



# from Watershed to Well

A publication of RHI, the Northeast Rural Community Assistance Program.

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Spring 2003

## Vermont Drinking Water Week

by Diane Perley and Tom Clark, Water Resources Specialists



For over ten years, Vermonters have been celebrating "Drinking Water Week" with much more than a week of activities. A committee representing twelve agencies and municipalities works for months to obtain sponsors and coordinate events. Well before the official week in May, students in 4th, 5th and 6th grades compete in a poster contest highlighting the water theme of the year. Themes have ranged from "How Water gets to the Tap" in 1996 to "The Water (Re)Cycle" in 2002. This year's theme is "Water: Make it Safe, Keep it Clean."



2001 First Place winning poster by 6th grader Schuyler Shaughnessy entitled "Every Drop Counts"

many schools as possible can participate. This year's show "Alice in Waterland" concentrates

Another annual tradition during Drinking Water Week is a visit by The National Theatre for Children, an educational theater group from Minnesota, to schools across Vermont presenting a water-themed play. Every year RCAP coordinates and schedules these plays so as



The National Theatre for Children

on the importance of water, the water cycle, pollution/treatment, and household conservation. Alice travels down the kitchen drain ending up in waterland. On her travels she meets the most curious of creatures: Wilbur the water bunny, Dr. H<sub>2</sub>Ozzenstein, and, of course, Polly Lutia, the evil queen of muck. A visit by this professional theater troop is an event looked forward to each year by many schools. The educational theater group distributes graded workbooks to teachers to use before and after the show.

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# Director's Notes . . .



*John McCarthy*

technologies and to reach out to the wider constituency of rural volunteers, community leaders, elected officials, and employees. This newsletter edition highlights some of these additional types of technical assistance which are carried out as much as possible in the "self help" tradition. In some instances we at the NeRCAP are national leaders in these areas.

Communities with populations in excess of 3,300 are mandated to complete vulnerability assessments and emergency preparedness planning. What are these assessments? Who conducts them? What makes for a good one (or qualifies it as "insufficient")? Barry Woods, one of our technical assistance providers in Southern New England, is serving on a twenty-person committee developing vulnerability assessment tools for EPA Region 1. He writes about the challenges facing such a committee of "multiple disciplines" and the in-the-field testing being used as this prototype assessment tool rolls out for general use.

Who needs to learn about efficient water system management and what do they need to learn? How do water/waste problems affect other community obligations or aspirations? Building upon a one-on-one approach between the technical assistance providers and members of the community, our field staff work with and support community leaders for as long as it takes to find a workable solution. Sometimes we accompany a community for many years before a water resource problem is resolved. This is one of the hallmarks of our RCAP approach to assisting small communities.

In today's world of integrated planning, board members (often volunteers) at local utilities also benefit from training in workshop formats and by using newly developed tools

**“ W**e are the same, but also different now" one of the assistant program directors commented to me recently. I suppose that's true. As the Northeast Rural Community Assistance Program, we continue our basic commitment to helping rural communities help themselves by assistance techniques honed in the field since 1978. We also are changing with the times to use new

especially developed to help small communities with financial management of community water systems. Tom Essig and Shane Bickel, both water resources specialists in Pennsylvania, write about innovative programs specifically tailored to the needs of the rural communities we serve.

In New England, it is common for one town to have as many as dozens of different public water systems, both public and privately owned, scattered throughout the town. What challenges arise in such environments that argue for specific training in a group setting rather than our traditional over-the-shoulder, one-on-one? Bob Morency, and a number of our New England technical assistance staff, are in the process of a series of board training clinics/workshops specifically geared to meet the management training needs for New Hampshire water systems.

"As the requirements for more qualified certified operators increase and the duties and responsibilities for operators become more complex, the training needs are becoming more crucial" writes Larry Stepenuck, our Regional Manager for Southern New England, in his article entitled "A 'First in the Nation' online Testing Program for Operator Certification." Partnering with an educational organization called Jobs For Youth Networks, and drawing on the resources of primacy and other technical assistance organizations for trainers, the NeRCAP is making a leap forward in trying to solve the problems of insufficient supply of appropriately trained operators. This program is a great opportunity for graduates and students of all ages.

