National Center for Small Communities reaches out

by Diana G. Duran
E-train Editor

Small communities now have one more helping hand, the recently established National Center for Small Communities (NCSC), a small town, nonprofit educational and training organization. NCSC’s mission is to provide small town decision makers with the tools to govern effectively and the skills to expand local economies, protect natural resources, and preserve community character.

NCSC is affiliated with the National Association of Towns and Townships (NATaT) as the organization’s training and technical assistance arm. The center was founded in 1984 and became a legally separate 501(c)(3) nonprofit educational organization in early 1997. Its staff conducts research and develops public policy recommendations reflective of the unique needs of rural governments and small towns.

With more than 13,000 member towns, townships, and other small communities across the country, NATaT is “the voice of America’s grassroots governments,” and the only national association devoted exclusively to smaller, hometown government.

“The Center will have its own board of directors and a broader, national focus than NATaT,” says Hamilton Brown, director of training and technical assistance. Outreach will be to small town and rural leaders and to funders and project partners.

NCSC sponsors an annual educational conference, conducts training programs, and publishes affordable materials to assist local officials in setting policies and providing public services. The National Center is keenly aware of the rural renaissance taking place in much of the country as businesses, families, retirees, and tourists rediscover the personal and economic advantages of simpler, small town life.

Although many of its resources deal with environmental issues and related local financing, the Center’s primary goal is to help smaller communities develop a realistic, shared vision for their future and to identify the tools to make this vision possible. The Center’s approach is illustrated by new resources and recent events.

Training materials

*Harvesting Hometown Jobs* is a new small town guide to economic development and a comprehensive how-to guidebook for the citizens and economic development practitioners in small communities. *Harvesting* walks community leaders through the options of local economic development. Much of the discussion on planning raises key environmental concerns related to protecting critical resources and local quality of life.

Between now and the year 2000, every state in the nation will make critical decisions affecting the quality of public drinking water. Two recent pieces of legislation, the 1996 Farm Bill (P.L. 104-127) and the 1996 Safe Drinking Water Act (SDWA) Amendments (P.L. 104-182) provide a unique opportunity to protect and preserve local water supplies through source water protection programs.

The NCSC has developed a *Small Town Action Guide for Source Water Funding* to promote the timely involvement by local...continued on page 7
APIE hotline answers environmental questions

If you have ever wanted to know what the environmental results are when pesticides are applied to the lawn, or if all-natural window-cleaning solutions are available, you may want to call the American Public Information on the Environment (APIE) hotline.

The national, nonprofit organization offers clear practical answers to individuals and businesses with environmental questions. The hotline is staffed from 8:30 a.m. to 5 p.m., EST.

For detailed information, you may call the hotline at (800) 320-APIE, or contact the group at 124 High St., P.O. Box 340, South Glastonbury, CT 06073, or by e-mail at api800@aol.com.

Environmental trainers’ discussion forum online

A new discussion forum for trainers and technical assistance specialists is now online at the National Environmental Training Center for Small Communities’ (NETCSC) Web site.

The forum is open to all professionals wishing to explore various training topics including problems, successes, tips and techniques, needs assessment, evaluation, development, and delivery.

Those accessing the site will be able to post training-related questions and receive feedback from others. For instance, if a trainer is looking for more information about available case studies for a wastewater training session, he or she could ask other trainers for examples that they’ve used in their training.

Participants will be asked to provide some basic personal information the first time the forum is accessed. A “guest” option will allow potential participants to view the discussion through a special “read-only” format; however, messages cannot be posted. Only registered participants can post questions and answers.

See the discussion forum at NETCSC’s Web site at http://www.netc.wvu.edu.

New risk assessment guide helpful to small communities

Home*A*Syst: An Environmental Risk-Assessment Guide for the Home, a 122-page publication to help residents of rural and suburban areas evaluate their homes for safety and environmental risks, is now available from the Northeast Regional Agricultural Engineering Service (NRRAES).

The book covers 11 topics that every homeowner or resident should understand: evaluating a property for environmental risks, stormwater management, drinking water well management, household wastewater, hazardous household products, lead, yard and garden care, liquid fuels, indoor air quality, heating and cooling systems, and household waste management. The workbook-like format is easy to use and accompanied by numerous illustrations.

Home*A*Syst, NRRAES–87, is available for $8 per copy (plus shipping and handling) from NRRAES, Cooperative Extension, 152 Riley-Robb Hall, Ithaca, NY 14853-5701. Quantity discounts are available. For information or for a free publications catalog, contact NRRAES by phone at (607) 255-7654, by fax at (607) 254-8770, or by e-mail at nraes@cornell.edu.

Southwest onsite waste-water conference set

The 2nd Southwest On-Site Wastewater Management Conference and Exhibition is scheduled for February 4–5 in Laughlin, Nevada.

Topics include decentralized wastewater management, common pitfalls and proper construction techniques, increased nutrient removal from alternative onsite systems, pathogens and indicator bacteria removal, effecting change in onsite practice and operator certification, performance evaluation of gravity and pressurized systems, and soil morphology, among others.

The conference is sponsored by the Arizona County Directors of Environmental Health Services Association. Registration is $100.

For information, contact Dan Smith at (520) 774-8941, or Norm Marrah at (520) 757-0901.
Texas onsite wastewater site on the WWW

The Texas Water Resources Institute (TWRI) has created a World Wide Web site with extensive information about the use of onsite wastewater systems in Texas.

In addition to a searchable subject index of 42 topics, the site also contains text, photos, and graphics from all 27 issues of the quarterly Texas On-Site Insights newsletter. The newsletter focuses on research in Texas pertinent to onsite wastewater, case studies of regional problems, innovative solutions, and meeting and publication announcements.

