EPA Region III awarded a grant explore optimal requirements for performance monitoring by determining the relationship between water quality and process monitoring schemes.

The county public works department employed a 'design-build' approach to selecting the wastewater collection and treatment systems for the project by advertising the performance standards contained in the county's agreement with VDH. The design-build contractor chose wastewater collection systems consist of grinder pumps installed for individual service connections and small-diameter pressure pipes installed within existing rights-of-way to convey raw wastewater to each of two small treatment plants installed near the service areas. The wastewater treatment systems each utilize a sequencing batch reactor followed by a gravel filter and UV disinfection. Effluent is dispersed via drip irrigation systems installed near the treatment sites on land that was either owned by the county or was available at little or no cost. The majority of the installation work was performed by private contractors with the county installing the force main and grinder pump systems at several locations.

Wastewater operators from the county public works department currently operate and maintain the collection systems, the onsite treatment and dispersal systems, and they manage the collection of water quality and process monitoring data from both of the decentralized systems. They visit the decentralized wastewater treatment facility on a routine and as-needed basis to perform system maintenance and repairs. The performance monitoring project grant allowed the county to purchase and install a variety of process monitoring systems at each of the treatment plant. The process monitoring systems

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include probes to measure effluent quality parameters such as pH, Temp., Dissolved Oxygen (DO), Oxidation Redox Potential (ORP), Turbidity, Total Suspended Solids (TSS), Electrical Conductivity (EC), and Nitrate (NO₃-N).

Lessons Learned

The regulatory agencies, state and local health departments, the Department of Environmental Quality, and Charles City County have all gained important lessons during the last two years of working with the decentralized wastewater systems permitted under a performance-based regulatory program. The Memorandum of Agreement between VDH and Charles City County was essential in that it allowed the department to install subsurface effluent disposal systems in areas within the county that were not acceptable under the state regulations for onsite systems. The performance-monitoring requirements of the agreement allowed the county to select, design, and install a decentralized wastewater system with minimal and largely voluntary oversight, with no prescriptive design requirements.

The wastewater collection systems include several grinder pump systems installed at individual homes, valve pits for each connection, and a small diameter force main installed along the road side. While most valve pits and the force main were installed without any major challenges, the installation of the grinder pump systems posed several challenges and yet—lessons were learned from the experience. The grinder pump systems include a fiberglass tank with 900 gallon liquid capacity, one horsepower grinder pump with float switches, and a control panel. At several locations, the tank floated out of the ground after installation due to high groundwater in the service area. The contractor was forced to reinstall the tank and fill it with water immediately after installation, and adjust the float switch to prevent the tank from completely emptying after the pump cycle. The lesson learned—not all homes can be connected to the system at the same time. In addition, when a house is ready for connection, the county must coordinate the process for installing the tank, the pump and controls, and opening of valves so that the wastewater from the house can flow to the treatment plant. Inadequate coordination with the housing-upgrade contractor who was to connect the house to the grinder pump system at one location resulted in unpleasant situation with the homeowner, which the county quickly resolved. As a result, the county has developed a check list to follow for installation of the grinder pumps and for connecting the system to the pressure line.

The wastewater treatment system at one of the project sites continues to offer some challenges. Twice the clarifier tank has floated out of position twice because of a high water table. The treatment process is designed to work as sequencing batch reactor system in which the clarifier tank remains empty after the clarification cycle, while the other tanks in the process are used with adequate amount of liquid to prevent floatation. The county has now decided to install the clarifier at-grade and cover the tank with fill material to prevent floata-

tion and to prevent degradation of fiberglass tank from exposure to ultraviolet light.

The wastewater treatment system at the other project site, posed an interesting challenge several months after a successful installation and start-up period. The treatment plant operators noticed that one of the treatment tanks used as a clarifier and a gravel filter had a leaky baffle, which created problems with the treatment process. The system manufacturer accepted responsibility and added a separate tank for the gravel filter and used the existing tank without the baffle as a clarifier. The lesson learned—adequate inspection during installation and thorough testing of components during the start-up process along with a long-term warranty for parts and labor are necessary to address this type of situation.