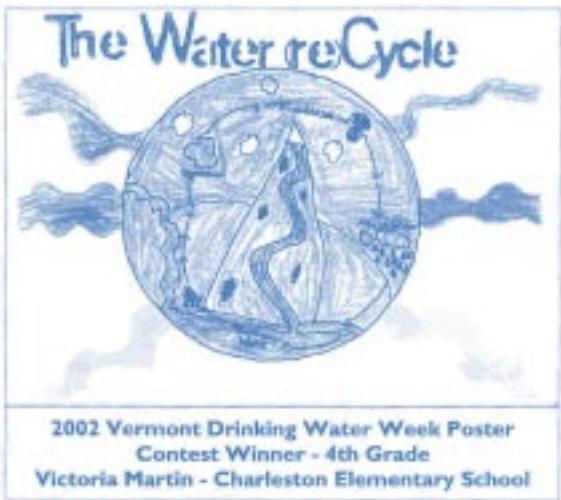
Our lead-off article in this issue shows that what is serious business can also be FUN! Many states in the northeast have special days (or weeks) set aside to bring water issues to the forefront of public awareness. You met "Alice in Waterland" on the front cover and on the next page, you encounter the Max-man, who wants you to recycle to the max! These eye-catching and entertaining events help remind our neighbors of the importance of safe drinking water, and how having or maintaining safe drinking water and wastewater can not be taken for granted.

Are there water fairs in your backyard? If so, I hope you can attend.

*John McCarthy  
Program Director*



## Vermont Drinking Water Week (cont'd from page 1)



booths and eat local treats like maple popcorn. Much of the fun, of course, is getting together with kids from other schools and receiving a goodie bag of water-related items. Winners of

The culmination of Drinking Water Week is the annual Water Fair on the State House lawn in Montpelier, where a group of over 200 4th through 6th graders and their teachers gather to play water-related games, tour the Montpelier Water Treatment Facility, visit various display

the poster contest are recognized and presented with awards by the Governor. The National Theatre for Children performs their show several times for the students who attend the fair in the nearby Pavilion Auditorium.

For drinking water suppliers, the main event at the Water Fair is the water tasting contest. Bragging rights to the "best tasting water" have been so sought after that the contest is now limited to public community water supply systems. Well Drillers and Dowsers display their equipment and skills and actually give the children a chance to try dowsing. Also an educator from Vermont is honored with the Environmental Educator of the Year award. Drinking Water Week gives those in the water business and the school children a chance to have a great time while highlighting the importance of clean and safe drinking water.

## Recycle to the Max!!

notes from Barry Woods, Water Resources Specialist, Southern New England



Northeast RCAP exhibit

**R**CAP is proud to participate in Rhode Island's Earth Day celebration, recently held at the Roger Williams Zoo, April 19th. Many regulatory agencies, non-profit organizations and other environmental and/or special interest groups come together for the day to encourage the general public to engage in Environmental Protection.

Sharon Ostrander, one of our Technical Assistance Providers to Southern New England, had her picture taken with **Max**. Max-man is the mascot for the Rhode Island Resource Recovery Corporation, the state agency dedicated to



Larry Stepenuck, Regional Manager for Southern New England, introduced visitors to the many issues surrounding safe drinking water and responsible waste management.



Sharon Ostrander with Max-man at the Roger Williams Zoo celebrating Rhode Island's Earth Day.

providing the public with environmentally sound programs and facilitating solid waste management.

Max-man encourages all to "Recycle to the Max!!" and to do our part with helping to preserve the earth!

# A “First in the Nation” online Testing Program for Operator Certification

by Larry Stepenuck, Regional Manager, Southern New England



Students (foreground) and faculty (background) are equally engrossed in the subject matter.

REH, the Northeast Rural Community Assistance Program (NeRCAP) field staff, in collaboration with Jobs For Youth [JFY] NetWorks and the Massachusetts Department of Environmental Protection, has started providing training to over thirty students in a “first in the Nation” on-line testing for the Small Public Water System (PWS) Water Operator Certification exam. This unique project was made possible through funding provided by the USEPA Operator Certification Reimbursement Funds being utilized by the Mass Coalition for Small System Assistance (MCSSA). NeRCAP Project Manager, Mr. Barry Woods, is leading a

three month long series of classroom and computer lab training events for students enrolled in a comprehensive Environmental Technology course offered by JFY NetWorks. The focus is primarily on successful completion of the Water Operator Certification exam but Mr. Woods and others from the NeRCAP field staff are also trying to enhance the basic certification curriculum with a multidisciplinary approach to the training.

The class instruction is being delivered by multiple staff from the NeRCAP. There are at least two Water Resource Specialist instructors per class to assure that there will be varied expertise. Among the professionals involved are water and wastewater managers & operators,

resource planners, a geologist, and land-use planners. This staff has tens of years of collective experience in managing and operating water systems, facility development, and technical assistance. There are plans to include a guest NeRCAP staff speaker on microbiology and facility development. The wide range of experience and knowledge available from our staff offers a variety of related subjects to be integrated into the primary operator certification focus. We are using the interactive software, Operator Basics Training Series, developed by Montana University System Water Center, The Indian Health Service, and the US EPA as the core of the inter-active classroom work.