A search engine, other site links, a form for e-mail feedback, and usage statistics are also available. TWRI also operates an electronic mail list server, “TWRI WaterTalk.”

The site was funded by grants from the Texas On-Site Wastewater Treatment Research Council, a state agency that receives $10 for research, education, and training whenever an onsite wastewater system is installed in Texas.

The site address is http://www.towtrc.tamu.edu. For more information, contact Ric Jensen, information specialist, at Texas Water Resources Institute, Room 301, Scoates Hall, Texas A&M University, College Station, TX 77843-2118, call (409) 845-8571, fax (409) 845-8554, or send e-mail to rjensen@tamu.edu.

ERIC provides educational database

ERIC invites submission of publications to be indexed and abstracted in their monthly listing of educational resources, Resources in Education.

The Educational Resources Information Center (ERIC) Clearinghouse for Science, Mathematics, and Environmental Education is part of a network composed of 16 clearinghouses and several adjunct clearinghouses. Together, they cover a wide variety of educational scopes and issues in the world’s largest educational database. ERIC currently has more than 1 million records of conference papers, journal articles, books, reports, and non-print materials for anyone interested in education at any level.

For a submission release form or additional information, contact Niqui Beckrum, database coordinator, at (800) 276-0462 or (614) 292-0621, fax (614) 292-0263, or e-mail beckrum.1@osu.edu.

Onsite wastewater training center opens in Michigan

An onsite wastewater training center has opened at Michigan State University’s (MSU) Tollgate Educational Center in Novi. Training started this fall with soils classes directed toward sanitarians and with an onsite wastewater systems class.

The training center’s initial emphasis will be on improving conventional practice, mounds, and sand filters, including their associated pressure distribution systems, pumps, and controls.

For more information, contact Ted Loudon, chair of the Technical Advisory Council, at (517) 353-3741, or e-mail him at loudon@egr.msu.edu.

LBCC courses on the Web

The Department of Water and Wastewater Technology at Linn-Benton Community College (LBCC) in Albany, Oregon, now offers courses for continuing education units (CEUs) or college credit via the World Wide Web.

“Process Control I: Operation of Biological Treatment Processes,” the first in a two-course series covering the basics of activated sludge operational control, was offered this fall.

Beginning January 5, 1998, “Process Control II” takes operational concepts of biological treatment a few steps further to include biological nutrient control, filamentous bacteria identification and control, and topics covering attached growth treatment systems. A third course, “Solids Handling,” is in development.

Tuition for each course is $255, plus the cost of the textbook.

For specific course information, including course topics to be covered, contact Ron Sharman at (541) 917-4628 or e-mail him at sharmar@lbcc.cc.or.us. Class descriptions are accessible at LBCC’s Web site http://www.lbcc.cc.or.us/watertech/process.html.
Editor's Note: This, the first of two articles, discusses computer-based training packages and curricula. The Spring E-train will focus on computer-based training aids.

If you haven't noticed, the information highway is starting to look a lot like the autobahn. Getting on and off takes increasing skill, the vehicles are whooshing past faster and faster, and you often need a newer and better model to get to your destination.

Most of us would agree that computer technology is a good thing, that it has increased productivity as well as improved access to information. On the other hand, it has also increased our workloads and our respective learning curves as we all try to use the available technological tools for training.

Meet the specific need

Trying to choose from the array of computer-based training (CBT) tools, their components, content, and hard- and software requirements, can be mind-boggling and time-consuming. And the cost may seem prohibitive, especially to those working in and with small communities.

However, sorting through the proliferation of computer-based training tools is possible. Most share certain features and technological requirements.

CBT is available for drinking water, wastewater, and solid waste, with more water and wastewater than solid waste packages available. A sampling may include packages to train operators, sanitarians, local officials, engineers, farmers, installers, and municipal planners, among others.

Topics range from selecting municipal solid waste options to wastewater system design, installation, and problem solving; treatment technology; and conducting user-rate analysis to prepare for certification exams. Most are self-study, designed for use on the job, and are IBM-PC compatible. Some are highly technical; others are more “user friendly.” (See sidebar of features below.)

So, given all these possibilities, what else does the environmental trainer or trainee need to know?

Focus on the learner

Training experts offer us some advice as well as caveats. Bob Pike, editor of the newsletter, Creative Training Techniques, says that the attention to computer-presentation systems is as it should be, that “ever-improving delivery is essential to success in our line of work.” But he cautions that we have to be careful not to let the tools and technology stand in front of another important consideration—how students best learn and retain information.

“If I want to learn a new skill, I’d still rather have someone show me than read a book by myself,” he says. Bob Pike, however, also cautions that “we have to protect the learner’s ability to learn.”

The following are typical features of computer-based training packages/software:

- use CD-ROM
- most are IBM compatible and require Microsoft Windows 3.1 or higher; some Macintosh compatible
- may require SVGA display capabilities
- deliver technical and scientific information and training
- offer a realistic environment for optimum training, describe and include real examples
- contain photographs and diagrams of, for example, wastewater treatment plants
- may offer online help system to introduce the program and demonstrate its use
- use self-study format
- offer continuing education units (CEUs)
- contain tests, quizzes, and exams
- use database(s) to track user progress; index and store questions or other information
- have a video cassette as a complement to CD-ROM
- may provide a video demonstration and include a self-assessment

Pros and cons

A review of computer-based training tools

by Diana G. Duran
E-train Editor
book or walk through an interactive tutorial,” he says. “Delivery systems may change; how we learn doesn’t. No one has changed how the short- and long-term memories function.”

