NETCSC’s training Institute a huge success

A huge success. This is the only way to describe the outcome of the first-ever Environmental Training Institute for Small Communities, a comprehensive training event for local officials and assistance providers sponsored by the National Environmental Training Center for Small Communities (NETCSC). The event was held July 31 to August 5 in Morgantown, West Virginia.

More than one hundred registrants from 21 states—including Arkansas, California, Delaware, Idaho, Minnesota, Mississippi, North Carolina, Oklahoma, Tennessee, Wisconsin, and Wyoming—gathered to participate in NETCSC’s drinking water, wastewater, solid waste, and distance learning sessions taught by nationally recognized experts.

“We are pleased that our first offering of all of NETCSC’s courses in the same venue was so well received,” says Richard Phalunas, Ed.D., NETCSC director. “It was clear that attendees made the most of their time at the Institute. Not only did they participate in the courses, but they formed alliances with one another and learned about many helpful resources that they will take back to their jobs.”

The Institute featured the pilot offering of NETCSC’s new course, “Managing a Small Drinking Water System: A Short Course for Local Officials;” the first offering of the recently updated curriculum, “Solid Waste Management Options for Local Officials;” NETCSC’s popular course, “Assessing Wastewater Options for Small Communities: A Course for Local Decision-makers;” and the new half-day course, “Training Adults in Remote Classrooms: Demystifying Distance Delivery.” The Institute also offered train-the-trainer sessions for both the drinking water and wastewater courses.

Participants included elected and appointed officials, state and local public health professionals, Cooperative Extension agents, Rural Community Assistance Program and National Rural Water Association personnel, public service district employees, members of local and regional economic development organizations, state department staff, private trainers, professional consultants, and representatives of concerned citizen groups.

In addition to attending NETCSC courses, registrants participated in field trips; visited NETCSC’s resource room and exhibit area; enjoyed a reception, a barbecue, and two luncheons with presentations by national experts; and networked with fellow participants and trainers.

Plans are underway for the second annual Environmental Training Institute for Small Communities. Dates and details will be announced in future issues of E-train.
NOWRA to hold annual conference in Michigan

Grand Rapids, Michigan, will be the site of the National Onsite Wastewater Recycling Association’s (NOWRA) Ninth Annual Conference and Exposition. “ONSITE—The Future of Water Quality” is the theme of the event, which will be held October 31 to November 4.

This year’s program features more than 50 speakers, roundtable discussions, field trips, and a technical exposition. A new series of practical workshops will include Community Management Forum, Model Performance Standards Code Forum, and a comprehensive two-day educational session—“Basics of Onsite Wastewater Treatment: A to Z.”

For more information about the conference, call (800) 966-2942 or (301) 776-7468, fax (301) 776-7409, or visit NOWRA’s Web site at www.nowra.org.

Groundwater Foundation fall conference to focus on environmental education

“ Asking the Right Questions: Evaluating the Impact of Groundwater Education” is the theme of the 2000 Groundwater Foundation Fall Conference and Groundwater Guardian Designation set for November 13 to 15 in Nebraska City, Nebraska.

The conference program will focus on the following evaluation trends:

- assessing behavioral and environmental impacts as well as program implementation;
- building evaluation techniques directly into program design;
- applying social marketing strategies to environmental education; and
- meeting specific educational goals, such as environmental literacy, through testing and focus groups.

The conference also will feature a youth summit on environmental health and the designation of Groundwater Guardian communities, affiliates, and national partners.

For more information about the conference, call (800) 858-4844, fax (402) 434-2742, e-mail info@groundwater.org, or visit the Groundwater Foundation’s Web site at www.groundwater.org.

Pipeline issue discusses alternative toilets

Homeowners, local officials, and others who want to learn about alternative toilets will appreciate the latest issue of Pipeline.

Published by the National Small Flows Clearinghouse (NSFC), Pipeline is written for the general public and explains a wastewater technology or topic of interest to local officials and community residents. Articles are presented in an easy-to-read style, and each issue includes a list of contacts and resources.

Alternative toilets are the focus of the Summer 2000 issue of Pipeline (Item #SFPLNL22), which describes various alternative toilets that can be used in homes and public restroom facilities. The newsletter discusses operation and maintenance, plus advantages and disadvantages of each. This issue also includes two case studies that show how alternative toilet systems helped to resolve wastewater disposal problems.

Pipeline also may be downloaded from the NSFC’s Web site located at www.nsfc.wvu.edu. To order a particular Pipeline issue or request a free subscription, call the NSFC at (800) 624-8301 or (304) 293-4191. Back issues of Pipeline cost 20 cents each, plus shipping and handling charges.

International solid waste conference set


Sponsored by the Journal of Solid Waste Technology and Management, Widener University, and the University of Pennsylvania, the conference is for researchers, educators, government officials, consultants, managers, and community leaders with an interest in solid waste. Participants are expected from more than 30 countries.

For more information about the conference, call (610) 499-4042, fax (610) 499-4059, e-mail solid.waste@widener.edu, or visit the conference Web site located at www.widener.edu/solid.waste.
New CD-ROM outlines financing tools for small systems

A new CD-ROM provides a comprehensive look at financing tools for small drinking water and wastewater systems. A Guidebook of Financial Tools: Paying for Sustainable Environmental Systems is available from the U.S. Environmental Protection Agency (EPA) Region 10 Environmental Finance Center (EFC) at Boise State University in Idaho.

“The CD is much like an encyclopedia of environmental finance,” says Bill Jarocki, Region 10 EFC director. “It provides a one- or two-page description of financing mechanisms for environmental infrastructure and covers topics such as bonds, nonpoint source pollution, land purchasing, capitalization, and public-private partnerships, to name just a few.”

The guidebook has been issued as a paper document and in floppy disk format in the past, says Jarocki, and hard copies are still available for those people who do not have access to a computer. The guidebook is also available on the Web through Region 10 EFC’s site located at http://sspa.boisestate.edu/efc.

“The searchable and cross-referenced CD-ROM and Web versions are far superior to the hard copy,” notes Jarocki. “Any citizen or board member can quickly pull up a description that is written in easy-to-understand language.” Readers also can compare a variety of funding tools by using matrices found at the conclusion of each chapter.

A Guidebook of Financial Tools is funded by the EPA and was prepared jointly by the Environmental Finance Advisory Board and the EFC Network.

To order the CD-ROM or a hard copy of the guidebook, contact Wendy Rossman at (208) 426-1567 or via e-mail at wrossma@boisestate.edu. Both items are free except for shipping and handling charges.

Second annual conference for onsite regulators a success

More than 50 onsite wastewater regulators from 34 states gathered in Englewood, Colorado, June 11 to 14, for the second annual Onsite Wastewater State Regulators Conference. Sponsored by the National Small Flows Clearinghouse (NSFC), the conference brought together regulators, industry leaders, and government representatives for three days of discussions.

Topics ranged from voluntary management guidelines to technology verification and performance-based regulations. The NSFC established this annual conference in 1999 to give state regulators a forum to share information and gather insights that can help them develop rules in their own states.

“Once again, the conference was very well received,” said Peter Casey, P.Eng., NSFC program coordinator. “This is a rare opportunity for state regulators to come together and exchange information with other professionals who work in similar positions in other states.”

Attendees requested that the NSFC expand the capacity of its listserv for regulators, that options for creating a national association for state regulators be explored, and that a document describing the issues and concerns of state regulators be developed for distribution to other agencies. Proceedings from the conference will be available in the near future, says Casey.

A planning committee is working on the agenda for next year’s conference, which is scheduled for April 17 to 21 in Washington, D.C.

For more information about the conference or state regulations for onsite wastewater systems, call the NSFC at (800) 624-8301 or (304) 293-4191.

EPA announces environmental education grants

The U.S. Environmental Protection Agency (EPA) announces the 2001 round of grants available under the National Environmental Education Act.