## Team players

Very critical to the success thus far, NeRCAP project manager Mr. Barry Woods has coordinated efforts with the Boston office of the MA Department of Environmental Protection (Ms. Yvette dePeiza, Mr. James Holeva, Mr. Michael Maynard, and Ms. Marie Tennant). Mr. James Holeva, the President of the MA Board of Certification, has been instru-

(continued on next page)



Yvette dePeiza shares experience and technical expertise with JFY students.

# A “First in the Nation” online Testing Program for Operator Certification

(cont'd)

mental in trying to implement the “first in the nation” on-line certification exam, which will be taken by the students in July, 03. Although these coordination efforts have taken some time to develop, the courses are now underway and the results are very promising. The students are very motivated and all support groups are working in concert to offer as much help as possible.

## The challenge

**A**s the requirements for more qualified certified operators increase and the duties and responsibilities for operators become more complex, the training needs are becoming more crucial. NeRCAP is attempting to help meet these needs through the course instruction and supplemental work. Mr. Woods has lined up a few guest instructors and field trips as well as

numerous detailed hand-out documents to further enhance the training. This is to offer the needed contact network and support for the students during and after the sessions.

Some of the students are very highly educated in a number of water system-related fields and the interest for future employment goes beyond very small system operations. Even with these varied desires we feel that the practical

*Other contributors to this effort include the MCSSA, which is comprised of the New England Water Works Association (NEWWA): Mr. Ray Raposa, Executive Director & Mr. Jeff Fencil, Project Manager; The Mass Water Works Association, (MWWA): Ms Carol Harris, Executive Director; Northeast Rural Water Association (NERWA): Mr. Michael Wood-Lewis, Executive Director & Mr. John Lukin, Project Manager; and RHI/The Northeast Rural Community Assistance Program (NeRCAP): Ms. Karen Koller, President and CEO & John McCarthy, Program Manager. The JFY NetWorks, is overseen by Mr. Gary Kaplan, Executive Director and Project Manager, Mr. Derek Kalchbrenner.*

base of having an entry level certification will help all students in their individual endeavors. The other sections of the Environmental Technology training offered by the JFY NetWorks



Project Manager Derek Kalchbrenner (right) meets with the RCAP team before the first class.

program lend themselves to a comprehensive education for these potential water resources industry personnel. Math, chemistry, and business planning all have direct relevance to their broader educational needs.

The NeRCAP staff and administration are very proud of our collective work thus far and look forward to future collaboration and support in these efforts. We also have to thank the NeRCAP office support staff in Winchendon (Ms. Deb Simoneau & Ms. Ann-Marie Hatch) for the great deal of effort provided in our concentrated time schedule.

NeRCAP is exploring possibilities for assistance to the students through scholarships for the exam expenses. There is also a possibility for a reduction in exam costs due to having the exam offered on-line. This work is being coordinated by Mr. James Holeva from Boston DEP.

If you have any questions concerning the over-all efforts related to the pilot program, please contact the main NeRCAP office at 1-800-488-1969, Mr. John McCarthy Director of the water, wastewater, and solid waste programs or Mr. Barry Woods, Project Manager, at 1-508-224-8486.

*Photographs taken by Barry Woods*

# *Fifth CECIA-IAU Biennial Symposium on Potable Water Issues in Puerto Rico:*

## *Technology and Regulation*

by Josefa Torres, Water Resources Specialist, Puerto Rico



Drs. Timothy Straub, Paul Hunter  
and Graciela Ramírez Toro visiting a system.

**O**n April 10 & 11, 2003, the Center for Environmental Education, Conservation and Research (CECIA) of the Inter American University of Puerto Rico celebrated their fifth annual potable water symposium in San Juan, Puerto Rico. RHI, The Northeast RCAP participated as a collaborator and provided two guest speakers from New England. These were Mr. Barry Woods and Mr. Larry Stepenuck, who work with small rural low-income communities in Southern New England.

Mrs. Josefa Torres, who provides technical assistance to rural Puerto Rican communities about their water

problems, gave a Welcome Salute to the entire audience on behalf of RHI/NeRCAP. She also introduced the forum's "Small Potable Water System" speakers. Another RHI/NeRCAP colleague in Puerto Rico, Harvey Minnigh, introduced the session's "Health Issues" and "Technical Developments: Microbial Contaminants" speakers.

The Symposium covered a complete gamut of topics such as: Source Water Protection Issues; Technical Assistance to Small Potable Water Systems; SDWA Policy Issues; Emerging Contaminants; Public Health Issues; Technical Advancements; Emerging Microbial Contaminants Testing and Regulatory Perspectives.

Through Mr. Wood's and Mr. Stepenuck's presentations about "Capacity Development Strategies for Small Communities" and "Dealing with Capacity and Financial Limitations and Source Water Protection Issues in Small Systems," the speakers demonstrated RHI



Registration for the second day, April 11, 2003.