Mary Ann Fisher, a private computer software trainer and consultant in Denver, Colorado, counts among her clients Lockheed-Martin, Coors, and the Colorado Department of Agriculture. She agrees with Pike, adding that she is unaware of any definitive studies indicating that CBT is effective in the areas of retention and skill improvement.

“So some students will be able to learn using the technology, but CBT may be a ‘garbage-in—garbage-out—the-other-ear’ learning experience for some users,” says Fisher. “As far as software training is concerned, I don’t know if true learning can occur without some person-to-person interaction. Moreover, the burden then falls on the individual to be motivated and stimulated enough to grasp the information being delivered through the CBT.

“On the other hand, there are definite pros,” she says. “CBT—using multimedia, sound, and animation—can be a vast improvement over studying textbooks and training manuals, looking at technical drawings and pictures, and having to read everything you learn.” (See sidebar of pros and cons below.)

Assess skill level

Fisher cautions trainers not to assume that the people receiving the training are computer literate and comfortable enough with the particular hardware and software to interact with the CBT.

“The average person may not be able to run the CBT,” she says, adding that many people are intimidated by computers. “Or they may not know how to operate them—you can not assume that anyone—even in a software class—has that knowledge.”

Fisher offers an instance of work with a client in western Colorado where communities may be 60 or more miles apart, and the population is sparse.

“The central office solved the communication problems by providing a laptop computer to each branch office. When I got there to train them on the software, many didn’t know how to open them, much less how to plug in all the cables and use them.”

Mike Kunkle of PlanSoft adds that, “With the current state of technology, I don’t see CBT (on CD-ROM or any other media) replacing instructor-led training.

“For me, effective skill-based learning includes input of the knowledge necessary to perform the skill (including the what, why, and how), demonstration, preparation, application, feedback, and reapplication,” he says.

With small communities, other factors have to be considered, especially if a trainer is using distance learning technologies such as the Internet. “One thing to remember is that any technology is no better than the local phone system,” Fisher says.

She offers an anecdote to illustrate. “A client moved to a small, rural community. He

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The pros and cons of computer-based training

- Probably cost effective in the long run if used on a per-fee basis
- Can reach anyone just about anywhere
- Training occurs onsite, travel expense saved
- Self-paced, modular learning environment
- Individual learns only what she/he needs to know
- Interactive learning environment can motivate student
- Multimedia, sound, and animation, can be more stimulating than just reading
- Current and accelerating training trend
- Can provide real-life simulation, problem solving
- Initial, up-front development costly, may need frequent updating
- Small communities may not have technological capabilities
- Burden of motivation falls on the student
- May be intimidating
- Does not address different learning styles
- May be boring to learn compared to live instruction
- Learners may skip introductory lessons, incorrectly assessing own skill level
- Learners need to know how to run hardware or software
- May not answer learner’s questions or permit asking any
- Little research on retention and skill improvement
- Quality of feedback/evaluation of learning more difficult
NETCSC hires, promotes training specialists

Sandra Fallon has joined the National Environmental Training Center for Small Communities (NETCSC) as a training specialist. She earned a master’s degree in technology education from West Virginia University (WVU). Fallon brings 15 years’ experience in training and instructional design to the job. She has produced a number of training-related videos, including two on toxicity testing for the U.S. Environmental Protection Agency and several for the National Small Flows Clearinghouse. She also has developed technical and safety-related training materials for the natural gas industry.

Fallon is involved in local environmental activities, including the West Virginia Land Trust, a nonprofit, statewide organization whose mission is to protect and preserve private lands.

In addition, Sherry Swint and Craig Mains have each been promoted to training specialist. Swint joined NETCSC as a graduate research assistant. Since January 1995, she has worked as a training resource specialist. She was also employed with Bennett and Williams ECI, an environmental engineering firm, where she was project manager for a Class B landfill. Swint also worked on constructed wetlands for treatment of acid mine drainage and underground storage tank removal projects. She is currently working toward a master’s degree in engineering and has recently been asked to serve on the West Virginia committee to develop composting certification.

Mains, who began work with NETCSC as a writer/editor in August 1993, holds a master’s degree in environmental science from WVU. His work at NETCSC has included technical review of curricula, among other duties. As project coordinator of the Downstream Alliance, a volunteer group involved in stream monitoring, Mains has focused on community education. The group uses biological and chemical analyses of aquatic organisms to determine stream health. Mains also authored Stream Monitoring, A Handbook for West Virginia Citizens, which was published in 1993.

The training specialists’ responsibilities involve developing and revising training materials, overseeing training deliveries, and providing training assistance, including training resource reviews, database searches, referrals, and answering calls on NETCSC’s toll-free hotline.

For information about training and other NETCSC services, call (800) 624-8301 or (304) 293-4191. You may also access NETCSC’s Web site at http://www.netc.wvu.edu.

A review of computer-based training tools

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was computer literate, had all the tools, including a 56K modem for Internet access. The problem was that the telephone system couldn’t support it—it could handle only a 14K transfer of data—not enough for his purposes.”

In another case, at a recent presentation to the Association of West Virginia Solid Waste Authorities, Sherry Swint, National Environmental Training Center for Small Communities (NETCSC) training specialist, asked about 30 agency volunteers how many have access to the Internet.

“A few people raised their hands,” she says. “This isn’t as surprising as it may seem at first. The authorities’ financial resources are scarce.

“Given that response, I thought of a software package I had recently reviewed:

“Minimum hardware configuration for the program is 486/33 DX2, 8MB RAM, CD-ROM Drive 2X, 40MB available hard disk space, SVGA color monitor, mouse, etc., etc.’ I had to wonder how many small community organizations could afford CBT or have the skills to use it effectively,” says Swint.