In selecting the process monitoring systems for the grant project wastewater operators reviewed literature and information from various manufacturers of process monitoring systems and made recommendations to the project committee regarding system options suitable for the project. The committee discussed the recommendations and made the decisions related to purchasing the process monitoring systems. Two major components of the process monitoring systems are the probes or sensors and the data acquisition system. Manufacturer instructions were followed for installation, but changes had to be made later on based on the recommendations from the field representative. Sensors have to be maintained and calibrated on a routine basis and, so far, it appears that the task of maintaining some of the sensors is more intense than the task of operating the treatment plant. The operator learned that the sensors for monitoring dissolved oxygen in the processing tanks can be used to control the operation of the blowers in the treatment plant and thus reduce the energy cost for running the blowers. The operators are now looking into possibilities of using ORP sensors to control the operation of blowers.

The data acquisition system has offered unique challenges, mainly for downloading the data. The original plans were to use web-based technology to access the data stored onsite; however those plans did not materialize, mainly due to lack of high speed internet access in the area where the treatment plants are installed. During the last two years the operators have downloaded the data from the data acquisition system and stored them in numerous data files, however, preliminary review of the data files indicate that continuous monitoring data on a day-to-day basis within any month of the year are not easily accessible. The result—the data acquisition system displays data very well at the treatment plant, but the system did not meet the team's expectations for downloading the data and storing the data easily into Excel spreadsheet for further analysis.

Conclusions

Overall, the experience with the decentralized wastewater systems in Charles City County is positive and encouraging. The

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Lessons Learned *(continued)*

potential for issues to emerge—such as adverse impact to public health or to environmental quality from the operation of these decentralized wastewater systems appears to be no different compared to the systems that are allowed under the current prescriptive regulations on sites with deep well drained soil. The challenge that still remains is to develop regulatory requirements for performance monitoring and reporting that will allow a responsible management entity, such as a county public works department or a non-government business, to own and operate decentralized systems in a cost-effective and efficient manner. Inline process monitoring is potentially a viable alternative to conventional water quality

sampling and analysis for monitoring performance, in addition to offering improvements in system operation based on real-time information on wastewater quality in the treatment process. However, use of inline process monitoring systems may prove cost-prohibitive for small-scale decentralized systems. Routine inspections by certified wastewater operators, including field measurements and observations, continue to appear an essential part of any management program that seeks to monitor system performance. Adequate operation and maintenance of any decentralized wastewater system is a must to ensure adequate performance. ■



Integrated Water Resource Management in Cities of the Future

The Institutional Importance and Challenges of Decentralized Systems

BY PAUL R. BROWN

As cities experience increases in urban population and residents return to downtown areas, public officials and the communities they serve are looking for creative approaches to improve quality of life, create economic opportunities and provide for vital amenities, like open space for recreation and outdoor activities—all while enhancing and protecting the natural environment.

While this collaboration takes many forms, there are three areas of particular interest:

1. Innovation in traditional engineering—finding opportunities to create multiple community benefits in each project
2. Integration across public infrastructure services—working across institutional barriers to facilitate collaborative approaches
3. Revitalization of urban centers—restoring former industrial sites and waterfronts to improve the urban landscape.

As decentralized infrastructure, low impact development (LID) practices, and increasing demand management gain acceptance in many communities, our reliance on individual citizens to increase their level of engagement and stewardship for distributed, microscale technologies will increase as well. While this shift can reduce resource dependence and the need for large-scale infrastructure, it will redefine the relationships between communities and individuals and the urban utilities, public agencies and institutions that have traditionally provided for their needs.

As we work to incorporate decentralized technologies and other demand management practices into the institutional framework of our cities and counties, we need to be careful to leave room for the innovative, eccentric, and sometimes unsuccessful attempts of individuals and small groups to make positive change. Every new prototype project will not prove to be a best practice. For the professional community of planners, architects, and engineers, taking that kind of risk usually is not acceptable. We have a lot of work ahead of us in dealing with the liability issues associated with innovation in our development practices—particularly if we are striving for wide public acceptance.