NeRCAP's dedication to providing assistance to rural communities on a wide range of environmental issues. The Symposium included other cutting edge presentations by speakers from US EPA (both OGWDW and the Caribbean Environmental Protection Division); the Battelle Memorial Institute; the University of East Anglia, UK; DynCorp I & ET and PRASA. Through these varied topics, over two hundred participants received a unique blend of very current information, reference tools and points of contact.

RHI/NeRCAP staffs were honored to participate in this very successful Symposium and we thank Dr. Graciela Ramirez, the Director for CECIA for the opportunity to be part of the program. A listing of the presentations follows.

### ***Source Water Protection Issues***

- Integration of the Clean Water Act and the Safe Drinking Water Act: EPA National Perspective *Joan Harrigan-Farrelly, EPA OGWDW*
- Introduction to EPA Source Water Protection Program *Eng. Jorge Martinez, CEPD*
- PRASA Source Water Protection Strategies *Mr. Ferdinand Quiñones, PRASA*

Photographs taken by Harvey Minnigh

# *Fifth CECIA-IAU & RHI-RCAP Biennial Symposium on Potable Water Issues (cont'd)*



Visiting another system; Dr. Paul Hunter & Mr. Ephraim King with Sr. Justiniano de Jesús, Sr. Luís Flecha and one other unidentified member of the community.

## *Policy Issues*

- Pollution Prevention and Other Environmental Policies: Relationship with Source Water Protection: *Joan Harrigan-Farrelly, EPA OGWDW*
- U.S. EPA's Role in Water Infrastructure Security: *Grace Robiou, US EPA OGWDW*

## *Emerging Contaminants, Policy and Technical Developments*

- The Candidate Contaminant List (CCL) Process as a Tool for Identifying Emerging Contaminants and Technical Development Needs: *Ephraim King, US EPA OGWDW*
- The Role of Drinking Water Producers in Identification of Emerging Contaminants and the Information Collection Rule: Lessons Learned: *Dr. Timothy M. Straub, Battelle Memorial Institute, Pacific Northwest.*
- Emerging Chemical Contaminants, The Unregulated Contaminant Monitoring Rule (UCMR): National Occurrence Survey and Preliminary Results: *Eng. Eric M. Bissonette, US EPA, Technical Support Center, Cincinnati, OH*

## *Small Potable Water Systems*

- Small Potable Water Systems and Source Water Protection: EPA's Perspective: *Mike Osinski, EPA OGWDW*
- Capacity Development Strategies For Small Systems: *Barry Woods, RHI/RCAP*
- Dealing with Capacity and Financial Limitations and Source Water Protection Issues in Small Systems: *Larry Stepenuck, RHI/RCAP*



At the Mercado de Santurce, (left to right) Mrs. Josefa Torres, Ms. Glorical Negrón, Mr. Jorge Martínez, Ms. Grace Robiou, Mr. Eric Bissonnette, Mr. Larry Stepenuck, Mr. Barry Woods, Drs. Timothy and Tammy Straub and Dr. Paul Hunter.

## *Health Issues*

- Detecting the Impact of Drinking Water on Sporadic Disease: *Dr. Paul Hunter, Professor of Health Protection, University of East Anglia, United Kingdom*

## *Technical Developments: Microbial Contaminants*

- Standardizing and Validating Research Techniques for Pathogen Monitoring in Water: *Kevin Connell, DynCorp /CSC Biology Studies Group*
- Using DNA Microarrays to Detect Multiple Pathogen Threats in Water: *Dr. Timothy M. Straub, Battelle Memorial Institute, Pacific Northwest.*

## *General Perspectives*

- Potable Water, Regulation and Research in Puerto Rico: PRASA Perspective: *Eng. Roberto Maldonado, PRASA*
- Water Resources in Latin America and the Caribbean: Current Situation and Future Perspective: *Eng. Carl-Axel Soderberg, Director, CEPD*

For more detailed information or any transcripts/copy of the above presentation material, you can contact Josefa Torres at [jtorres@rhircap.org](mailto:jtorres@rhircap.org), Harvey Minnigh at [hminnigh@compuserve.com](mailto:hminnigh@compuserve.com) or Dr. Graciela Ramírez at [cecia@prtc.net](mailto:cecia@prtc.net).

# *Board Education for Water and Sewer Utilities*

by Robert E. Morency, Ph.D., Water Resources Specialist, NH



The backbone of our system of locally owned water and sewer utilities is the volunteer Board. This governing system ensures that at least two or more people will make decisions about how the utility will serve the public. This is, of course, fundamental to the American ideal of bringing a cooperative spirit to the common welfare. In the Northeast RCAP's experience, these boards are often made up of a revolving (in the sense of coming-and-going) assembly of people of varying backgrounds. While this brings fresh perspectives to problem solving and decision making, often times misconceptions about the role and responsibilities of the Board can be passed along from longer-tenured members to newer ones.