Sponsored by EPA’s Office of Environmental Education, the grants will support environmental education projects that enhance the public’s awareness, knowledge, and skills to make informed decisions that affect environmental quality. Since 1992, EPA has received between $2 and $3 million in grant funding per year and has awarded approximately 1,700 grants.

Grants of $25,000 or less are awarded in EPA’s 10 regional offices, and grants of more than $25,000 are awarded at EPA headquarters in Washington, D.C.

Applications for the grant program are due November 15 for projects with an expected start date of July 1, 2001.

For more information about the grant program and guidelines for submission, visit EPA’s Office of Environmental Education Web site at www.epa.gov/enviroed/grants.html.
The average person generates about 4.4 pounds of municipal solid waste (i.e., trash) per day, and the U.S. Environmental Protection Agency (EPA) estimates that about 253 million tons of trash will be generated in the year 2010. For better or worse, the dirty job of dealing with all of this trash falls into the hands of local government officials. And, all too often, local officials find themselves ill-prepared to deal with this smelly situation.

To remedy this problem, local officials, state officials, and assistance providers from across the U.S. attended the first offering of the recently updated course, “Solid Waste Management Options for Local Officials,” held as part of the Environmental Training Institute for Small Communities.

MRFs (materials recovery facilities) or “murfs,” roll-offs, gaylords, white goods, blue bags, green boxes, NIMBY (“Not In My Back Yard”), and BANANA (“Build Absolutely Nothing Anywhere Near Anything”), were just a few of the terms participants batted about during this two-day course designed to provide the skills and knowledge necessary for small community local officials to make informed decisions about designing and implementing solid waste services. The course covered the technical, economic, and social aspects of the decision-making process for solid waste management in five separate modules. (See box on this page.)

Developing an ISWM plan

Course co-trainer Rhonda Sherman-Huntoon, a North Carolina Cooperative Extension solid waste specialist with more than 14 years of experience in developing and conducting workshops and training courses, explained the four components of integrated solid waste management (ISWM).

According to Sherman-Huntoon, the first step communities should take in developing an ISWM plan is performing a waste stream assessment to look at the total waste stream. This assessment involves researching information about the quantity of waste (weight and volume), the composition (types of waste such as paper, metal, glass, etc.), and sources of wastes (residential, industrial, commercial, institutional, etc.). Solid waste assessments are crucial for communities to be able to make informed decisions that will drive their ISWM plan, she says.

“Source reduction or waste prevention is at the top of the solid waste management hierarchy,” says Sherman-Huntoon. Source reduction focuses on ways to generate less waste rather than dealing with waste once it is generated. It also involves decreasing the toxicity of the waste generated.

“Source reduction includes using fewer things that need to be disposed of, such as eliminating the use of disposables, purchasing sturdier products, and repairing goods rather than sending them to the landfill,” she says. “Another important aspect of source reduction is reuse—that is, using a product more than once.” This might include reusing plastic containers or using cloth towels instead of paper towels.

Reducing waste can be accomplished at the community level as well as by individuals, says Sherman-Huntoon. “Swap shops” located at landfills can function as a free flea market where people can bring goods they no longer need so that others may use them. Local and regional waste exchange programs may be set up for industries to exchange items, such as chemicals, textiles, and wood pallets.

Recycling/composting makes up the second element of the ISWM hierarchy. Recycling is the process by which materials otherwise destined for disposal are collected, processed, made into new products, and resold. Sherman-Huntoon explained that recycling is the third choice—following source reduction and...
reuse—because transporting and processing recyclable materials requires energy and generates pollution.

She explained that many people think they are recycling by simply collecting materials. “If you aren’t seeking out and buying recycled materials, you have not really recycled. You must look for post-consumer products—this closes the loop.” This point needs to be emphasized to residents, businesses, and industries, she says.

Sherman-Hunton described the advantages and disadvantages of various recycling options, including drop-off centers, buy-back centers, and curbside collection. She also outlined several composting options—grasscycling (leaving grass clippings on the lawn), backyard composting, centralized composting, and vermicomposting (using worms to convert organic matter into a soil amendment).

Combustion and landfilling are disposal options for items that cannot be reduced, reused, recycled, or composted. According to Sherman-Hunton, combustion (burning municipal solid waste) is expensive and produces a toxic ash that must then be disposed of, making this option impractical for most small communities.

**Disposal options**

Co-trainer Gerald Doeksen, Ph.D., regents professor and Extension economist with Oklahoma State University, shared his 27 years of experience working with local officials in rural communities on solid waste issues. He explained how Subtitle D of the Resource Conservation and Recovery Act (RCRA), which enacted more stringent requirements for municipal landfills, has drastically reduced the number of U.S. landfills from roughly 8,000 in 1990 to approximately 2,200 in 1997.

Subtitle D requires specific design, management, closure, and post-closure practices for landfills, as well as siting requirements that will ensure environmental protection. A large number of landfills that could not meet these EPA regulations have closed.

According to Doeksen, landfills can be publicly or privately owned and managed. Advantages of public ownership and management are flexibility, efficiency, and potential returns to citizens. Advantages of private ownership and management are that private firms can provide the capital needed to construct the landfill, siting expertise, and operating experience. Private owners also assume the risks involved. “Every situation is unique, so there is no easy answer for communities,” says Doeksen.

Doeksen outlined the technical, economic, and political issues involved in siting a landfill and emphasized the importance of involving the public in this process. He explained how the life-cycle costs of a landfill—costs incurred from the time the landfill is conceived through the 30-year post-closure period—must be considered. The life-cycle costs are then used as the basis for establishing a tipping fee, the cost (usually expressed in dollars per ton) for disposing of materials at a solid waste facility.

Course participants discussed collection strategies and technologies, costs of alternative collection vehicles, and how to handle disposal of household hazardous waste and bulky items, such as appliances.

According to Doeksen, “Pay-As-You-Throw” programs, in which residents’ charges are based on the amount of garbage they throw away, are becoming more widely used. These programs result in higher rates of recycling and reductions of waste going to landfills, provide a straightforward method for communities to assess and pay for solid waste services, and are more equitable than traditional pricing models. A number of “Pay-As-You-Throw” strategies are available, he says.

Doeksen emphasized the importance of preparing budgets for each solid waste collection and disposal option a community is considering. Once the total annual costs and total capital costs of the various options have been compared, communities can make the best choice based on the actual bottom line.

He shared economic analyses of the feasibility of a transfer station for two different communities in his home state of Oklahoma. Transfer stations are an intermediate collection site where wastes are temporarily stored until a large enough quantity is collected for transportation by larger vehicles to final disposal in a regional landfill.

Community convenience centers are a good waste management option for small towns and rural communities, says Doeksen. These centers are located in a convenient area where residents can bring their garbage,
Updated solid waste course provides options for local officials

continued from page 5

recyclables, household hazardous wastes, and bulky goods. The community then disposes of these items appropriately. The most successful convenience centers are well-maintained by the community, have set hours for drop-offs, and are staffed by an attendant, he says.

Public involvement

Both Sherman-Huntoon and Doeksen emphasized the importance of involving the public in all decisions regarding municipal solid waste management. “Don’t make decisions behind closed doors,” says Sherman-Huntoon.

An ISWM plan cannot succeed if the public does not “buy into it,” so local officials must educate the public about the need for and goals of its ISWM plan.

According to Sherman-Huntoon, there are many excellent public education materials already available, so small communities should not have to reinvent the wheel. She encourages local officials to do some research on the Web to find materials. “Keep America Beautiful,” “Project Learning Tree,” and the National Environmental Training Center for Small Communities (NETCSC) all offer quality public education materials, she says. (To learn more about resources available from NETCSC, call (800) 624-8301 or (304) 293-4191.)

Participants interact

A highlight of the course was the active participation by attendees who freely shared their experiences and questions with the class. This enabled participants to learn from each other and build their personal network of resources. Participants unanimously agreed that the course was extremely useful and would help them in their jobs.

