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CIDWT Glossary Project
and
Train-the-Trainer Program

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CIDWT
Consortium of Institutes for
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Abstract

Glossary: Increased interaction between and among professional organizations and industry groups involved with decentralized wastewater treatment has created a critical need for common terminology relative to system siting and design, regulatory permitting and enforcement, component construction and installation, operation, maintenance and monitoring, as well as consumer education. The glossary provides a comprehensive list of common terminology and associated definitions required for continued advancement of all sectors of this field. The implementation of the glossary in future training and education materials will expose an increasing numbers of practitioners to the terminology and thus facilitate clear communication within the industry.

Train-the-Trainer Program: As interaction among practitioners has gained a national perspective, personnel in the field have regularly expressed their desire for more consistency in the content and delivery of training and education materials. Program directors need assistance to develop high-quality materials and to ensure effective and consistent delivery. In conjunction with this project CIDWT conducted two Train-the-Trainer academies to build capacity in practitioner training and education.

Benefits:

- Standardization of technical language will improve communication among industry professionals and their clients.

- Consistent content and effective delivery of high-quality, peer reviewed education and training materials will increase capacity for practitioner training.

Keywords: decentralized wastewater treatment, training and education, wastewater, distributed wastewater management, onsite wastewater treatment

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LIST OF ACRONYMS

ASCE	American Society of Civil Engineers
ASTM	American Society of Testing and Materials
AWWA	American Water Works Association
BMPs	Best Management Practices
CIDWT	Consortium of Institutes for Decentralized Wastewater Treatment
COI	Captains of Industry
CSREES	Cooperative States Research, Education, and Extension Service
EB	Executive Board of the CIDWT
EPA	Environmental Protection Agency
EPA MOU	Environmental Protection Agency Memorandum of Understanding
LSS	Licensed Soil Scientist
NAWT	National Association of Wastewater Transporters
NDWRCDP	National Decentralized Water Resources Capacity Development Project
NEHA	National Environmental Health Association
NOWRA	National Onsite Wastewater Recycling Association
NSFC	National Small Flows Clearinghouse
NPCA	National Pre-cast Concrete Association
NRCS	Natural Resource Conservation Service
OSHA	Occupational Safety and Health Administration
PE	Professional Engineer
PI	Principal Investigator
PM	Project Manager
SORA	State Onsite Regulators Alliance
SSSA	Soil Science Society of America
USDA	U.S. Department of Agriculture
US DOL	U.S. Department of Labor
US EPA	U.S. Environmental Protection Agency
WEF	Water Environment Federation
WERF	Water Environment Research Foundation

EXECUTIVE SUMMARY

Technical advancement in decentralized wastewater treatment options has been accompanied by statewide, regional and national educational programs that share research, demonstration and manufacturer literature among a broad group of industry professionals. Increased interaction between and among professional organizations and industry groups has created a critical need for common terminology and standardized training materials relative to system siting and design, component construction/installation, operation, maintenance, monitoring, regulatory permitting/enforcement and consumer education. The Consortium of Institutes for Decentralized Wastewater Treatment (CIDWT) was founded, in part, to meet this need.

Glossary

The goal of the Glossary portion of this project was to provide the common terminology required for continued advancement of all sectors of the decentralized wastewater treatment field. The writing team pursued this goal by soliciting broad, comprehensive review of terms and definitions created specifically for this Glossary or gathered from existing sources. Comments on two distinct versions of the draft document were individually evaluated for their merit and incorporated as appropriate. As a result of significant stakeholder input, the document has evolved into a comprehensive list of terms and definitions that represents not only the current view, but also the future vision of the industry.

At the conclusion of the project, the document will be available on the CIDWT website in PDF format. Current CIDWT projects adhere strictly to the terms and definitions included in the document and future efforts will follow suit. As CIDWT continues to pursue the development and dissemination of broad, comprehensive, peer-reviewed training and education materials, increasing numbers of practitioners will be exposed to the terminology. CIDWT's MOU partners will play a key role in expanding the use and exposure of the Glossary through cooperative efforts in support of the partners' mission statement.