Because boards are volunteer and local, there has not been any movement to require Board members to become certified, as is the case with operators. Nor has there been any organization of Drinking Water Boards, although most states have Water Works Associations, with varying levels of outreach to boards of small systems. RCAP has drawn upon the Operator Certification Program to offer incentives, in the form of Continuing Education Credits (C.E.U.'s), to increase attendance at workshops and to encourage Certified Operators to attend.

## *Education helps*

The purpose of *board education* is not necessarily to standardize the management of all public water systems, but rather to give Board members resources that will lead to a generalized understanding of principles from



A board training workshop in Derry, NH, March 2003.



Diane Perley, Water Resources Specialist in VT and NH, speaks to volunteers and staff.

which to draw. For this reason, we call the workshops "education", rather than training (which deals with actions to be taken for specific situations). Board members often have to draw on experiences gained from other aspects of life, such as business. Taking advantage of and bringing attention to the wealth of expertise within a given community is a unique benefit of gathering people in a local setting to discuss a common interest. We also hope to open dialogues among the various entities, including the primacy agencies and technical assistance agencies, such as RCAP, that have a stake in well-managed systems.

Sharing expertise and developing networks among people in communities is a major goal of the program and, to this end, workshops are offered to local water systems in local settings. In New Hampshire and Massachusetts, there is a high density of small community water systems, and it is not uncommon to find towns that may have up to 20 distinct community public drinking water systems. We have observed in nearly every workshop that attendees include experienced board members, who attend partly because they have been involved in drinking water issues and thus have been in the culture for some time. Other attendees have come from new systems, or are new commission members, who are conscientious enough to understand the importance of drinking water and seek more information on the topic.

## **Board Education for Water and Sewer Utilities**

*(cont'd)*

### **Reaching out to the tough cases**

**A**nother source of potential participants is at the ranks of troubled systems—ones that have for a variety of reasons been out of compliance for months or, in some cases, years. Primacy agencies may choose to either require attendance as part of the settlement of an administrative order or to set a level of capacity below which system owners would be invited to attend on a voluntary basis. The concept of the volunteer is important here, and in setting “requirements” for attendance, agencies should be aware of the need to respect the work that is freely given, and the dedication of those who give their time.



*Active discussion at the workshop.*

A workshop consists of brief presentations by RCAP technical assistance providers on subjects that are often encountered by Boards. The subjects covered in a workshop include: Owner Responsibilities under the Safe Drinking Water Act; Wellhead/Watershed Protection; System Management; Financial Management and Tools; and Funding Options for System Rehabilitation and Expansion. The sessions are designed to be interactive, and all participants are urged to contribute to discussions. Usually a

workshop will be held just after dinner-time (6 P.M.). Choices of venues are based on the target audience. We have found, through several trial sessions, that there is a larger success rate for bringing in board members by market-



*Bob Morency and John McCarthy from RCAP swap ideas with Chip Mackey, NH DES.*



ing the event to a local audience—a single town and immediately adjacent towns, for instance—as opposed to a larger region, such as a county or a geographical region of a state. Again, the volunteer nature of the target audience is the key to an understanding of the balance between the needs of the water systems and the willingness and abilities of busy volunteers to travel to a workshop. What we are learning is that we, as technical assistance providers, have to show a commitment and willingness to bring the information to the communities, rather than expect them to go the extra mile (many miles, in some cases) themselves.

Board education is an evolving process, and we are learning what the best ways are to assist the participants to understand that increasing knowledge will ultimately benefit their customers and make their tenure as board members more rewarding.



*Photographs from RCAP training in Derry, NH, March 2003 taken by Linda Dellasantana*

# ***SRF Training Module Development in Pennsylvania***

by Shane Bickel, Water Resources Specialist

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*New tools  
to enhance small  
community  
water board  
capacity  
are coming off  
the drawing boards  
into the  
planning arena.*

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The RCAP staff in Pennsylvania, under an SRF grant from the Pennsylvania Department of Environmental Protection (PADEP), is in the process of developing training modules intended to educate board members and other small water system personnel. These modules will cover a variety of areas of concern to water system personnel, such as: Water Supply System Basic Operations; Responsibilities of Governing Bodies; Management Practices and the Safe Drinking Water Act (SDWA); Relations with Regulatory Agencies, Assistance Providers, and Hired Consultants; Bookkeeping and Accounting Basics; Business Planning; Costs and Budgeting; Rate Design Overview; Bidding, Leasing, and Purchasing; and Project Management.