“It’s like a godsend to me,” says Lucretia Lee, a recent appointee to a four-year term on the Preston County Solid Waste Authority in West Virginia. “This course is wonderful. I’d encourage others in my situation to attend. I’m very grateful for it.”

Bernardo Sia, an environmental engineer with the Michigan Department of Environmental Quality, says the course will help him in his work with small communities that have been receiving complaints about odors from composting. “I want to learn the proper way to compost and disseminate this information to the small communities I work with,” he says.

“My brain is mush from overload of information,” Anthony “Jambie” Giambrone, litter control officer for Monongalia County in West Virginia, remarked at the end of the course. “I’m learning there are lots of options and getting lots of information to take back to my job. Plus, I’m meeting people and making a bigger circle and increasing my resources.”

Constance Gwinn, a solid waste management specialist with Community Resource Group, Inc. (CRG) based in Springdale, Arkansas, shared many of her experiences working with small communities. She hopes to take the course back to her region and offer the training in the seven southern states that CRG assists.

For more information about “Solid Waste Management Options for Local Officials,” contact Craig Mains, NETCSC training specialist, at (800) 624-8301 or (304) 293-4191, extension 5583, or via e-mail at cmains@wvu.edu.
10 modules that are designed to be flexible, applicable across the country, and easy for both trainers and local officials to use.

The Participant’s Manual includes eight print modules and two videos, job aids, and recommended resources that can be used for self-study or in the classroom. The Trainer’s Guide includes instructor notes, overhead transparency masters, audio/video aids, and recommended instructional strategies and learning activities. A PowerPoint® presentation also is available on diskette in both PC and Macintosh formats.

Trainers share experiences

During this pilot offering, trainers shared their expertise and experiences with the class, bringing the training materials to life.

Larry Parker, P.E., C.E.T., president of Larry A. Parker and Associates in St. Marys, West Virginia, has more than 44 years of experience with environmental affairs. He currently provides technical consulting on government regulations and professional environmental services to industries, municipalities, and professional organizations.

Parker presented the “Basics of a Drinking Water System” and the “Drinking Water System Operation and Maintenance” modules. He defined potable water, cited examples of liabilities, and discussed potential legal outcomes of non-compliance, as well as explaining the required operation and maintenance activities of a drinking water system.

Parker pointed out that the majority of water systems in the country serve communities with fewer than 10,000 persons. He explained how this familiarity with the community and the system encourages water board members to feel directly responsible and personally committed to providing safe drinking water to their own families as well as to the community at large. This personal involvement encourages quality managerial decisions, he said.

Parker also presented a brief history of drinking water legislation and gave an overview of the key points of the SDWA and its amendments. Parker outlined several new
and future requirements that will impact small systems. The Groundwater Rule addresses the appropriate use of disinfection, use of alternative approaches (including best management practices and control of contamination at its source), and the special needs of small systems. The proposed Arsenic Rule, which would lower the current arsenic standard, is designed to reduce the public health risks from arsenic in drinking water.

Bridget Chard, a small communities project coordinator and local official from Brainerd, Minnesota, covered compliance and liability issues, the responsibilities of local officials, and potential drinking water problems. She has extensive experience in planning and zoning and has designed models for wastewater/water management in conjunction with the Rural Utilities Service and Rural Electric Cooperatives.

Chard offered examples from her experience to illustrate the importance of the water board’s role. “I stress to my local officials that drinking water is the most important resource we have and that the next time they take a drink of that great resource, try to think where it came from! That gives them pause and makes them realize just how important it is to protect it,” she explained.

Chard is deeply committed to the community’s stewardship of its water resources and is convinced of the importance of the local official’s role in this stewardship. “The local official is the very important interface between the homeowners and the professional staff, such as the attorneys, the engineers, and the water service providers. As well as the everyday work they do, they are challenged with being proactive and planning ahead,” Chard commented. “They [local officials] truly must look to the future and be excellent planners and managers to meet future challenges successfully.”

Tommy Ricks, a development/management specialist with Community Resource Group, Inc., in Mississippi, introduced the portion of the program explaining the intricacies of management. He discussed ideas for working effectively with consultants and assistance providers as well as management strategies for hiring, training, and retaining quality staff.

Ricks encouraged participants to use the best management practices possible; he stressed that a water system should be run exactly like a business. He emphasized that a detailed business plan must involve all employees—both staff and board members.

“While the staff personnel should handle the operations business, such as billing, lab work, and maintenance, and the board does the governance business, such as the policies, ordinances, rates, and other administrative operations—both parties must be involved in the design of the business plan for it to work effectively,” Ricks explained.

Bill Jarocki, director of the U.S. Environmental Protection Agency (EPA) Region 10 Environmental Finance Center at Boise State University, presented the financial management modules. (See article on next page.) Jarocki reviewed the financial capacity components as defined by EPA: revenue sufficiency, credit worthiness, and fiscal management and controls. The financial aspects of capacity development can be complex and difficult for newly elected officials to understand, said Jarocki. He encouraged participants to remember that good financial practices support the bottom line of protecting public health.

Participants share experiences

Class participants represented a wide range of state, federal, and local organizations. Representatives from towns, Cooperative Extension, state environmental protection divisions, and other related associations made up the group. The various viewpoints and experiences these professionals shared during discussions added to the quality of the classroom experience.

As participant Mary Wiley Myers, with the Pennsylvania Municipal Authorities Association, pointed out, “I felt that the networking and communication with peers in the water industry were a great addition to the course itself.”

Nicki Foremsky, a water quality agent with the Pennsylvania State University Cooperative Extension Service Office, also appreciated the great resources present in the room—the accumulated knowledge and experience of both the trainers and the trainees.

“Although I work in an area where most of my clientele’s water comes from private wells, springs, and cisterns, I gained a better understanding of the disinfection process not only from the speakers, but also from the other participants in the program,” she explained.
Good financial practices are critical to drinking water system health

by Mark Kemp-Rye
NETCSC Contributing Writer

“Face it,” says Bill Jarocki, director of the U.S. Environmental Protection Agency (EPA) Region 10 Environmental Finance Center at Boise State University, “financial management of water systems is boring, boring stuff to most people. But,” he adds quickly, “it’s vitally important to the survival of the system and the community it serves.”

Sound financial practices are not just a good idea but are required by the 1996 amendments to the Safe Drinking Water Act (SDWA). Under the SDWA, water systems must show that they have the technical, financial, and managerial capacity to provide safe drinking water to their customers.

With respect to a system’s finances, the SDWA defines financial capacity as “a water system’s ability to acquire and manage sufficient financial resources to achieve and maintain compliance with SDWA requirements.” A system’s finances can typically be assessed by reviewing the following three categories:

• Revenue sufficiency: Do revenues cover costs? Are water rates and charges adequate to cover the cost of water?
• Credit worthiness: Is the system financially healthy? Does it have access to capital through public or private sources?
• Fiscal management and controls: Does the system maintain adequate books and records? Are appropriate budgeting, accounting, and financial planning methods used? Does the system manage its revenues effectively?

If a system can answer each of these questions with a “yes,” it is said to have adequate financial capacity. Just answering these questions, however, can be a big challenge to many small communities.

Fortunately, help is available for financial management and planning. Here are four resources that communities may go to for help.

EPA Office of Ground Water and Drinking Water—Various capacity development guidance documents may be ordered by calling the Safe Drinking Water Hotline at (800) 426-4791. EPA’s Web site offers several pieces of information related to capacity development, generally, and financial capacity in particular. The site is located at www.epa.gov/safewater/smallsys.html.

Environmental Finance Center (EFC) at Boise State University—One of 10 such programs found at universities around the country, this EFC provides extensive financial help to small communities. Its Web site, located at http://sspa.boisestate.edu/efc, offers a number of useful features, including A Guidebook of Financial Tools: Paying for Sustainable Environmental Systems that may be downloaded free of charge. The guidebook is also available in a CD-ROM format. (See article on page 3 for more information.)