As we transition from depending solely on large-scale, “hard” structural solutions to those that restore or mimic natural systems, we must rely on the most dynamic force in the natural landscape—its human inhabitants—to help. Those institutions and utilities that have attempted to meet constituent and rate-payer needs as “invisible” infrastructure will need to reacquaint themselves with the partners needed to function in an “integrated” world.

This presentation will explore the tension that exists between institutions and individuals when working in a participative decision-making and implementation setting, and offer recommendations regarding how communities can bridge the gap—obtaining the best from the small-scale, decentralized approaches while protecting the purposes and missions of established governmental and regulatory agencies and institutions. ■

Paul R. Brown, AICP, is president of Public Services Group, CDM.

BY DENNIS F. HALLAHAN, P.E.

The increasing popularity nationwide of cluster or community onsite septic systems is good news for sustainable development. These community septic systems generally serve multiple residential dwellings or commercial establishments and often use technologically advanced collection and treatment systems, monitoring capability, and engineered infiltration chambers to provide a higher level of treatment. By definition and goal, these systems treat wastewater and return it to the ground in close proximity to where the wastewater was generated as opposed to transporting it long distances to a centralized sewer facility.

The high cost of sewers and lack of availability of quality land nationwide is forcing developers and builders to consider developing sites that may have previously been deemed unusable. Often featuring difficult soils and tough terrain, new onsite wastewater strategies and alternative methods of treatment, are often the only way to make these sites work and to get them approved. In addition to these challenges, the need to satisfy ever-stricter environmental regulations is a major factor in their popularity with local health officials. The same scenario also applies to large recreational and commercial developments in environmentally sensitive areas where a combination of technologies must also be considered.

The Typical System

There really is no typical community/cluster system design due to differing regulations and site constraints. These systems may feature a septic tank at each dwelling or they may be shared by several homes or facilities. This is where the wastewater exiting the building is collected and treatment begins. Effluent is either collected here or transported to a treatment system within the development for further treatment if required. The collection is usually accomplished via small diameter sewer or a septic tank effluent pump (STEP) system to a central chamber drainfield. Here, further treatment occurs from the soil.

Cluster systems may reduce each lot's required footprint area as compared to individual septic tanks and leachfields. This allows builders and developers to cluster the homes together and minimize infrastructure costs from road and utilities. It also allows the developer to plan for a phased-in construction of the wastewater management system. While collection lines must be installed upfront, the onsite components are fixtures that are only necessary when each home is

constructed. Additions to the cluster treatment system can be phased in as homes and/or units are sold.

In many communities, where centralized wastewater treatment facilities are overburdened and the addition of new sewer lines is prohibited, or where individual septic systems are frowned upon, cluster systems are being recommended to developers by local health departments and planning agencies. These officials recognize the need to advocate advanced wastewater treatment systems of a scale that will support and require professional management. Professional management provides more control on the quality of the waste treatment process. If competent management is available, some utilities are even favoring this approach as the most cost effective long-term solution.

Remote and Recreational Settings

Integrating a cluster system into a recreational setting is an ongoing challenge for designers of resorts, camps and outdoor facilities in environmentally sensitive areas, where system management concerns can also be an issue. One successful example is the Brudenell Fairway Chalets, a fully winterized, four-star, cottage rental development located in Roseneath, Prince Edward Island, comprised of 14 country-style chalets situated on a 6-acre property across from two world-class golf courses. The resort development needed a sewage system design that could be installed with minimum site disruption and respond effectively to the higher flows produced by the increasing levels of tourist traffic in the summer months. Low maintenance was one major criteria, since the owners, Marwood Properties, did not want to risk disturbing vacationing guests for maintenance and repairs.

Another key consideration was to find a system design that would be cost efficient to install in a phased plan allowing for future expansion. In this scenario, it was desirable to defer capital costs by phasing sewage treatment and effluent dispersal system capacity until it was actually needed. With a pool, playground, and other recreational amenities planned for the open land on the site, the size of the overall system became another factor in the design and the selection of the component technologies.