## *New training tools*

A considerable amount of effort goes into the development of each training module. One staff member will review available information and develop the content for each Instructor Guide. The information reviewed includes fact sheets, existing training modules, and other information from sources that include the National Environmental Training Center for Small Communities (NETCSC), RCAP, PADEP, other state primacy agencies, The University System of Maryland's Environmental Finance Center, and other sources. The RCAP staff member follows a "best of breed" approach and culls the best available content from these sources and from their own personal experience to develop content that fits the requirements and objectives of PADEP.

Following the "best of breed" content development, the RCAP staff member fits the content into a training module paradigm pre-

furred by PADEP. This paradigm includes providing the participant with all the information covered in the training module, thus eliminating the need for note taking and allowing the participants to pay closer attention during the training session. Each module consists of three sections: an Instructor Guide, a Participant Workbook, and a set of PowerPoint® slides. The Instructor Guide is comprehensive, and the slides and workbook are derived from it. A number of group and individual exercises are included in the training module to foster participation. For example, the Rate Setting training module includes two group exercises where participants from groups determine the rate structure for a given community based on the expenses and other factors provided. A ten question "quiz" serves as an individual exercise at the end of the module to reinforce and summarize the key points of the module (*see box at end of article*). This is all included in the Instructor guide, which is developed first.

## *Team consults build on the new paradigm*

When the individual RCAP staffer completes the first draft of the Instructor Guide, a committee composed of three staff members convenes to review the content and format to ensure consistency with PADEP requirements and objectives. After adjustments are made, the Instructor Guide is used to prepare the Participant Workbook and PowerPoint® slides. The workbook includes all of the appropriate content of the Instructor Guide except for some specific instructor tips and the answers for the exercises, which are provided in a separate section at the end of the workbook. The slides are bulleted, key items that serve only to

## **SRF Training Module Development in Pennsylvania (cont'd)**

*This paradigm includes providing the participant with all the information covered in the training module, thus eliminating the need for note taking and allowing the participants to pay closer attention during the training session.*

facilitate the training and discussion included in the Instructor Guide and Participant Workbook. They are light on content, since all content is included in the workbook for the participants.

When all three sections are completed, the training modules are forwarded to PADEP for review and approval. At this point additional adjustments are made to the content and format. Following this review, the training modules will be tested prior to formal use.

The modules will be field tested in conjunction with PADEP and Pennsylvania State University.

The Pennsylvania training modules for board education are a good example of RCAP's continuing commitment to excellence in preparing local leaders for the challenges of small water system management. For more information on this board training initiative and its potential applicability elsewhere, please contact the author at [sbickel@rhircap.org](mailto:sbickel@rhircap.org).



### **Rate Setting Quiz for Small Water Systems**

1. What are the two main types of rate structures used by small water systems?
  - Flat rate
  - Base rate plus usage charge
2. When is a flat rate generally used?
  - When the system has no meters
3. The base rate plus usage charge divides expenses into two categories. What are they?
  - Fixed
  - Variable
4. Besides the two expense categories and number of users, what other information is needed to determine the base rate plus usage charge?
  - The number of gallons the system billed for in the last year
5. What is a major assumption of these two rate structures with regards to rate classes?
  - That all users are the same
6. Is it a good practice to provide free or discounted water to certain customers?
  - No
7. Is it likely that a water system will have to enact a user rate increase at some point in the future?
  - Yes
8. What are the two ways to get a system back on budget?
  - Reduce costs
  - Increase revenues
9. What is the most important way to build user support for a rate increase?
  - Public education
10. Can visual aids assist with the public education process?
  - Yes

# **Board Training for Small Water System Security**

**A Cooperative Program with the Penn State University Environmental Training Center and the Northeast Rural Community Assistance Program**

by Thomas W. Essig, Jr., RCAP Water Resources Specialist, PA



*Ms. Alison Shuler, PSU Training Center Manager and WRS Tom Essig review some of the facilities' hands-on process control training equipment.*

The Pennsylvania region of the Northeast Rural Community Assistance Program (RCAP) has entered into a unique partnership with the Penn State University Environmental Training Center (PSU) to provide board training programs for small water systems throughout the EPA Region III area of Maryland, Delaware, Pennsylvania, Virginia and West Virginia. Located in Harrisburg, PA, and operating in conjunction with the En-

vironmental Training Center, the US EPA Small Public Water System Technical Assistance Center provides a variety of training opportunities for operators, municipal officials, engineers and technical assistance providers. As an accredited environmental education and research facility, the center offers training programs including technology demonstrations, hands-on process control training, laboratory workshops and traditional classroom training. PSU and the Pennsylvania Department of Environmental Protection participated in the construction of this state-of-the-art facility, which offers classrooms, pilot labs and distance learning facilities. The Northeast RCAP's Regional Manager for Pennsylvania, Don Schwartz, participated as a panelist in a satellite-based presentation on utility rate setting that was broadcast statewide from a local television station to Penn State branch campuses such as this.