National Environmental Training Center for Small Communities (NETCSC)—NETCSC has recently released a short course for local officials titled “Managing a Small Drinking Water System.” (See article on page 7 for more information about this course.) The course is designed to help local officials in small communities implement management practices that will improve their ability to provide safe drinking water in accordance with the reauthorized Safe Drinking Water Act. The course has 10 modules, covering topics from “Basics of a Drinking Water System” to “Financing Options for System Projects or Upgrades.” Call NETCSC at (800) 624-8301 or (304) 293-4191 or visit its Web site at www.netc.wvu.edu for more information about this new course.

National Drinking Water Clearinghouse (NDWC)—A sister organization of NETCSC, the NDWC develops and maintains services and information related to small community drinking water systems. The NDWC publication Water Sense offers financial and management information in each quarterly issue. Another publication, On Tap, addresses technical, operational, and health issues relevant to small systems. Both newsletters are free and are available on the NDWC’s Web site at www.ndwc.wvu.edu or by calling (800) 624-8301 or (304) 293-4191.

Bill Jarocki, director of the U.S. EPA Region 10 Environmental Finance Center, explains the concept of “financial capacity” to local officials attending the “Managing a Small Drinking Water System” course. Photo by Jill A. Ross.
Training experts share advice on presenting new drinking water course

by Claudette Simard
NETCSC Contributing Writer

Training specialists from around the country shared their knowledge and expertise during the pilot offering of the National Environmental Training Center for Small Communities’ (NETCSC) two-day course, “Managing a Small Drinking Water System: A Train-the-Trainer Course.”

Trainers George Maughan, Ed.D., from Morgantown, West Virginia; Bill Jarocki from Boise, Idaho; Tommy Ricks from Crystal Springs, Mississippi; and Dan Fraser, P.E., C.E.T., from Helena, Montana, combined their experience to present this short course to 24 trainers from 11 different states as part of NETCSC’s Environmental Training Institute for Small Communities.

A new course

“This new train-the-trainer session was designed to make the job of training easier by discussing training strategies, reviewing content, and encouraging trainers to use their own expertise and experiences when delivering the ‘Managing a Small Drinking Water System’ course to local officials,” says Sandra Fallon, NETCSC training specialist.

Maughan, president of Training Consultants, Inc., explained that the course materials are aimed at “improving abilities of local officials in small communities to perform their duties with a greater understanding of all aspects of drinking water systems. It provides trainers with 10 independent performance-based training modules that are flexible, of high quality, and easy to use.”

The course includes two videotapes about the basic operation and maintenance of a small drinking water system. An audiotape featuring examples of how to respond to customers also is included and can be used to help train customer service personnel.

Delivery strategies

“Delivery strategy relates to keeping learners as active as possible for maximum learning,” says Maughan. “Good trainers answer two questions before a training session: What is the content, scope, sequence, and amount of content and detail to present? Second, what strategies do I use to deliver the material so that learners will be able to gain new skills and abilities?” He says it is a good idea to bring in content specialists if you are teaching a topic you are not familiar with.

According to Ricks, a development/management specialist with Community Resource Group, Inc., active learning involves the audience’s participation through reading, discussions, questions, and problem solving. To that end, each course module includes easy-to-use activities to reinforce the text and presentation.

Using activities helps people remember the material. Jarocki, director of the U.S. Environmental Protection Agency Region 10 Environmental Finance Center at Boise State University, borrowed money from the audience and selectively gave out IOUs to show how important good bookkeeping is for financial management. Activities also encourage audience participation, sharing solutions for local problems, and exchanging useful resources, says Ricks.

Skilled trainers are good facilitators for a group of trainees with mixed skill levels, says Maughan. To be effective, trainers must first ascertain the various participants’ skill levels, learning capacities, and non-technical impediments (such as problems with hearing, seeing, or reading). Having participants introduce themselves and state their experience levels not only helps them feel more comfortable, it provides the trainer with some of this information, says Maughan. He also suggested that participants be grouped together by experience level and moved as a group through the course.

Fraser, an environmental consultant and former chief of Montana’s Department of Health and Environmental Sciences’ Water Quality Bureau, exemplified the importance of continued on next page
Maughan recommended using a pre-test to reinforce these responsibilities and focus attention on the course content. And, of course, post-test score gains give everyone a feeling of success.

Training techniques
Gain audience members’ attention by speaking their language and telling a personal story to help them relate to you as a person rather than a trainer. To adapt to different learning styles, training delivery should include seeing, hearing, and reading elements, says Maughan and Ricks. Trainers can use flip-charts, PowerPoint® slides, and the course modules to focus the audience’s attention through visual aids and reading. Interesting props can keep the audience attentive out of curiosity. For example, Jarocki used bottles of beer, soda, milk, and water to demonstrate the low cost of a glass of water.

Verbal delivery must be interesting to keep the audience focused, says Maughan. Trainers need to speak loudly and project their voices while varying inflection and speed. Maughan demonstrated how to make a specific point with a loud whisper, for example.

Trainers demonstrated how to keep the audience attentive by providing constant feedback through body language. Making eye contact with all participants, smiling, nodding, and stepping toward anyone speaking as you move around the room are all essential to effective training. Arranging the tables in a U-shape will facilitate this feedback, recommends Maughan.

Course participants shared suggestions for encouraging local officials to attend training sessions. These include:

- letting officials know how the training can help them work with their constituents, obtain more funds, or win re-election based on their knowledge of drinking water systems;
- getting on local official associations’ meeting agendas to present information or distribute material; and
- pointing out that training will help improve customer service, improve compliance, and increase their understanding of their responsibilities and liabilities.

Oftentimes, local officials are too busy for an all-day session. Trainers can accommodate this by sending individual modules for self-study to officials and offering to call them every week for feedback and questions, suggests Maughan. This regular followup makes the course very effective, he noted.

Dan Fraser, P.E., C.E.T., emphasized the importance of knowing the regulations and the historical basis for the provision of safe drinking water in order to make good decisions about managing a drinking water system. Photo by Susan Maczko.

Participant feedback
Nicole Ottavian, an environmental specialist with Delaware’s Office of Drinking Water in Dover, says she “will take the modules and ideas and break them down to system operators and local officials to show the course’s value.”

Guy Sepich, an operations/management specialist with Community Resource Group, Inc., in Tennessee, was impressed with “the extensive volume of tips from the presenters and participants to help decision-makers see and understand problems.”

Brian Mark with the Wyoming Department of Environmental Quality State Revolving Fund Program, summed up his experience attending the course with words that were echoed by all participants. “I will be able to apply this information as soon as I get back home—especially the delivery tips.”

For more information about “Managing a Small Drinking Water System: A Train-the-Trainer Course,” contact Fallon at NETCSC at (800) 624-8301 or (304) 293-4191, extension 5582, or via e-mail at sfallon@wvu.edu.
What did you like best about the Institute?

- The curriculum was excellent.
- A good learning environment.
- Facility tours were very helpful and interesting.
- A wealth of information—videos, brochures, etc.
- The opportunity to network with a wide variety of people from across the U.S.
- Tips and suggestions on improving my programs from the trainers and other participants.
- Technical assistance providers from all over the country were in the same room and shared similar experiences.

What did you learn at the Institute?

- Information about alternative wastewater treatment systems.
- Ways to teach adults and how much people retain when they learn.
- Techniques for remote learning and techniques to enhance learning.
- Training techniques to use when working with board members.
- A better understanding of onsite technology and how it works.
- The value of distance learning and delivery.
How will you implement what you learned?

• Collect better information for public meetings.
• Listen.
• Start writing objectives for my training sessions before I write the training.
• Place more emphasis on management of the systems.
• Share material and experience with fellow employees.
• Use some of the training tips during future presentations.
• Use information on onsite systems to aid in answering public’s questions.