The Fairway Chalets wastewater collection and treatment system was designed so that at full build-out, septic tank effluent from 22 chalets and a laundry/office facility could discharge to a four-inch (100 mm) effluent sewer located along the front of the buildings. Because of the system components selected, the horizontal alignment of the effluent sewer main

continued on page 40

Community Septic Systems *(continued)*

did not need to be straight. This allowed changes in direction and routing around the natural contours, trees and environmental features that were important to the overall beauty of the site. Other advantages of this system included ease of installation, reduced excavation costs, shallow burial depth, reduced overall gradient, and reduced infiltration and inflow (I&I) when compared to conventional gravity sewers.

Monitoring and Management

Cluster systems can provide the advantage of enabling home construction in an area that could not be able to support lot-by-lot soil absorption systems, but these systems do require a much higher level of management. At this time, many local governments are not equipped to manage these systems and are looking for management companies that can insure that the proper ongoing maintenance practices are followed. If a cluster system is installed it may be managed by the homeowners association, school board if installed at a school site, or, where available, by a local septic management company. An effective form of management is a contract with an independent wastewater professional. In the future, many communities will require this level of management offering tremendous opportunities for growth to those septic industry professionals willing to expand their knowledge and their business. Contracted management is good news for the homeowner, the environment, and the industry. This issue of proper management of onsite wastewater systems was the greatest

need identified in the Environmental Protection Agency's (EPA) Report to Congress. EPA's recent guidance is to develop management support through local government.

At The Fairway Chalets, the system was designed with several features to facilitate monitoring and maintenance. The pump control panel tracks pump run time and starts and can detect high and low effluent levels and pump failure. A valve monitor also confirms correct sequencing and can provide early warning of unequal distribution among disposal field zones. The leaching chamber trenches have been fitted with maintenance ports for periodic flushing of the pressure distribution laterals and to check the residual pressure at the end of the laterals. If the residual pressure is observed to increase significantly it is an indication that the laterals need to be flushed or cleaned. The Chalet's maintenance foreman or the installing contractor can easily carry out most routine maintenance. The owner reports that the system has been reliable and economical to operate and maintain.

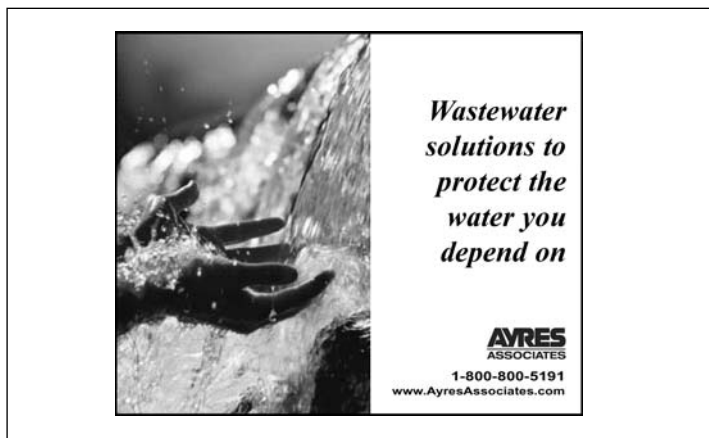
Reducing Development Costs in Remote Areas

Cluster systems are also being installed in conjunction with advanced treatment systems in remote areas that may also have poor soils. These systems extend the ability of the soil to absorb effluent, ensuring the safe return of the effluent into the soil environment. Because of their level of performance and their reduced impact on the soil, chambers are often the technology of choice in cluster system pre-treatment and leachfield designs.

The economies of scale of today's cluster systems combined with the low cost of small diameter sewers brings the cost per unit of the more advanced cluster systems below that of regionalized sewer and very close to that of a common septic system in many cases. This is especially true with the new breed of installation and engineering (design-build) companies arriving on the scene that can "package systems." By standardizing components they can offer a turnkey solution to provide the best possible treatment for that given site.