Train-the-Trainer Academies

As interaction among practitioners has expanded to include a national perspective, personnel in the field have regularly expressed their desire for more consistency in training and education. Directors of training programs around the country strive to deliver this instruction; however, concern is often expressed regarding the considerable time and effort required to continually develop high-quality materials to address the demand. Additionally, once the materials are available, it is vital that they be consistently and effectively delivered to the target audience. This is the two-fold challenge of building capacity in the realm of practitioner training and education. CIDWT conducted two Train-the-Trainer Academies during the project to meet this challenge. The first academy focused on the National O&M Service Provider materials (Lesikar et al., 2005) and the second event allowed participants to experience the process of curriculum development by creating a one-day class using (among other sources) the CIDWT Practitioner and University curriculum materials (Gross., 2005; Lindbo et al., 2005). As a result of O&M

Service Provider Train-the-Trainer Academies conducted during this and previous projects, more than 2000 practitioners received training on this critical aspect of managing decentralized wastewater treatment systems during 2006 and 2007.

INTRODUCTION

1.1 Purpose and Philosophy of the Glossary and Train-the-Trainer Project

The two features of this project were inherently connected and together they will enhance the endurance and value of previous CIDWT endeavors. The goal of past and present projects has been to develop semantically and technically consistent curricula for decentralized wastewater treatment professionals. The foundation of achieving the goal has been stakeholder participation in the development process.

1.1.1. Standardizing Terminology

Decentralized wastewater treatment terminology originated and evolved primarily on the local or regional level in conjunction with regulatory or Agricultural Extension activities. Personnel in this field regularly encountered discrepancies in vocabulary when they traveled outside their local/regional jurisdictions. When the American Society of Agricultural and Biological Engineers (ASABE – formerly known as ASAE) conference was the sole national forum for sharing information, the technical personnel who attended conferences could revise materials to match local terminology. However, educational programs and other resources available on the World Wide Web facilitate access to information from virtually anywhere. Adapting terminology in localized resources from one setting to match terminology used in another has become increasingly cumbersome.

From a technological perspective, significant advances emerging from proprietary and academic research and development have resulted in a wider range of treatment options and best management practices (BMPs) than has ever been accessible to system designers. Technical advancement and industry expansion in decentralized wastewater treatment options have been accompanied by statewide, regional and national educational programs that share research, demonstration and manufacturer literature among a broad group of industry professionals. Inconsistent terminology has not only been a hindrance to evaluation and use of new technology, it has also been a barrier to acceptance of nationally-developed training materials and guidance documents. Local regulators have regularly expressed concern about acceptance of standardized materials because of inconsistency with their local terminology. Inconsistency in the lexicon in published materials has compounded the problem.

Programs aimed at standardizing industry practices have been initiated. The CIDWT was founded upon a mission statement of standardizing training materials across the country. The National Onsite Wastewater Recycling Association (NOWRA) Model Code endorses the use of uniform regulatory parameters and the National Pre-cast Concrete Association (NPCA) recently adopted BMPs for the production of concrete sewage tanks used across the country. The National Environmental Health Association (NEHA) has established a national credential for system installers and the National Association of Wastewater Transporters (NAWT) offers several national certifications for practitioners. The American Society of Testing and Materials

(ASTM) creates standards recognized around the world, including significant information relevant to prefabricated concrete structures used in the decentralized industry.