## **Penn State's Environmental Training Center**

The center's main emphasis is on training public water supply operators. The 1996 Amendments to the Safe Water Drinking Act (SDWA) focus attention on improving the technical, financial, and managerial skills of water systems to comply with national drinking water regulations. This is known as capac-

ity enhancement. The SDWA Amendments authorize the Environmental Protection Agency to make grants to institutions of higher learning to establish and operate small public water system technology centers. Responsibilities of these centers include conducting training for water system operators and the trainers that instruct them, as well as serving as the source of technical information related to the performance and operational needs of small public water systems. By attending these training programs, operators can obtain continued education credits to comply with the licensing requirements of state mandated certification requirements. The Northeast RCAP has scheduled their summer conference at the PSU, so that the Northeast region's 28 technical assistance providers can benefit from the center's diverse training programs to better serve rural communities.

The objectives of the center are as follows:

- Provide cutting-edge training for persons involved in the instruction and training of small water system operators.
- Provide operators with direct training in areas of computer skills, hands-on laboratory training, corrosion control, and disinfection.
- Upgrade knowledge of managers of systems in financial management.

## ***Collaboration brings synergy and a user-friendly program***

RCAP and PSU have entered into a training program targeting water system board members to inform them of techniques to protect their facilities and provide on-going water service in the event of unexpected situations. The presentation includes a PowerPoint® presentation and handouts detailing a vulnerability assessment, an emergency response plan and the emergency management plan, as well

## **Board Training for Small Water System Security**

**(cont'd)**

as providing reference sources to seek additional information for water system security. [See also the article by Barry Woods "Vulnerability Assessments," which follows.] The vulnerability assessment is a system-wide review that determines the areas that are susceptible to failure, either by intentional acts or natural hazards. The emergency response plan is a rational response to these vulnerabilities seeking to detect, deter and respond to any situation that may arise while providing continuous water service to customers and high priority businesses. Emergency response plans are not new and have been required of water systems in the past, but dealt mostly with natural disasters. The emergency management plan is more broad-based by detailing how to handle and respond to an emergency as well as mitigation efforts to prevent future problems from happening. PSU center coordinator Alison Shuler states "It is important that board members be informed of their responsibilities to protect their systems through the field training provided by RCAP".

The small water system security program will be presented to "two pilot boards", then reviewed, before being given to a total of 10 water systems under the terms of the PSU grant. It is anticipated that the final product will be available for technical assistance providers throughout the RCAP network to help their communities comply with security planning issues. Dr. Charles Cole, Training Center Director, says "The environmental training center looks forward to cooperating with RCAP on joint projects for field presentations on system security for both water and wastewater operations and spreading the word of the PSU's training opportunities".

*For more information about the Penn State Environmental Training Center:*

*Contact Ms. Sue Hippel at 717-948-6388, or [www.hbg.psu.edu/etc](http://www.hbg.psu.edu/etc)*

*To learn more about the board training program:*

*Contact Mr. Thomas Essig at 717-705-4157*



### **"The Cyber Corner" Online Resources for Rural America**

*This occasional bulletin appearing in From Watershed to Well highlights some of the more valuable Internet tools and resources we have found that deal with issues of importance to rural communities and "community development" in the broadest sense. The websites listed and described here have been utilized and thoroughly validated by our professional field staff as accurate and authoritative sources of information.*

#### **<http://www.drs.wisc.edu/vision/>**

*Building Our Future: A Guide to Community Visioning. Communities are faced with a number of immediate concerns, such as requests for rezoning, demands for affordable housing, or the loss of a major employer. Unfortunately, these decisions are frequently made without a broad vision of what residents want their community to look like in the future. This manual provides community residents with a process for thinking about and planning for their mutual future.*

#### **<http://www.findlaw.com/>**

*This online search engine and comprehensive resource guide is a remarkably useful and easy-to-use tool for finding specific laws and legal resources relating to community development—or just about any other endeavor!*

#### **<http://www.plannersweb.com/>**

*City and regional planning resources from the Planning Commissioners Journal. A very good resource base here for community planning—some items available at nominal cost.*

#### **<http://www.cfda.gov/>**

*If you came to this site looking for information on Federal grants, you have come to the right place. This site deals with all types of assistance,*

*not just financial aid. This web site gives you access to a database of all Federal programs available to State and local governments (including the District of Columbia); federally-recognized Indian tribal governments; Territories (and possessions) of the United States; domestic public, quasi-public, and private profit and nonprofit organizations and institutions; specialized groups; and individuals. You can search this database to find assistance programs meeting your requirements and for which you are eligible. You can then contact the office that administers the program and find out how to apply.*