Conclusion

Cluster systems offer many benefits to the builder, homeowner, regulatory agency and most importantly the environment and are therefore here to stay. When given a true review at the project feasibility stage they can result as the most cost effective option for wastewater service. Due to the simplicity and robust treatment offered by a septic tank, they will continue to be a core unit in these systems. Cluster systems enjoy the economies of scale, and therefore reap the cost benefits. This cluster-system trend will also be a catalyst for the wastewater industry to develop quality low-cost collection systems and other technologies that can be applied in these community systems. ■



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Ottenheimer Named “Sanitarian of the Year” by MEHA

Daniel Ottenheimer, president and founder of Mill River Consulting was recently selected as the “Sanitarian of the Year” by the Massachusetts Environmental Health Association (MEHA). Mr. Ottenheimer was the recipient of the Robert C. Perriello Memorial Award at MEHA’s Educational Conference in Boxborough, Massachusetts on January 10th, 2007. The award was created to honor an individual who has contributed significantly to the improvement of the field of environmental health. This covers topics such as wastewater, drinking water, food safety, and other public health responsibilities. Mr. Ottenheimer has achieved the highest level of licensure in Massachusetts for an environmental health professional – registered sanitarian – and also possesses an equivalent national certificate. MEHA is the state affiliate of the National Environmental Health Association, the leading resource for public and private sector public health professionals.



Mill River Consulting specializes in on-site wastewater design, engineering, surveying, permitting and inspection to municipalities, individuals and landowners. For businesses and municipalities, Mill River also offers strategic planning, mapping, and data base development. ■

Pipe Rules for Fun

1. All pipes are to be made of a long hole surrounded by metal or plastic centered around the hole.
2. All pipes are to be hollow throughout the entire length; do not use holes of different length to the pipe.
3. The ID (Inside Diameter) of all pipes must not exceed the OD (Outside Diameter). Otherwise, the hole will be on the outside.
4. All pipes are to be supplied with nothing in the hole so that water, steam, or other stuff can be put inside at a later date.
5. All pipes are to be of the very best quality, perfectly tubular or pipeular.

Fralo Plastech’s Assets Acquired by Roth Plastics

Fralo Plastech Manufacturing, LLC, an industry leader in onsite waste treatment products and accessories, announced the acquisition of all its assets by Roth Global Plastics, Inc., a 100% subsidiary of Roth Industries North America, Inc. and sister company of Roth Industries, Inc., today. The transition is planned to go very smooth with little to no disruptions.

Roth Industries Inc. is known for its Double-Wall Oil Storage Tanks, Radiant Heating and PEX-c Plumbing Systems. It is a leader in innovation, always focusing on environmentally friendly technologies. Having been in the North American market for over 10 years, Roth invested in a production facility with a blow molder in Watertown, NY in 2006, which uses the same techniques as Fralo. Since 2007 all Double-Wall Oil Storage Tanks are made in the US. Roth Industries, Inc. parent company is headquartered in Germany, and has over 40 years of septic tank experience, making this move in line with Roth overall international strategy.

“This acquisition is in line with the Roth Group’s overall strategic planning of concentrating more toward environmentally friendly and energy saving technologies and products” states Manfred Roth, the owner of the Roth Group. Jochen Drewniok, the CEO of Roth Industries, Inc. and now also of Roth Global Plastics, Inc. adds that Fralo does produce the best septic tanks in the North American market and, since Roth Industries, Inc. use the same advanced technologies producing the Double-Wall Oil Storage Tanks, many sales, distribution and product development synergies surface.

The management of Fralo Plastech Manufacturing, LLC is very excited about the new ownership of the company. “This acquisition brings a strong complement of skilled, knowledgeable, and talented employees with exceptional manufacturing and technology capabilities,” said Joseph Brown, VP of Sales and Marketing for Fralo Plastech Manufacturing, LLC. “The current manufacturing and administrative facilities will remain in Syracuse, NY, as this will be the main headquarters of Roth Global Plastics, Inc.”. In addition, Roth will retain all Fralo sales management and manufacturer reps in the field and will continue business as usual producing tanks and accessories.