“With training—regardless of the delivery system—the bottom line is that the requirements change depending on who you’re training, their needs, and their skill level,” she says.

For a database search of available CBT packages for drinking water, wastewater, solid waste, or adult education, call NETCSC at (800) 624-8301 or (304) 293-4191, or fax (304) 293-3161. There is a per-page charge for the search, plus shipping and handling.
National Center for Small Communities reaches out

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elected and appointed officials in source water planning. The guide:

• summarizes local source water protection responsibilities and strategies,
• explains the opportunities for local governments available through the SDWA, and
• identifies key points at which local, timely input can help determine state-based source water priorities and set-aside funding levels to benefit municipal and county governments over the next five years.

For the first time, millions of dollars will be available through the SDWA and the Farm Bill to protect both local wells and surface water sources from potential contamination.

Training programs

The NCSC will co-host its 18th annual educational conference in Washington, D.C., along with its legislative affiliate, NATaT September 9–11, 1998.

This past year, the National Drinking Water Clearinghouse (NDWC), NETCSC’s “sister” organization, joined NCSC as a workshop participant and conference exhibitor. The NDWC has been an exhibitor for a number of years and helped sponsor the source water protection workshop based on the Action Guide described above.

Two other workshops were particularly popular with small town leaders concerned with environmental issues: one involved keys to successful funding, and the other focused on a major source of surface water pollution—contaminated runoff from feedlots.

Policy making

In the past year, NCSC and local elected officials from NCSC member communities participated on advisory committees or offered comment to federal officials on a wide range of activities and subjects. These included representation on the NETCSC National Advisory Council, the U.S. Environmental Protection Agency’s (EPA) Phase II stormwater subcommittee, and the EPA/Environmental Council of the States innovation task force outreach group for local governments.

NCSC staff also conducted training for hundreds of local elected officials and trainers at state association meetings in, among other states, Pennsylvania, New York, South Dakota, Wisconsin, Minnesota, Georgia, and New Mexico.

Publications

Since its inception, the Center has produced a collection of guidebooks and training modules that respond to the needs of small town leaders, trainers, and assistance providers. The first edition of Harvesting Hometown Jobs, the Center’s widely used economic development guide, has sold more than 16,000 copies since 1987. Other NCSC guidebook titles include:

• Innovative Grassroots Financing, a small town guide to raising funds and cutting costs;
• Getting Out from Under, a risk management approach to preventing fuel tank leaks and spills; and
• Survival Guide for Elected Leaders, a look at essential skills necessary to conduct business and manage people in a small community setting.

These and other research and resource materials have been developed through funding provided by the NCSC’s 11,000 members, with significant foundation, government, and corporate support from the Ford Foundation, W. K. Kellogg Foundation, The Aspen Institute, and companies such as Amoco, Aetna, Pioneer Hi-Bred, United Parcel Service, and Wal-Mart.

In partnership with the federal government, the NCSC has directed research, training, and technical assistance projects funded by the U. S. Department of Housing and Urban Development, Economic Development Administration, U.S. Department of Agriculture, Department of Justice, Tennessee Valley Authority, and the EPA.

A list of NCSC resources can be obtained by writing, calling, or faxing the National Center for Small Communities, 444 North Capitol St., NW, Suite 294, Washington, D.C. 20001, (202) 624-3550, fax (202) 624-3554, e-mail at natat@sso.org.

The Small Town Action Guide for Source Water Funding is also available from the NDWC, West Virginia University, P.O. Box 6064, Morgantown, WV 26506-6064. You may also call (800) 624-8301 or (304) 293-3161, or e-mail to ndwc_orders@estd.wvu.edu. Ask for Item #DWBLFN12. Actual shipping and handling charges apply.
For more information or to place an order, contact NETCSC at (800) 624-8301 or (304) 293-4191 between 8 a.m. and 5 p.m. EST. You may also fax your order to (304) 293-3161. Actual shipping and handling charges apply. Please allow four to six weeks for delivery.

Wastewater troubleshooting now available

“Troubleshooting and Optimizing Wastewater Treatment in Small Communities,” a training curriculum designed to help wastewater operators troubleshoot their treatment processes, is now available. The curriculum consists of four modules that cover nutrient removal, lagoons, attached growth, and activated sludge processes. It was developed for the National Environmental Training Center for Small Communities (NETCSC) by the Center for Training Research and Education for Environmental Occupations at the University of Florida.

Each module is designed for a two-day training course with the goal of helping operators troubleshoot and optimize their treatment processes to achieve regulatory compliance and minimize environmental impacts.

Course materials and activities help participants learn to:
• organize a troubleshooting project,
• better understand the biological and chemical environments needed to achieve effective treatment,
• identify data needed for process control monitoring,
• evaluate and identify performance-limiting factors, and
• apply troubleshooting skills to prioritize and eliminate performance-limiting factors.

Each module includes an Instructor Guide with overhead transparency masters, a Participant Workbook, and a Reference Text. The workbooks use case example activities to help participants develop troubleshooting skills. The Reference Text contains comprehensive information that covers all four modules. It includes additional information on management, communication, and team building to address problems that are not directly related to process control.

The curriculum also introduces participants to the use of the U. S. Environmental Protection Agency handbook, Retrofitting POTWs. The handbook provides a systematic method for evaluating and improving the performance of existing, non-complying wastewater treatment facilities.