What will you do differently?

• I will look more closely at other wastewater options.
• I’ll have better resources to help people.
• I will incorporate information about septic systems into my programs.
• I will keep the community involved in every step of the project.
• I will do more prep work prior to doing a presentation.
• I will mix learning strategies more.
• I will add some of the training techniques to my training presentations.

1. Institute attendees network between training sessions.

2. Sandy Miller, NETCSC conference manager (right), and Rachel O’Neil, NETCSC graduate research assistant (center), perfect the art of making s’mores over the campfire during the Institute cookout held at Coopers Rock State Forest.

3. NETCSC’s EPA Project Officer, Betty Ford, and NETCSC Director, Richard Phalunas, spend some time together at an Institute reception.

4. Nelett Lor, a technical assistance specialist with the Southeast Rural Community Assistance Project, Inc., in Virginia, admires the crystal sculpture she received for winning the Institute’s “Ice Breaker” contest.

5. Institute participants attending the cookout enjoyed good food, scenic views of West Virginia mountains, and some bluegrass music. Institute trainer, Bill Jarocki (right), joined the musicians to entertain the crowd.

6. During a course break, Rachel O’Neil, NETCSC graduate research assistant, helps Tommy Ricks, an Institute trainer and development/management specialist with Community Resource Group, Inc., locate information using a computer in the Institute Exhibit Hall.

7. NETCSC Training Specialist, MaryAlice Dunn, presents a cake to Chris Marko, a rural development specialist with the Rural Community Assistance Corporation in California, who celebrated his birthday during the Institute.

8. The soothing sounds of harp music were provided by harpist Christine Mazza during an Institute reception.

Photos by Jill A. Ross and Michael Tallman.
The place: Jamestown, USA—a fictional farming community with a population of 1,500 people (450 sewer connections and 50 onsite systems).

The problem: The town’s 12-year-old wastewater treatment plant is out of compliance and the state is ready to take legal action. The sewer system is experiencing infiltration and inflow problems. Town leaders are bickering. Due to problems, such as low pay, lack of funding for the treatment plant, and conflicting directives from community leaders, several treatment plant operators have quit in the past few years. To make matters worse, the mayor, board members, and the city clerk are all fairly new at their jobs and don’t know how to deal with these issues.

Sound like a community you know? It was a clear case of déjà vu for many attendees of the “Assessing Wastewater Options for Small Communities: A Course for Local Decision-makers” offered at the Environmental Training Institute for Small Communities. Participants had the opportunity to analyze the wastewater situations of four fictional communities. The course attracted a variety of participants with one common denominator—they all work with small communities to resolve such issues.

For Stan Rieb, mayor of Chugwater, Wyoming, the case studies and other stories the trainers and attendees related hit very close to home.

“I’m like most elected officials in Wyoming and probably elsewhere in that I wasn’t very informed about wastewater treatment. I was just satisfied in knowing that when we flush our toilets that it goes somewhere. I just wasn’t concerned until something went wrong.”

Chugwater, population 200, will soon face its own wastewater project. The town needs a new sewage lagoon. According to Rieb, who was asked by the state to evaluate the curricula at the Institute, the “Assessing Wastewater Options for Small Communities” course will help him in his job as mayor.

“I learned more than I expected I would,” said Rieb. “The breadth of information about sewage options that was presented was great. Now, when our maintenance guy talks to me, I’ll have a clue what he’s talking about.”

ABCs of wastewater treatment

The intensive two-day course does more than simply outline the different wastewater treatment technologies for small communities—it explains the fundamentals of wastewater treatment. Participants learn how to evaluate a community’s current and future wastewater needs and the importance of choosing a system that will be viable for the community throughout its life cycle.

The training team of Lorene Lindsay, P.E., C.E.T., and Christopher King, C.E.T., from Missouri, presented the course. Both are professional public health educators with backgrounds in wastewater treatment. The two alternated teaching the course’s eight modules. Lindsay began the first session by offering strategies for teaching adult learners. This topic was well-received by the local officials, Cooperative Extension service agents, and other public service professionals in attendance, who routinely must present issues to the public at town meetings.

The two trainers then painted a picture of what exactly can happen in communities when wastewater treatment issues are neglected. The class examined the results of ignoring failing septic systems and deteriorating sewer systems and treatment plants. Possible consequences for small communities include the spread of disease, polluted local water resources, increased costs for water treatment, and state and federal regulatory action.

The class also learned answers to those wastewater questions you probably always wanted to know but were afraid to ask—such as what exactly is in wastewater and what are the different sources of wastewater in communities?

Lindsay demonstrated a visual exercise she developed to illustrate how a septic tank

continued on next page
works by mixing instant coffee, raisins, and mini-marshmallows together in a pitcher of water. The raisins or “sinkers” quickly sank, representing heavier solid materials in wastewater, such as grit and dirt. The coffee turned the water brown and represented the “lurkies” more commonly referred to as total suspended solids (TSS). The marshmallows or “floaters” in the pitcher illustrated grease and scum. This exercise can be easily duplicated by participants when they need to convey information to the community.

The trainers discussed the impact of these materials on wastewater treatment and the environment, as well as the impact of invisible components in wastewater, such as chemicals and nutrients. The group learned about biochemical oxygen demand (BOD), which is a common measure of wastewater strength and refers to the fact that certain wastewater components use oxygen. Inadequately treated wastewater can deplete the oxygen supply of surface waters needed by aquatic life. Fecal coliforms also are used as indicator organisms to detect the presence of raw sewage in surface waters.

Wastewater project 1, 2, 3s

The course also outlines the many different factors that go into selecting an appropriate, cost-effective, and viable wastewater system for a community. For example, the location and distribution of residents in the community, the composition of the soil, the local geology and topography, the volume and characteristics of the wastewater, and the climate all must be examined before choosing a wastewater system.

In addition to the physical factors listed above, local officials must consider the rate and type of growth their community anticipates, state and local regulatory requirements, the price of the system, and what residents really want.

This was news to Nicki Foremsky, who attended the Institute after three months as a water quality agent with the Pennsylvania State University Cooperative Extension Service Office. She was surprised to learn about the scope of factors that must be considered when assessing a community’s wastewater treatment options.

“I pretty much assumed that if you have a community with a lot of failing septic systems or no system at all, the best thing to do would be to lay down sewer lines and build a small treatment plant,” Foremsky said. “Now I know that there is a lot more to consider, and that centralized treatment is not the only option and may not even be the best option for the environment or for the people who live in the community. You have to consider everything, including the community’s financial situation and what residents want.”

Another course attendee, Hamé Watt, Ph.D., echoed these sentiments. As managing director of Oasis, Inc., a Washington D.C.-based organization, he does consulting for governments in West Africa on water and health issues.

“I was very interested in the word options when I signed up for the course because when international banks and funding groups think of wastewater systems for countries in Africa, they automatically think of big systems,” said Watt. “Eighty to 90 percent of African communities are rural, so it was a valuable experience for me to hear about different wastewater options for small systems and to hear from the other participants about what is going on in the U.S.
Wastewater trainers offer strategies for working with local officials

by Claudette Simard
NETCSC Contributing Writer

Drawing from their combined 38 years of experience in environmental education and training, Lorene Lindsay, P.E., C.E.T., and Christopher King, C.E.T., gave many practical technical assistance and training delivery strategies during the two-day course, “Assessing Wastewater Options for Small Communities: A Train-the-Trainer Session,” which was held as part of the Environmental Training Institute for Small Communities. Thirty-one attendees from nine states contributed experiences and resources to enhance the course presentation.

Course materials

The workshop’s Trainer’s Manual is designed to give trainers the tools to make their difficult job easier. “Public officials don’t want to hear about wastewater,” says Lindsay, an engineer and private consultant from Missouri who has provided technical assistance and training to small communities under a grant from the U.S. Environmental Protection Agency (EPA) for 11 years. “Trainers have to educate officials and the community about how to secure limited grant dollars, choose the best, workable wastewater option, and determine its long-term operating costs.”