Fralo Plastech Manufacturing, LLC, headquartered in Syracuse, NY, is the proud owner-operator of the world’s largest blow-mold machine and is the industry leader in innovative blow-mold technology for the onsite waste treatment industry. Products include polyethylene septic, holding, potable water tanks, risers, and other onsite treatment accessories. FRALO’s process utilizes a patented multi-layer co-extrusion technology offering superior design characteristics, seamless construction, performance, and longevity. ■

Affordable Health Insurance Brings More Value-Added Benefits to NOWRA Members

NOWRA is proud to introduce a partnership with Association Health Programs (NOWRA/AHP) for its members to help reduce the rising cost of health insurance. The following benefits are nationwide. The programs include health insurance, life insurance, long-term care insurance, cancer coverage, accident insurance, disability income, critical illness, dental insurance, vision, and more!

These benefits will allow you to take advantage of better insurance coverage at the lowest possible rates with its new **comprehensive health insurance program** for individuals, families, groups, and businesses. Long-term care and life insurance are being offered with **savings up to 40%** below market rates for NOWRA members and associates. Association Health Programs of Overland Park, Kansas, a nationally well-known company, has been retained to administer the program. Stuart Pase, President, and Certified Senior Advisor, welcomes all NOWRA members to take advantage of these special benefits, protection, underwriting and pricing. Our members will join the clients of Association Health Programs,

which include over 130 associations with up to two million members over the past 17 years.

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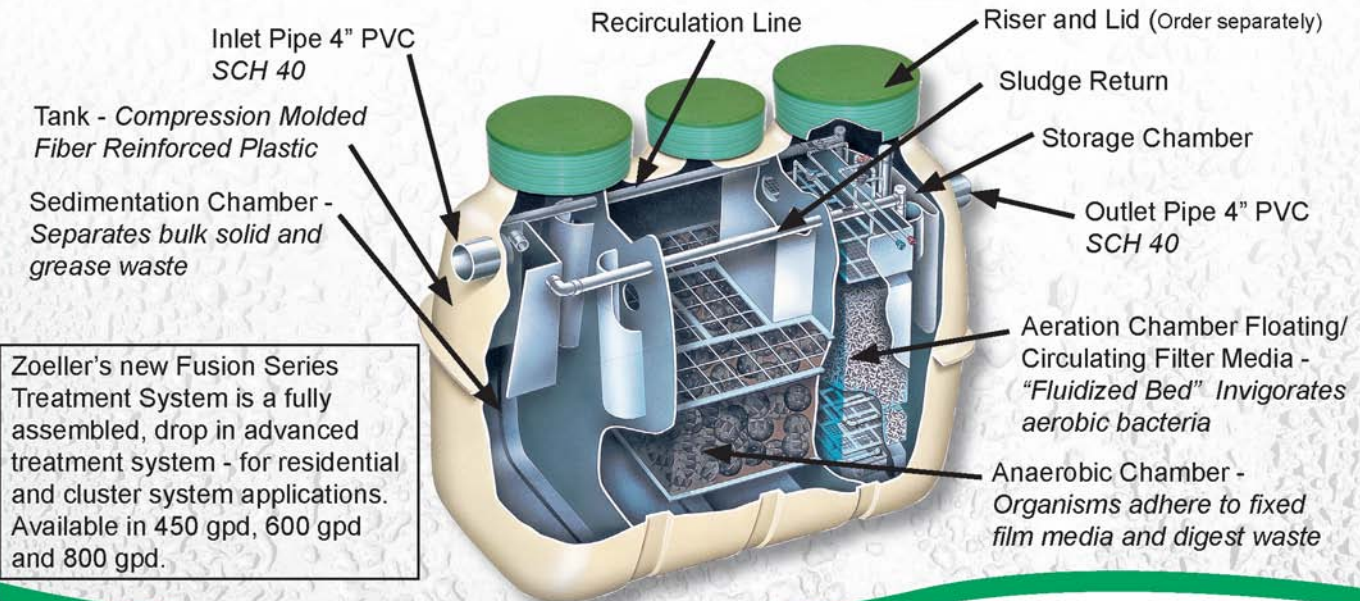
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