The curriculum is now available for purchase. Cost for the packages are as follows:

**Complete Package**
TRTPCD32 ................................................ $179

**Activated Sludge**
TRTPCD27 ............................................... $76

**Nutrient Removal**
TRTPCD28 ............................................... $76

**Attached Growth**
TRTPCD29 ............................................... $76

**Lagoons**
TRTPCD30 ............................................... $76

**Reference Text**
TRTPCD31 ............................................... $40

**Retrofitting POTWs**
WWBKDM46 ............................................. $0

Identification of Filaments in the Activated Sludge Process

This video and brochure can assist wastewater operators and laboratory personnel in the identification of filaments related to the activated sludge process. Trainers could use the video as a visual training aid.

TRVTOM05 .............................................. Free
Dear Reader,

Whether you have received several issues of E-train or just received your first one, your thoughts about the newsletter are important to NETCSC. Please take a few minutes to complete this postage-paid survey. No stamp is necessary. All responses will be considered as we plan future issues. Thank you.

Diana G. Duran, Editor

Are you involved in environmental training activities?  Yes, ___% of my job  No

other (please specify)_____________________________________________

Do you: (please check all that apply)  develop training  deliver training  provide onsite/technical assistance

In which area(s): (please check all that apply)  drinking water  wastewater  solid waste  adult education

other (please specify)_____________________________________________

Are you employed at a(n):  environmental training center  university/college  local government (county health,

community, service district, regional district/ regional commission)  state agency  EPA  other federal agency

international organization  private company/agency/organization  nonprofit organization

other (please specify)_____________________________________________

How would you rate E-train in the following categories:

Online usefulness of content to your interests/job  Excellent  Good  Average  Fair  Poor

Variety of information  Helpful resources

Ease of finding information  Layout and design

How would you rate these E-train sections?

Profiles of training programs  Very useful  Useful  Somewhat useful  Not at all useful

Training feature stories  E-news  Training skills  Training resources  Internet resources

NETCSC news  NETCSC training deliveries calendar  NETCSC products/curricula listing

How did you find out about E-train?  word of mouth  another publication  a conference  NETCSC staff

other (please specify)_____________________________________________

When you finish reading E-train, you:  pass it on  save it  recycle/throw it away

Is the information you need organized in a manner that is easy to use?  Yes  No

Do you have access to the Internet?  Yes  No  Do you have e-mail?  Yes  No

Have you ever downloaded/read the newsletter from NETCSC’s Web site?  Yes  No

Which do you prefer to read:  electronic copy  hard copy mailed to you

Would you be willing to serve as a contact/consultant for future articles?  Yes  No

If so, in which area(s) of expertise:  Wastewater  Drinking Water  Solid Waste  Adult Education

We may contact you at:_____________________________________________

Name

Phone/Fax  Address
What small community environmental training issue(s) do you most need information about? (Please be specific.)

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Please share any additional comments you may have about E-train. __________________________________________________________________________________________________________________________________________________________

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Please list the names and addresses of people or organizations you believe might benefit from receiving E-train.

Name/Organization: __________________________________________________________________________________________________________________________________________

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Training Needs Assessment: Matching Techniques and Contexts

This technical working paper acquaints readers with common training needs assessment and provides information to help in the selection of the best techniques. It also suggests ways that NETCSC's national training needs assessment may be used at the local and regional level.

TRBLTR02 ............................................................. $3.20

Formative Evaluation of Environmental Training Programs

This paper describes the role of formative evaluation in the development of training programs and materials. It explains various formative evaluation techniques and gives brief case studies used in the environmental training field.

TRBLTR08 ............................................................. $2.90

Summative Evaluation of Learners in Environmental Training

This paper describes common training evaluation data collection techniques, lists current evaluation research, and discusses some of the critical issues about evaluation. It also provides suggestions for those who develop and evaluate environmental training programs.

TRBLTR09 ............................................................. $3.20

Pay-As-You-Throw Tool Kit

This tool kit provides information about the U.S. Environmental Protection Agency's pay-as-you-throw (also known as unit pricing) program that helps communities reduce waste and control their municipal solid waste management costs. Trainers can use this tool kit as is or modify it for their own uses.

TR000577 ............................................................. Free

Trends in the Production and Use of Video in Environmental Training

This paper compares the current trends in the production and use of video in environmental training with recommendations from training experts regarding methods and program formats to achieve skill-oriented, performance-based training.

TRBLTR10 ............................................................. $3.75

Evaluating the Results of Environmental Training

This paper acquaints the reader with the ideas and concepts associated with evaluating small, nonprofit environmental organizations. It describes traditional and non-traditional measures of learning, examines Level IV (results) evaluation, and provides information that could be tailored for Level III (behavior) and Level IV evaluations in environmental training.

TRBLTR03 ............................................................. $2.90

Instructional Design Considerations for Environmental Training

This paper describes the task analysis process and its relation to performance objective development and examines widely referenced instructional design models. It also discusses conditions that facilitate learning and considerations for learning materials selection and development.

TRBLTR04 ............................................................. $2.20

Additional NETCSC Resources...

For a complete listing of NETCSC curricula and additional training resources, you may order the Environmental Training Resources Catalog for Small Communities at the numbers on page 8, or view the catalog online at http://www.netc.wvu.edu. The catalog is free. Please ask for Item #TRBKPR11.
RCAP and NETCSC
A fruitful partnership for small communities

by John Hoornbeek
NETCSC Training Research Associate

Editor's Note: This article, the second of two (see “RCAP: Help for Small Communities” in the Fall 1997 E-train, Vol. 6 No. 4), provides general information and ways in which NETCSC and RCAP have worked together to benefit small communities.

“As a matter of course, we seek partnerships with other organizations to fulfill our small community assistance mission,” says Rick Phalunas, director of the National Environmental Training Center for Small Communities (NETCSC). “One of the most fruitful of these partnerships has been with the Rural Community Assistance Program (RCAP).”