“This wonderful manual is a road map for solving wastewater issues. I plan to give a copy of this exceptional training material to our county commissioners,” remarked Art Adams, a public health program manager with the Monongalia County Health Department in West Virginia for the past 20 years.

The course materials include an eight-module training and resource manual, PowerPoint® slides (also available at NETCSC’s Web site at www.netc.wvu.edu), case studies, and group activities.

“Trainers can present the whole course or a particular part of it because the modules are designed to stand alone,” says King, director of the Center for Environmental Education and Training at the St. Louis University School of Public Health in Missouri. “Trainers need to start with specific training objectives and decide which skills they want people to gain—knowledge, physical tasks, or a change in attitude and beliefs. Once that is established, be sure the delivery techniques fit the objectives.”

Other components for successful training include being enthusiastic, well prepared, and organized, says King.

Training techniques

Following the precept that liberal repetition is the key to learning, Lindsay and King modeled a variety of effective training techniques, each using seeing, hearing, reading, and practice to help with information retention.

Class participants introduced themselves, stated what their jobs are, and why they were attending the course. This allowed participants to become familiar with one another. When the course goals and objectives were introduced, participants knew what was ahead and what points to key into. PowerPoint® presentations, starting with the simple and building to the complex, provided a substantial amount of information. Guided discussions on prepared topics allowed the audience to interact and share their experiences, effective solutions, and worthwhile resources for everyone’s benefit. By repeating and summarizing what the audience said, the trainers made sure that everyone heard the comments. Audience participation kept everyone involved.

Simple, repeatable demonstrations with written instructions were not only memorable, but entertaining as well. King demonstrated a visual exercise developed by Lindsay that shows how a septic tank works. Using a pitcher of water, he combined raisins (“sinkers”), mini-marshmallows (“floaters”), and tea for suspended solids (“lurkies”). Attendee Ken Olson, an educator with the University of Minnesota’s Cooperative Extension Service, shared his method of holding up a glass of water and continued on next page
asking, “Has this water been used before?” to bring the wastewater issue to a personal level.

Throughout the course, break-out group sessions and case study activities allowed the audience to practice and understand what they learned. Frequent summarization promoted information retention. Field trips to see several of the wastewater options discussed further supported the course work.

**Strategies for difficult audiences**

Lindsay shared several strategies for diffusing hostile situations, something environmental trainers often encounter on the job. To encourage regulatory compliance, find a motivating factor for the audience, she says. These might include:

- pointing out economic benefits to health, property values, and quality of life;
- warning people that fines will be given for noncompliance; and
- relating the unfortunate experience of another small community (such as the true story of a town of 200 where all the children got hepatitis one summer because failing septic systems drained into ditches).

According to Lindsay, in many cases local officials do not seek training or assistance until they are experiencing a crisis situation. Trainers need to figure out how to get officials to attend training sessions and how to get the information out to the people who need it, she says.

Olson suggested that trainers can “point out to the community leader that he or she is a leader and needs to be a positive one. These training tools are needed to work with their constituents and the community to solve this wastewater problem.”

For a training session without a congenial atmosphere, the approach can be slightly different. Meet the issue head on, says Lindsay. One method is to give a brief pre-test to show the participants what they don’t know about this issue.

Required—rather than voluntary—participants may be very closed-minded, such as the hog farmer Lindsay encountered who accepted training in place of a fine. According to Lindsay, he said, “You have nothing I need to know to do my daily job.” She handled this by acknowledging his statement and then replying:

“Maybe you are right and you don’t want to deal with the problem and there is no solution. Let’s explore the issue anyway and discuss the importance of water resources and community wells.” She finds that even recalcitrant trainees often say they learned something in the daily class wrap-up at the end of the day’s session.

Lindsay shared two other activities that are effective with dominating or argumentative participants. Using something small and silly like a bright ball adds fun to the training while setting speaking rules. This game allows only the ball holder and the trainer to speak. Lindsay incorporated this technique into several sessions by playfully tossing a multi-colored “Koosh” ball back and forth with participants. The class enjoyed this and made sure everyone followed the rules.

Another method is to use a role-playing activity based on a wastewater dilemma. The play acting allows participants to temporarily step in the shoes of someone with views opposite from their own, says Lindsay.

The success of the train-the-trainer course was summed up well by Jean Holloway, a 14-year small systems veteran who now works as a training manager with the EPA Region 3 Environmental Finance Center in Maryland. “I love this short course. It’s the best training I’ve been to for learning about training delivery, subject matter, and how to teach—as well as what to teach.”

For more information about “Assessing Wastewater Options for Small Communities: A Train-the-Trainer Session,” contact MaryAlice Dunn, NETCSC training specialist, at (800) 624-8301 or (304) 293-4191, extension 5538, or via e-mail at mdunn@wvu.edu.
Speakers detail challenges, opportunities facing America’s small communities

by Cathleen Falvey
NETCSC Contributing Writer

“The best way to predict the future is to create it,” commented John Mori, Ph.D., one of four small community experts who spoke at the recent Environmental Training Institute for Small Communities, sponsored by the National Environmental Training Center for Small Communities (NETCSC). All of the speakers addressed the need for communities to be proactive in meeting environmental challenges, but emphasized the many opportunities and resources available to help communities.

Richard Phalunas, Ed.D., NETCSC’s director and associate director of West Virginia University’s Environmental Services and Training Division (ESTD), served as moderator and also addressed the audience of Institute participants. He related the history of ESTD and its organizations, which include NETCSC, the National Small Flows Clearinghouse, the National Drinking Water Clearinghouse, and the five National Onsite Demonstration Projects. He noted that the Institute represents the first time that these programs have been assembled in one place in a training environment.

He challenged the audience to take advantage of the various resources at the Institute and to leave with lists of things learned; things to do differently; and the names, phone numbers, and addresses of people and resources at the Institute.

Finally, to frame future discussions about environmental challenges facing U.S. communities, he listed numerous compelling water and wastewater statistics. Phalunas said that every year, there may be as many as seven million cases of mild to moderate water-related illnesses in the U.S. resulting in as many as 1,200 deaths, and the U.S. Environmental Protection Agency reported that 1,062 beaches had health advisories or closings in 1998.

“We depend on clean and healthy water for food, enjoyment, recreation, and jobs. We take millions of trips and spend billions of dollars cleaning up our waters. But the job is far from over, and we must continue to protect the waters that sustain us,” concluded Phalunas.

Bridget Chard, a small communities project coordinator and local official from Brainerd, Minnesota, described how the role of local officials has evolved over the years. She stressed that local officials must “strike a delicate balance” to earn the trust of residents and also to work with service providers and other professionals to get things accomplished in the community.

Chard’s speech focused on a wastewater project in a small lakeside community in Minnesota. The community had cesspools and malfunctioning septic systems that were seriously contaminating the lake and wells. Seasonal residents collaborated successfully with the township and county government and continue to work together on other projects.

Throughout her slide show, Chard challenged the audience to pick out the local officials in photos to drive home her point that local officials are “just like you.” She advised public officials working with communities on projects to “always start small.” She believes that taking extra time to build upon foundations in the community, such as the trust and involvement of residents (through homeowner education programs, for example), always helps save time in the long run. She also urged local officials “not to take it all on” and do everything for communities but to “spread it around,” to build self-sustaining communities that can work together.

Julie Ward, program manager of the Great Lakes Rural Community Assistance Program (RCAP) described her organization and its mission: “to assist people in rural America to improve their quality of life.” Through its six regional affiliate organizations, continued on next page
RCAP employs 200 field-based technical assistance providers in 50 states. RCAP employees provide small communities with technical information and training and often serve as “the one-stop center of communication for infrastructure projects.”