Increased interaction between and among professional organizations and industry groups has created a critical need for common terminology relative to system siting and design, regulatory permitting and enforcement, component construction and installation, operation, maintenance and monitoring, as well as consumer education. Standardization of terms and definitions will facilitate the continued exchange of information within both the academic and field practitioner realms. The goal of the Glossary portion of this project was to provide the common terminology required for continued and collective advancement of all sectors of the decentralized wastewater treatment field. The writing team pursued this goal by soliciting broad, comprehensive review of terms and definitions throughout the dissemination, review and response phases of the Glossary portion of the project. Direct solicitation of members of the target audience potentially increases the incentive to use the standardized terminology. Nine national industry and professional organizations were selected to assist in the review. Additional reviewers emerged over the course of the project because of awareness created through presentation of papers, website information and general word of mouth and comments from these individuals were considered as well. Because of the significant contributions of the reviewers, the resulting document is detailed and comprehensive, incorporating significant cross-references and fifty diagrams.

The glossary terminology will be incorporated into the industry over time. The water quality glossaries developed during the 1960's and 70's provided sources for standardized terminology for the field of water quality. Subsequent text books, technical papers and regulations used sources from this era to describe processes, products, design, operation, maintenance and monitoring practices. Because of the nature of its growth and development, practitioners in the decentralized wastewater treatment field incorporated localized/regional terminology into their guidance and regulatory documents. Therefore, acceptance and assimilation of this glossary will occur over time as the terminology and definitions are integrated into these local documents and used by field professionals.

1.1.2 Building capacity

As interaction among practitioners has expanded to include a national perspective, personnel in the field have regularly expressed their desire for more consistency in training and education. Directors of training entities (programs or centers with varying financial and administrative structures) around the country strive to deliver this instruction; however, concern is often expressed regarding the considerable time and effort required to continually develop high-quality materials to address the demand. Once the materials are available it is vital that they be delivered to the target audience in a consistent and effective manner. This is the two-fold challenge of building capacity in the realm of practitioner training and education, and the Train-the-Trainer concept addresses it directly.

The CIDWT first implemented Train-the-Trainer Academies during the National O&M Service Provider Program Project (Lesikar et al., 2005). After the project was completed, CIDWT continued to conduct the events independently to meet continuing demand for qualified instructors and training on the critical topic of operation and maintenance. In conjunction with the current project, CIDWT conducted another O&M Train-the-Trainer event in April 2006 in

response to continued requests by instructors. Additionally, the group took the opportunity to create and deliver a fundamental workshop (Effective Training Academy) focused on the use of the Practitioner and University Curriculum materials developed under previous projects (Lindbo et al., 2005; Gross et al., 2005). The second academy was conducted in August 2006 and provided an opportunity to guide the use of these technology-based materials in a structured setting.

The logistics for and outcomes of these Academies are more fully described in Chapter 3.0.

1.2 Objectives of and Materials Generated from the Glossary and Train-the-Trainer Project

The objectives of this project were to: promote standardized terminology relative to system siting and design, regulatory permitting and enforcement, component construction and installation, operation, maintenance and monitoring, as well as consumer education; encourage uniform communication among various sectors and between those sectors and the public; increase national training and education capacity, and; teach persons who provide training and education how to efficiently develop and deliver programs to their constituents.

The materials generated through this project include:

- A glossary of decentralized wastewater treatment terminology;
- National O&M Service Provider Train-the-Trainer Academy and associated materials;
- Effective Training Academy and associated materials; and
- Final report.

1.3 Characteristics of the Target Audience

The target audience for the Glossary was professionals who make a living in the decentralized wastewater treatment field. The nature and extent of their education and experience was widely variable. Some may be required to maintain one or more certifications or licenses. These professionals interact with each other on a regular basis. Most, if not all also interact with the general public on one or more levels. System owners were thus considered a critical target audience since terminology emerging from this project was equally important to the consumer. Essentially, the audience was defined as any person or group with a need for information on decentralized wastewater treatment, including:

- Local, regional and state government officials,
- Land-use planners,
- Regulatory personnel,
- Site evaluators, including soil scientists,
- System designers, including engineers,
- Installation contractors,
- Operation and maintenance service providers,
- System inspectors,
- Real estate agents,

- Training and education program coordinators and instructors, and
- System owners.