RCAP is a national organization devoted to assisting small and rural communities. The RCAP network is divided into six regions, which provide a wide range of services tailored to meet the needs of small communities—including needs relating to local environmental management and infrastructure.

Over the past several years, RCAP has increased its use of NETCSC services. “We worked with NETCSC in a number of areas, including curriculum development and training delivery,” says Mark Richardson, senior technical assistance specialist for the Rural Community Assistance Corporation (RCAC)—RCAP’s western regional affiliate based in Sacramento, California.

Helen Spinelli, community development director for the Maryland Rural Development Corporation (MRDC), the lead agency in Maryland for the Southeastern RCAP based in Roanoke, Virginia, adds that she “reads E-train and makes use of NETCSC resources available through its telephone hotline.”

This work enables environmental management and public health improvements for small communities in locations across the country.

Training delivery

“The RCAP network has co-sponsored eight training programs with NETCSC and provided trainers for at least six courses,” says Phalunas. “Their assistance has been critical to the success of these training efforts.”

Sandy Miller, NETCSC conference services representative, adds that “RCAP staff members have regularly attended our training programs. To date, more than 50 RCAP staff have participated in at least 17 NETCSC-sponsored training programs.”

For example, Kevin Brooks, executive director of the MRDC, attended a “Basics of Environmental Management” (BESM) train-the-trainer program in Kansas City, Missouri, one of nine such programs offered by NETCSC over the past several years. Staff from five of the six RCAP regional affiliates have now attended at least one of these BESM train-the-trainer courses.

“I am able to provide the BESM materials to four circuit-riding town managers in our program who provide direct town management services to seven small Maryland communities,” Brooks says. “The materials help our effort to provide comprehensive and holistic support to the approximately 30 communities we serve.”

Richardson and his associates at RCAC have also participated in NETCSC’s “Onsite Wastewater Systems Operation and Maintenance” course. As a result, they now use NETCSC materials to deliver onsite wastewater training. This training is part of a larger effort to train small community Tribal officials in Arizona, Nevada, and California on water and wastewater operations.

“We are sponsoring onsite wastewater training in Laughlin, Nevada, in cooperation with U.S. Environmental Protection Agency Region IX, the Onsite Wastewater Association of Arizona, and the Indian Health Service,” says Richardson.

“This training grew out of our participation in the fall 1996 program sponsored by NETCSC and the Arizona Onsite Wastewater Association.”

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Association. We are even using some of the same trainers. The program is designed to provide a basic understanding of onsite wastewater systems.”

Richardson says that the RCAC-sponsored training will “improve the effectiveness of technical assistance efforts by helping Tribal officials define their onsite wastewater problems, thus promote appropriate assistance. The result should be more effective and efficient wastewater systems.”

**Curriculum development**

“Curriculum development is one of NETCSC’s primary activities, and RCAP has played an important role in the development of three curriculum packages,” says Phalunas.

RCAP regional offices have developed two NETCSC-sponsored curriculum packages. They were also instrumental in the development of a third. The Midwest Assistance Program (MAP), RCAP’s northcentral regional office in New Prague, Minnesota, developed “Working Effectively in Small Communities for Consulting Engineers,” a course to help consulting engineers improve their services to small communities. The California-based RCAC developed “Communicating Drinking Water Issues,” designed to help drinking water regulatory officials work more effectively with small communities.

And the Great Lakes RCAP office in Ohio was part of a coalition that worked with NETCSC to develop the BESM curriculum. BESM is targeted to local decision makers and small community environmental managers to help them improve the management of water, wastewater, and solid waste services.

“One of the first things I did after joining RCAC was work on the development of the ‘Communicating Drinking Water Issues’ curriculum,” says Richardson. “I was involved in the needs assessment process.

“Working on this curriculum helped me learn about developing training programs, and particularly about the importance of tailoring training to the needs of the audience,” he adds. “I’ve sat in too much training where I became bored because the program was not geared to my needs.”

Gigi Cairel, another RCAC senior technical assistance specialist, says that she and others at RCAC use the “Communicating Drinking Water Issues” curriculum in their day-to-day work. “We have offered this drinking water course at least five or six times,” she says, “and we regularly use portions of it in our work with small communities.”

Richardson recalls using the meeting management and small community outreach modules of the “Communicating Drinking Water Issues” curriculum to assist a small drinking water district (about 1,000 customers) in San Diego County, California. “The special district was under grand jury investigation for misuse of funds that stemmed primarily from the Board’s inability to work together.”

After training that incorporated modules from the “Communicating Drinking Water Issues” curriculum and some additional technical assistance from the RCAC staff, the district improved its management practices and resolved the grand jury’s issues.

According to Richardson, “the grand jury investigation is no longer open, and the small water district is now able to get the loans to finance its drinking water services.”

The joint efforts of RCAP and NETCSC extend beyond curriculum development and delivery. *E-train* includes articles on RCAP network activities, and RCAP staff are among those who use NETCSC’s toll-free training assistance hotline. Currently, Cairel represents RCAP on NETCSC’s National Advisory Council (NAC). RCAP newsletters and conferences have also included information on NETCSC services and activities.

“RCAP and NETCSC are working together to have positive impacts on small communities nationwide,” says Phalunas. “We are pleased that NETCSC’s materials, services, and resources are helping RCAP staff members in these important efforts.”

For information about RCAP, call (703) 771-8636, or visit its Web site at [http://www.rcap.org](http://www.rcap.org).