Examples of ways RCAP helps communities with wastewater projects include evaluating alternative technologies, locating funding sources, conducting sanitary surveys, and developing wastewater system operation and maintenance plans. RCAP helps small drinking water systems with regulatory compliance and regionalization. RCAP also helps communities organize volunteers to clean up illegal solid waste dumps and implement recycling and drop-off programs.

In addition, RCAP employees help small communities form legal entities and structures that allow them to undertake projects. “Many communities don’t know where to begin,” said Ward. “Maybe they have never had a construction project before. We help them with project planning, from hiring an engineer, to getting a preliminary engineering report, to issuing public notices, to finding funding sources, and to outlining who needs to do what.”

RCAP “basically works with rural people in rural areas to get safe water for the community,” said Ward.

When John Mori, Ph.D., ESTD director, addressed Institute attendees, he began by describing a government project to drill wells in a small community to increase its water supply. The government researched the scientific feasibility of the project, but never consulted with community residents. As a result, mistrust and skepticism grew in the community regarding the motivation of the government and the viability of the project. Some residents were fearful of change. Finally, the few local leaders who had been behind the project were replaced in an election, and without community support, the wells were capped and never used. The project was a failure.

This case study, which was based on a real community project in 1947 in Peru, could have taken place in the U.S. today. One lesson this story illustrates for the local officials and other audience members who work with small communities is that these types of problems are universal, but that communities often feel as if they are the only ones in the world facing these problems. The case study also demonstrates that change is always with us; that failure cannot be tolerated; that leadership must be available in the community; and that, in addition to the technical aspects of projects, much of what we deal with are human factors and human motivations.

Mori went on to say that while it is easy to begin the process of change, it’s difficult to make change work. “The world we live in now is far more complex than it was 15 years ago, and certainly more complex than in 1947. Change is always with us and the only choices we have for reacting to it are to ignore it; feel frustrated, isolated, or depressed by it; or to embrace it and prevail,” said Mori.

He pointed out that many positive forces are converging to facilitate change in small communities. “For example, today we have better information for communities and it is far more accessible than it used to be. We have examples of communities that have developed innovative ways to deal with change, and their stories must be told so that other communities can benefit.”

Mori said that more training is available, and entire organizations, such as RCAP, the National Rural Water Association, and ESTD’s organizations, facilitate change for small communities so that failure is not an option.

Mori summed up his message for small communities saying that “we must be free to embrace the idea of change.” And, while change is uncomfortable, “it is only with change that progress and solutions can occur.”
Training Skills:
Course demonstrates video conferencing

by Susan Maczko
NETCSC Promotions Editor

Many participants attending the Environmental Training Institute for Small Communities were curious about distance delivery and how it relates to environmental training. Although there are many types of delivery systems that can be used for distance education, two-way video-conferencing (VC) was the subject of the half-day course, “Training Adults in Remote Classrooms: Demystifying Distance Delivery.”

What is videoconferencing?

Videoconferencing connects two or more people and allows them to communicate and interact through a two-way video and audio connection.

Videoconferencing can aid or hinder the communication process. “Like many instructional delivery systems, when used appropriately, it can provide high quality environmental training experiences to participants over a distance. When used inappropriately, it can frustrate just about anyone,” says George Maughan, Ed.D., president of Training Consultants, Inc., and the primary instructor for this course.

Advantages of VC include reduced travel expenses, instantaneous information sharing, and more frequent training or meetings. A disadvantage of VC is that communication may be hindered if the tools are used incorrectly due to lack of familiarity with the technology. Also, some trainers and participants may be uncomfortable with VC because the technology is unfamiliar to them. The use of cameras and the ability to see oneself on a monitor or hear one’s own voice may seem daunting at first. However, after several uses, participants will relax and learn to use VC effectively. Finally, some topics are easier to present through VC than others, so knowing which course or topic to offer using VC takes practice.

As with any type of training method, says Maughan, VC requires skilled trainers and facilitators. The facilitator can encourage questions and handle any problems that may arise at the remote site.

Setting up the classrooms

Participants were divided into two groups for this course. One group attended the course at the origination site (OS) located at the National Environmental Training Center for Small Communities’ headquarters on the West Virginia University (WVU) campus while the second group attended at the remote site (RS) on another part of the WVU campus. Maughan was the primary instructor at the OS, while Erich Lipphardt, project manager with Training Consultants, Inc., was the facilitator at the RS.

At the OS, the camera was focused on the instructor with separate monitors that allowed participants at the RS to see the participants and instructor at the OS. The RS camera focused on the whole classroom, which meant that the OS participants, as well as the instructor, had visual contact with everyone in the RS classroom. When speaking, participants at both sites activated a tabletop microphone that allowed the other site to hear them, while the instructor microphone was audible constantly.

Planning ahead

With videoconferencing, it is essential to plan ahead to ensure effective and satisfying learning. According to Maughan, planning is necessary in three areas—network, curriculum, and delivery.

With network planning, keep in mind the design of the VC system and the primary goals of the training. For a large group of people (such as in this course), a classroom system is the best design, while a compact system is suitable for smaller groups. A compact system is sometimes called a “portable system” because less equipment is used so it can be moved easily from one location to another. Whichever system you choose, be sure to have high quality signals and audio and a classroom setup that allows for eye contact and interaction among the participants and the instructor, says Maughan.

“Perhaps the most significant thing I learned was that not all facilities are created equal,” says Jean Holloway, training manager for the U.S. Environmental Protection Agency.
Region 3 Environmental Finance Center in Maryland. “The Institute session pointed out the differences between facilities and made me realize that it won’t be as easy to set up as I thought.”

If two-way VC is to be used to deliver curriculum, planning involves more than the need for training and what will be taught. VC requires that the method of training be more visual and that the interaction between the instructor and learner receive more attention than in a traditional classroom.

Delivering VC training

Maughan suggests that trainers use interactive strategies to keep the learners’ attention. These include: eye contact—using close-up camera shots with the trainer leaning toward the camera; asking questions by calling the learner by name (while being careful not to put the learner on the spot); planning group activities and learner tasks; offering multiple images, such as PowerPoint® slides and videos; and switching back and forth between the RS and OS.

According to Maughan, personnel needed for videoconferencing may include:

- a content specialist who will research and provide the course content;
- an on-camera instructor who prepares and delivers the presentation;
- a producer/director who assists with planning the program and operates the equipment during the session;
- an engineer or systems operator to turn on the equipment, connect or disconnect the VC sites, and test the system prior to the session;
- a facilitator to assist students operating equipment at the remote site(s);
- an administrator to schedule the facilities, register participants, and perform logistical duties; and
- a materials preparation specialist who develops computer presentations, such as PowerPoint® slides, graphics, and print materials.

These tasks may be combined and the trainer may be able to perform some of them.

Delivery techniques in VC systems need to be more structured than in other training methods, says Maughan. Although students should be able to ask questions and participate in discussions, too much unstructured time will disrupt the flow of the course. Trainers should pay attention to the amount of information presented as well. If the learners receive too much information in a short period of time, they may find it overwhelming.

To teach a course using VC, instructors must use new skills to communicate because half of the class will receive lessons in the traditional style, while the remote class will receive video instruction. The instructor will not be free to roam the classroom, name tags are not useful (but a seating chart helps), and some students may feel uncomfortable in this learning environment. The instructor should be aware of these and other possible roadblocks when preparing for the session and incorporate strategies to overcome them.

Is VC here to stay?

Many areas of the U.S. are using VC training. For example, Wyoming has 13 VC sites that offer graduate course programs.

“In Wyoming, we use and enjoy interactive videoconferencing not only for distance education, but also for public outreach and rule-making activities,” says attendee Brian Mark with the Wyoming Department of Environmental Quality State Revolving Fund Program. “We reach more folks in more areas and forego costly time and travel constraints. As we develop additional training for small and rural systems, distance learning will be well-suited to reach our target audience with the greatest numbers and lowest cost.”