The target audience for the Train-the-Trainer portion of the project included personnel who train practitioners in subject matter related to decentralized wastewater treatment. They may also develop and deliver educational resources to the general public. This audience might be expected to exhibit more uniformity of education and experience than that discussed for the Glossary. However, training and education on decentralized wastewater treatment topics is no longer confined to the academic realm. Although Extension personnel at Land Grant/Sea Grant institutions are a prevalent force in outreach education and training, there are significant numbers of non-academics who regularly deliver programs. Trade organizations that conduct training enlist their members (possibly persons with extensive field experience but little or no instructional expertise) as lecturers. Alternatively, private sector companies such as manufacturers may provide training to new employees using personnel who have extensive technical knowledge and a certain amount of instructional expertise, but little or no field experience. This variation does not diminish the potential value of the training or the instructor, by any means. It does, however, underscore the significance of "training the trainer", not only to promote consistency, but to foster communication across a broad array of professional disciplines.

Examples of the target audiences for Train-the-Trainer Academies included: training program coordinators and associated instructors; faculty at academic institutions with wastewater treatment curricula; private sector entities; professional trade organizations; Extension personnel with outreach education responsibilities, and; licensing and certification entities. It is important to note that wastewater treatment professionals are often current or former members of more than one of these groups. The nature of their interaction necessarily defines the status of the field itself, thus underscoring the potential value of effective communication among them.

1.4   Use of Project Materials

The Glossary that will be posted at the conclusion of the project is intended for immediate use. Ideally, practitioners from all sectors will reference it on a daily basis: regulatory agencies and professional organizations will consult the Glossary (or adopt it by reference) in the course of developing rules, guidance documents and training materials; system designers will adopt the terminology for use in plans and specifications for system installation, startup, operation and maintenance activities. Overall, widespread use is anticipated and should lead to frequent discussion of the terms and definitions. On this basis, the document will continue to evolve through common application. The document has been and will continue to be available to the general public through the CIDWT website in PDF format. There was no financial mechanism for continued funding after the conclusion of this project. However, if additional support is identified and secured, the document could potentially be posted in a more user-friendly format. The scenario might also facilitate a formal process to solicit, collect and address comments from users. Publication of hard copies could potentially occur in the future.

Train-the-Trainer Academies have an expressed purpose of developing capacity. The persons who attended the first Academy (O&M Service Provider Program Train-the-Trainer) conducted in conjunction with this project have returned to their respective home bases and are training Service Providers on a regular basis. Responses on program evaluations from that

Academy (included in Appendix B) indicated that participants anticipated training more than 900 practitioners per year. A survey conducted after the Academy revealed that those who responded had actually trained more than 1800 practitioners during 2006. Those who attended the second Academy (Effective Training) are now armed with new or improved skills with which they can create or refine the courses necessary to train their constituency. Elements of the course developed during the Effective Training Academy were already in use across the country at this writing.

The impact of both portions of this project has already been seen on many levels across the country:

- State agencies (Arizona, Florida, Minnesota, and North Carolina) have consulted the Glossary in the process of writing rules and regulations.
- NOWRA regularly cites the Glossary as their preferred choice for terms and definitions;
- The American Society of Testing and Materials (ASTM) are in the process of considering the document in their standard for prefabricated concrete structures.
- As a result of input from a trainer who attended the Raleigh Train-the-Trainer event, the state of Florida is considering the O&M Service Provider Program as their official training program for practitioners.
- Trainers in the state of Kansas report significant changes in state codes as a result of the use of the O&M Service provider programs. Prior to use of the program, the state had only minimal guidelines for decentralized wastewater treatment but has now established codes for system management in most counties.