To find out more about NETCSC’s curricula packages or upcoming training, call (800) 624-8301 or (304) 293-4191. For information about NETCSC, you may also visit its Web site at [http://www.netc.wvu.edu](http://www.netc.wvu.edu).
The adult learner
Teaching is not telling, and learning is not listening

by Anne H. Nardi, Ph.D.

Editor’s Note: This, the second of two articles on the adult learner, discusses physical, cognitive, and motivational aspects and how they impact training. (See Fall 1997 E-train for the first article, “Adults as learners: Stages of development.”)

In teaching adults, we pay particular attention to three sets of characteristics—above and beyond the content we want to teach: physical changes, motivation, and cognition. This assumes that we want what we are teaching them. And if their learning is our focus, then our task is to facilitate their learning.

Physical changes (or Growing older isn’t always what it’s cracked up to be)

Like it or not, with increased age, certain sensory limitations become apparent. Both sight and hearing are known to decline as adults reach mid-life. Changes in vision may be the most obvious deficits. More adults over 40 begin to wear glasses or have difficulty reading with the glasses they have.

The result may be using then removing reading glasses, noticeable difficulty working at computers, and sensitivity to light glare on the computer screen, as well as needing to adjust to the size of print used in overheads, handouts, and graphic displays.

For the trainer (or instructor), anticipation and attention to these details in the preparation of materials will enhance the learner’s ability to use information provided in visual presentations. Computers beneath overhead lighting may require adjustments or screens to minimize glare. In all cases, these modifications should be designed to minimize the effects of decreased visual acuity and to increase the visual impact of instructional materials.

Hearing changes may be more subtle because they are less directly observable; their impact may be less expected and, as a consequence, more dramatic. If learners have experienced mild hearing loss, the clarity of verbal presentations, the content of lectures, and the flow of information in question-and-answer sessions may be affected.

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Imagine this as a system where the learner has a fixed amount of energy to spend on learning, and assume that amount is set at 100 percent. If the learner must focus 70 percent of the available energy on adjusting to physical demands and visual and hearing limitations, the amount of energy remaining to concentrate on learning equals only 30 percent at the most. With that level of energy and effort devoted to it, learning would greatly suffer.

**Motivation is the fuel**

Motivation and cognition are best thought of as related concepts. Motivation is the fuel, and cognition is the engine that drives learning. Motivation energizes the learner, and cognition describes how the learner actually processes the information. Motivation is thought to be the catalyst that keeps the learner involved in learning.

Trainers may think of motivational devices or “grabbers” to get learners’ attention at the start of a training session, to get the group involved, and whet their appetites for what is to come. The motivational strategy needs to be relevant to the learner. For example, adults do not like to appear foolish or stupid, so that should temper what kinds of activities trainers might try.

Much has been written about the adult as a self-directed and motivated learner. Adults often participate in training, short courses, or degree-related course work in order to learn specific skills and acquire competencies to enable them to change jobs or enhance their career potential in the same job. Often the energy that propels adults to enter a training program is very pragmatic: they have identified certain goals that the program will help them achieve. The learner’s expectations are clear, and the outcomes are known.

That appears to be very descriptive of the adult who has chosen his or her learning goals and is pursuing them. In many instances, however, adults are in training sessions or courses because someone else (the supervisor, the agency administration, the federal government, and so on down the line) has decided what the goals should be or what the training needs are.

That general approach describes learning as if it is something that is “done to” a person. It may or may not satisfy the learner’s needs. The trainer cannot afford to assume that any learner will be intrinsically motivated to learn, especially when a supervisor or regulatory agency says, “You have to do this.”

Motivation makes the content to be learned appealing, interesting, and relevant, and some instructors believe it is the teacher’s responsibility to motivate the student to learn.

**Cognition is the engine**

This discussion leads to the cognitive connection. Cognitive psychologists have examined how learners think and how they process knowledge. For years, education and training emphasized reinforcement of the desired correct responses essential to learning.

Although reinforcement continues to be recognized for its importance in learning and teaching, cognitive psychologists—such as Howard Gardner, David Perkins, and Robert Sternberg—stress the importance of meaningfulness to learning.

To grasp the importance of meaningfulness, think of how difficult—if not impossible—it is to learn something that makes absolutely no sense whatsoever. For example, commands for *a sequence of actions* given in Arabic to someone who speaks only Spanish demonstrates what is meant by a lack of meaning.

It seems silly if not bizarre to use that as an example where learning could be assumed to occur. However, new information is often introduced with little thought about how to connect it to prior learning or knowledge. Compounding this is training introduced because “we have to cover this.”

Cognitive psychology underscores the importance of “prior knowledge.” It is important to see new information as “fitting into” the framework of prior knowledge. With adults, there is certainly an abundance of prior knowledge; the key is finding a match or a set of connections that relate prior knowledge to new information. One way to do this is to examine the content to determine relevant patterns that could be related to common prior experiences the learners might have had.

Another important strategy is to view knowledge as something other than inert information, passed from instructor to learner, unchanged by the way in which the learner perceives, processes, and transforms the information. To do this, it may be helpful to provide the learners with connecting links or “hooks” on which they can “hang” new information to connect with prior knowledge. The trainer may need to show the learners ways to relate the knowledge rather than assuming
Most environmental trainers will tell you they usually don't spend most of their time in training delivery. No, many find that training others is just part of their job, but a very important one. So when they prepare to train, it's always good to have helpful resources at hand—or keyboard—to fill in the gaps.

Often, HOW training is delivered can be just as important as WHAT is being delivered. After all, even the best subject matter can be lost on an audience if the delivery style is not up to par. With that in mind, check out the site “Making Effective Oral Presentations” at http://www.cba.neu.edu/~ewertheim/skills/oral.htm.