#### **<http://factfinder.census.gov/servlet/BasicFactsServlet>**

*"American FactFinder" is an official website of the U.S. Census Bureau. The name speaks for itself!*

#### **<http://censtats.census.gov/pub/Profiles.shtml>**

*Use this Census Bureau search engine to get the Census 2000 data profile for your town or village. The data profiles available here cover general demographics, plus social, economic, and housing data sets for any municipal unit.*

# Vulnerability Assessments

## A Northeast Methodology

by Barry W. Woods, Water Resources Specialist, Southern New England

*This technical assistance provider had the privilege to participate on the Safety and Security Committee, comprised of Regional EPA and Primacy leaders, engineering and security consultants, utility representatives and others.*



Protecting the water infrastructure is one of the major goals identified in the EPA's "Strategic Plan for Homeland Security". New England's Region 1 provided funding to the New England Water Works Association (NEWWA) for the development of a user-friendly process to effectively conduct a Vulnerability Assessment (VA) that would assist Community Water Systems (CWS) in complying with the new Federal Requirements.

### Developing a prototype VA tool

In response to this task, NEWWA in the spring of 2002 formed a Safety and Security Committee to begin the long process of developing an acceptable format that would serve to be the building blocks for the creation of a new mechanism for conducting VA's. This technical assistance provider had the privilege to participate on the Safety and Security Committee, comprised of Regional EPA and Primacy leaders, engineering and security consultants, utility representatives and others.

Early on, the Committee determined that the specific requirements of the new Public Law could best be served using the elements of a Sanitary Survey as the basis for developing a process that could be easily understood yet identify

the strengths and weakness of the utility infrastructure.

The Committee met frequently as a group. For approximately 9 months it also reviewed multiple forms of information, shared electroni-



cally. Consensus on some issues came after much effort, but having multiple disciplines involved served an important role in the development of this tool. From the outset it was intended as a performance-based check-off list/survey to identify critical assets while also evaluating risks to the system and determining the effectiveness of existing and planned measures to contend with potential adversarial actions.

It is required that a VA include but not be limited to a review of the following:

- Pipes and constructed conveyances
- Physical barriers
- Water collection, pre- and post-treatment, storage and distribution facilities
- Computer, electronics or other automated systems utilized by the PWS
- Use, storage, or handling of various chemicals
- Operation and maintenance policies and procedures

### Key components in an effective vulnerability assessment

Remember, the VA should generally address the following six basic elements:

- Mission, objective and characterization of the water system
- Identification and prioritization of adverse consequences

(continued on next page)

## **Vulnerability Assessments** *(cont'd)*

*In general terms,  
my evaluation of  
the process was  
pretty high.*

- Determination of critical assets that might be subject to malevolent acts
- Assessment of the likelihood of such acts from adversaries
- Evaluation of existing countermeasures
- Analysis of current risk and development of a prioritized plan for risk reduction.

### **Next steps**

**U**pon final completion of a draft VA document, it was now the responsibility of several committee members to actually conduct an independent VA based on the complexities of the XYZ ground or surface Community Water system. This TAP had selected a ground water system for an assessment. Upon completion of the task, a review was held with EPA Region 1 representatives where I had the opportunity to express my personal views as to the complexity, effectiveness, and usefulness of the assessment. In general terms, my evaluation of the process was pretty high; any concerns would be addressed in the final product.

The next step for the Committee was to work with the consultant who would be responsible to take all of the existing data, plus some additional components, and develop user-friendly software that would encompass all of the effort and development to date.

What should seem like a simple process is not necessarily so. The Committee and consultant worked diligently together to build an electronic assessment that would assist CWSs in performing the required VA to the best of their abilities. During the development and review process, a number of issues resulted in a long debugging process. This should minimize glitches that are normally encountered when working with newly developed software. A number of live beta tests were performed over a 4 month period and now the final product is about to be released.



Although a number of VA tools exist, this Committee is excited about the development of this New England format and is now deliberating on a name. We prefer not to call it a tool, as other versions now available do. A release of the final product is expected late this spring, 2003, either in the format of a CD or the potential ability to download. The process is computer-generated and can not be easily performed by producing a hard copy from which to conduct a VA. However, a final printable VA report for submission to EPA can be generated. It is expected that NEWWA will provide regional training for this product in the upcoming months.

It is an honor to be a part of the Committee and I would like to thank EPA Region 1 representatives, J. Kevin Reilly and Mark Sceery, and Jeff Fencil of the NEWWA, for all of their time and effort in helping to develop this new VA format.

If you desire any additional information regarding the VA document or need advice with safety and security issues, please call our Central Office for assistance.

It is expected that the Committee will now move forward and consider developing guidelines for preparing effective "Emergency Response Plans". Watch future issues of this publication for tips related to developing and updating Emergency Response Plans (ERP's). 

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