Maughan reported that he had contacted 21 environmental specialists to prepare for this course. The results of this informal survey found that 80 percent of the states contacted have a VC system, while 20 percent of survey respondents either do not have one or were not aware of one. Fifty percent of survey respondents said they have used VC for training and 40 percent said they plan to use it in the future. Twenty percent said they will use VC if the quality of the systems improve. These results indicate that most states have VC systems, environmental trainers use VC (but not to its full capacity), and plans for future use are uncertain, says Maughan.

“Videoconferencing is going to be a big part of our future in training,” says Christopher King, C.E.T., director of the Center for Environmental Education and Training at the St. Louis University School of Public Health in Missouri.

For more information about the course, “Training Adults in Remote Classrooms: Demystifying Distance Delivery,” contact MaryAlice Dunn, training specialist, at the National Environmental Training Institute for Small Communities at (800) 624-8301 or (304) 293-4191, extension 5538, or via e-mail at mdunn@wvu.edu.
Institute attendees share favorite Web sites

by Caigan M. McKenzie
NETCSC Contributing Writer

Between training sessions at the Environmental Training Institute for Small Communities, participants took the time to share tips with each other about helpful Web sites. Brief descriptions of some of these sites are provided below so that you may check them out for yourself.

“Envirofacts”

Log onto “Envirofacts,” located at www.epa.gov/enviro, to view the U.S. Environmental Protection Agency’s warehouse of environmental data. Through this site, you may access a variety of environmental information databases. The online query feature allows you to create reports or generate maps using information from these databases.

“Envirofacts” also lists a variety of useful information resources, answers frequently asked questions, and keeps you updated on current environmental news.

AWWA

The American Water Works Association (AWWA) site, www.awwa.org, continues to be a favorite among drinking water professionals. With more than 50,000 members, AWWA maintains its status as the largest organization of water supply professionals in the world.

The AWWA site provides technology, science, management, and government policy information. The site also fosters networking and an exchange of ideas among its varied membership, which includes treatment plant operators and managers, scientists, environmentalists, manufacturers, academicians, and regulators.

You also may view a listing of AWWA books and publications, find numerous water links and technical resources, and access AWWA-sponsored online courses.

State Rural Water Associations

Both the West Virginia Rural Water Association (WVRWA) and the California Rural Water Association (CRWA) were mentioned by Institute participants as having helpful Web sites.

The WVRWA site, designed to educate users and representatives of small water and wastewater utilities, may be found at www.wvrwa.org. This site contains a quarterly magazine, lists addresses and phone numbers for federal and state elected officials, profiles various state programs, and lists public notices. You also will find publications, legislative information, and links to other related sites.

The CRWA site is located at www.calrural-water.org. Here you can find technical publications, information about annual conferences, a monthly newsletter, regulatory updates, employment opportunities, training opportunities, links to products and services provided by members, and links to state and federal agencies.

E-commerce sites

Log onto www.waterdesk.com or www.wateronline.com if you are interested in participating in the water industry’s online marketplace.

“WaterDesk.com” offers water industry news, articles and research, and industry-related links. Its current membership includes engineers, contractors, government officials, manufacturers, suppliers, and distributors.

In addition to being an e-commerce site, “Water Online” also provides news and analysis about water issues; a career center for those recruiting or seeking jobs; and a resource center that lists events, associations, and discussion forums.

Listservs

The National Small Flows Clearinghouse’s (NSFC) State Regulators Listserv and Pennsylvania State University’s Training and Development Listserv (TRDEV-L) were highlighted as favorite listservs by Institute participants.

The State Regulators Listserv provides an open forum for regulators to exchange ideas and experiences with one another. To join this listserv, contact Colleen Mackne at the NSFC at (800) 624-8301 or (304) 293-4191. Only state regulators may participate in this listserv. Registered users receive e-mails from the listserv administrator and other regulators.

TRDEV-L, found at LISTSERV@lists.psu.edu, provides a forum for those who want to discuss training and development issues with peers. Postings are sent daily to members in a single e-mail message. These postings are screened and approved by a TRDEV-L editor before distribution.
Wastewater course a primer for decision-makers in small communities

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“The social considerations discussed during the workshop also were very important to me,” he continued. “Failure to take these social considerations into account generally causes projects to fail. The course was valuable for showing different options, not only in wastewater technologies, but also in financing and resources for projects.”

Some of the options and resources for project financing outlined in the course include local banks, foundations, corporations, service organizations, and in-kind services typically available to small communities. Contact information for many of these resources is included in the appendices of the Participant’s Guide included with the course. Participants also learned about community self-help projects and how to locate and utilize talent already available in the community to further project goals and reduce costs.

The course provides participants with strategies for implementing a successful wastewater project, such as how to choose a consulting engineer, options for paying engineers, what engineers should include in the preliminary engineering report, and how to make sure the report conforms with financing program requirements. A sample request for proposals (RFP) is provided in the Participant’s Guide.

Finally, participants discussed the concept of project commitment and ensuring the success of the project through education and communication with the public. Maintaining the viability of the system is another aspect of project commitment and includes planning for maintenance, repairs, equipment replacement, and general managerial and financial support for systems.

Assessing a community’s needs

One idea emphasized throughout the course was the importance of tailoring the project and choosing a system to suit the community’s individual needs. Community leaders need to set politics and subjectivity aside and carefully assess residents’ needs and wishes. Local officials and community groups can use the following questions, taken directly from the Participant’s Guide, to begin the process. (Please note that communities will need to enlist professional help to answer some of the questions.)

- What specifically are the community’s wastewater problems (for example, types/age of systems that are failing, direct discharges to ditches, pit privies, or permit violations from an existing treatment plant, etc.)?
- What are the local soil and geological conditions?
- Has the state regulatory agency, local planning agency, or local health department advised the community of a wastewater problem?
- Are there areas in the community where no problem exists? Which areas are these?
- How many residences and businesses are affected now, and how many will likely be affected in the foreseeable future?
- What is the anticipated growth of residential, commercial, and industrial customers?
- Can other nearby wastewater systems provide wastewater services to unserved areas?
- Are there nearby communities that have similar problems? If so, can a joint solution be achieved?
- What would be the best solution if money were no object?
- What would be the least expensive way to solve the problem?
- Can a solution be developed in a series of affordable steps, or is it better to do it all at once?
- Can the community do some (or all) of the work?
- What will happen if nothing is done?

Many of these questions will be difficult to answer, but it is important to investigate the answers before deciding on a course of action. Discussion of these questions can help officials focus on the real needs of the community.

For more information about “Assessing Wastewater Options for Small Communities: A Course for Local Decision-makers,” contact MaryAlice Dunn, NETCSC training specialist, at (800) 624-8301 or (304) 293-4191, extension 5538, or via e-mail at mdunn@wvu.edu.
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NETCSC’s drinking water course premieres

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The modules include activities that trainers can use when presenting the material. One class exercise clearly demonstrated how different backgrounds and experiences can affect people’s opinions. Ricks created two detailed employee applications for an exercise about how to fill a water plant operator position with the most appropriate person. As participants discussed each of the resume items, the exercise demonstrated just how differently people interpret things. As the vigorous discussion continued, Ricks pointed out how difficult it can be to determine the most qualified applicant.

“We hope that participants in the ‘Managing a Small Drinking Water System’ course take away with them the basic principles of how to provide safe drinking water in accordance with the reauthorized SDWA,” said NETCSC’s Fallon.

“Our short course can be used as a self-study program, as well as in the classroom, and when different experts and local officials are involved in the course—sharing their personal experiences and advice—it is exceptionally valuable,” Fallon adds.

For more information about “Managing a Small Drinking Water System: A Short Course for Local Officials,” contact Fallon at (800) 624-8301 or (304) 293-4191, extension 5582, or via e-mail at sfallon@wvu.edu.