The site focuses on some of the more common problems for those facing a group, or in a trainer's case, a room full of learners. As the site notes, poor communication is complex and cannot be solved by a single book or course, but by examining key elements of a presentation, it can be improved. Some of those key elements examined here include:

- Podium Panic—stage fright, speech anxiety, or talking terror;
- Strategies for presenting to specific audiences;
- Ways to develop a flexible, flowing structure for your message;
- Delivery style tips and techniques; and
- Ways to ask and answer questions.

Also included in the site are supplemental items such as a checklist of things to consider before your presentation, a brief outline to follow when organizing your talk, suggestions for using visual aids effectively, and a group presentation evaluation form.

If you would like more information about developing or giving presentations, another good site is located at http://www.presentingsolutions.com/effectivepresentations.html.

Okay, so you've put in a lot of preparation time for your training session, and now you want it to get started off right. No problem. Surf on over the sea of servers to the site called “Icebreakers.” Compiled from a Cornell University trainer network conference, the site lists some fun, interesting ways to spur dialogue, energizers, and meeting starters.

Start first by reviewing the site's general background on the use of icebreakers. It explains what they are, how and why they are used, and their appropriateness in a training setting. Additional resources are listed too, should you care to get off the Web and pick up a book.

From there, peruse the 28 activities, and you're sure to find one that will work for you. Many list the activity's objective and the most suitable group size. Most are quick, fun activities that get people moving and laughing.

Whether they're used at the beginning of a session, after a break, or during one of those afternoons when the lunch time carbohydrates have kicked in and made your audience sleepy, these activities promise to lighten the mood. See the site for yourself at http://www. cornell.edu/Admin/TNET/Icebreakers/Icebreakers.html.

As trainers close a session with an evaluation, so too will I close this piece with information about evaluation.

Evaluating the Effectiveness of Training Programs, a scholarly paper, explains why evaluation is necessary and focuses on the four levels of effective evaluation—Reaction, Learning, Transfer-of-Learning, and Results. The paper notes that “the ability to track and report regularly on the effectiveness of training programs beyond participant reaction can be critical to its success. It can also cement organizational recognition of the value of training and can help to ensure continued support.” See the piece for yourself at http://www.zondlo.com/access/eval.html.

Web addresses for these sites were current at the time of publication. Send suggestions for future site reviews to Jamie Knotts at jknotts@wvu.edu or contact him at (800) 624-8301 or (304) 293-4191. Faxes may be sent to (304) 293-3161.

At a glance...

Making Effective Oral Presentations:
http://www.cba.neu.edu/~ewertheim/skills/oral.htm

Presenting Solutions:
http://www.presentingsolutions.com/effectivepresentations.html

Icebreakers:
http://www.cornell.edu/Admin/TNET/Icebreakers/Icebreakers.html

Evaluating the Effectiveness of Training Programs:
http://www.zondlo.com/access/eval.html
Wastewater Understanding and Maintaining Your Sand Filter System


Content: This video describes a sand filter system and how it works. It also details how to inspect and maintain it, summarizing the four parts of the system—septic tank, pump chamber, sand filter, and drainfield. Finally, the video provides ways to inspect and maintain the system, and the do's and don'ts to avoid damage to it.

Use: The video demonstrates and promotes advantages of an onsite sewage disposal system to homeowners as a wastewater disposal system that is durable, low-cost, and effective. It highlights the importance of clean water and discusses some of the causes of low quality clean water. This easy-to-use video allows those who plan to build onsite systems and facilities to understand alternative onsite sand filter systems.

Video, 18 minutes–1994............................$5.25
(Plus shipping and handling)

Contact: Cooperative Extension, Washington State University, N. 11840 Hwy. 101, Shelton, WA 98584, (360) 427-9670, ext. 396, or (360) 275-4467.

Wastewater Understanding and Maintaining Your Onsite Sewage Treatment and Disposal System


Content: This video describes a gravity-flow system and how it works. It summarizes the three areas of the system—septic tank, drainfield, and soil treatment. Finally, the video provides ways to inspect and maintain the system, and the do's and don'ts to avoid damage to it.

Use: The video demonstrates and promotes advantages of an onsite sewage disposal system to homeowners as a wastewater disposal system that is durable, low-cost, and effective. It highlights also the importance of clean water and some of the causes of low quality clean water. This easy-to-use video gives those who plan to build onsite systems and facilities an understanding of alternative onsite gravity-flow systems.

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Teaching is not telling, and learning is not listening

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that they will be able to bridge the gaps between new and previously held information.

Simply telling learners what the knowledge is without helping them see the connections and apply new information and concepts fails to capitalize on the strengths that adult learners bring to a learning environment.

Expecting listening to be the primary way to acquire knowledge may result in a lack of learning—to say nothing of bored resistance. The old adage, “tell me and I forget,” underscores the limitations of training and instruction that fail to actively involve the learner, especially when training is skill-based. As more than one theorist has said, “We learn what we do.”

As learners acquire “expertise” with new information, their motivation increases as they recognize the relevance of the knowledge and skills they have acquired. Learning occurs. The trainer’s role, then, will inevitably shift from that of being the “sage on the stage” to being the “guide on the side.”

Anne H. Nardi is Associate Dean in the College of Human Resources & Education at West Virginia University (WVU). She previously served as the chair of the Department of Educational Psychology and Foundations at WVU. Her doctorate is in life-span developmental psychology.
Onsite wastewater training center reps meet, discuss goals

Training needs assessment 1998: An agenda for action

Computer-assisted training aids

“If you can’t explain it simply, you don’t understand it well enough.”

Albert Einstein