Members of the CIDWT have conducted workshops using the National O&M Service Provider Program materials. They regularly communicate with one another regarding future state- or regional-level Operation and Maintenance workshops that can also serve as venues for Train-the-Trainer events. This is achieved by delivering Train-the-Trainer segments in conjunction with or subsequent to scheduled events. Although these are not a formal component of this project, such activities represent an outgrowth of this and previous projects and are indicative of the cooperative commitment of the organization. Current CIDWT projects adhere strictly to the terms and definitions included in the Glossary and future efforts will follow suit. As CIDWT continues to pursue the development and dissemination of broad, comprehensive, peer-reviewed training and education materials, increasing numbers of practitioners will be exposed to standardized terminology. CIDWT's MOU partners will play a key role in expanding the use and exposure of the Glossary through cooperative efforts in support of the partners' mission statement.

GLOSSARY DEVELOPMENT PROCESS

2.1   Origin of the Glossary

The original draft of the Glossary emerged from the CIDWT Practitioner and University Curriculum development projects (Lindbo et al., 2005; Gross et al., 2005). In order to complete those projects, the writing teams were compelled to consider conflicting terms and designate particular usage within the context of the materials development process. The need for a glossary to facilitate completion of those projects became apparent and volunteers began an unfunded effort to create a glossary with descriptors for various technologies and component functions, as well as parameters for design and operation.   The group identified and gathered industry and educational source glossaries to begin the effort. Several of these sources (most notably, that compiled by Tibor Banathy of California State University at Chico) might be expected to serve the needs of the decentralized wastewater treatment field; however none were comprehensive or nationally-focused. After compilation of a list of terms with multiple definitions, the group worked to identify the one best choice. The resulting document served as a reference to complete the Curriculum projects and was posted on the CIDWT website until it became the starting point for this project.

2.2   Nature of the Writing Team

The writing team included persons from academic institutions who are members of the CIDWT. The CIDWT is a non-profit educational organization dedicated to research, teaching, technology transfer, training and outreach education to students and practitioners in the decentralized wastewater field. Members include sixteen educational institutions (many of them Land Grant / Sea Grant universities or colleges) twelve training entities and several industry/ advisory delegates throughout North America that have conducted premiere work in the onsite and decentralized wastewater fields for over thirty years. Most existing decentralized wastewater training centers and programs in the United States and Canada are members of the CIDWT and participate in training and capacity-building (train-the-trainer) programs on a regular basis.

The team was composed of individuals from geographically diverse areas who are familiar with a wide array of decentralized technologies and applications. Members from Arizona, Minnesota, Missouri, North Carolina, Rhode Island, Tennessee and Texas have active training programs and have participated in the development of both the National O&M Service Provider Program (Lesikar et al., 2005), the Model Decentralized Wastewater Practitioner Curriculum project (Lindbo et al., 2005) and the University Curriculum Development for Decentralized Wastewater Management project (Gross et al., 2005). The majority of the team participated in the development of the unofficial version of the Glossary during the curriculum projects. Their expertise encompasses a wide range of disciplines, including engineering, soil science, operation, maintenance and monitoring as well as regulatory permitting and enforcement. The writing included the following individuals:

Bruce Lesikar, PhD, PE; *Texas Cooperative Extension* (Principal Investigator)

Nancy Deal, MS, REHS; *North Carolina State University* (Project Manager)

John Buchanan, PhD, PE; *University of Tennessee*

Kitt Farrell-Poe, PhD; *University of Arizona*

Dave Gustafson, PE; U*niversity of Minnesota*

David Kalen, MS; *University of Rhode Island*

David Lindbo, PhD, LSS; *North Carolina State University*

George Loomis, MS; *University of Rhode Island*

Randall Miles, PhD; *University of Missouri*

2.3   Nature of the Peer Review Process

Because of CIDWT's strong belief in broad, comprehensive peer review, it was critical to solicit input from all types of practitioners in the field of decentralized wastewater treatment. Nine national industry and professional organizations were selected to participate in the review and a contact person for each organization was identified. The Project Manager (PM) secured a commitment from the contact person for each organization to distribute the document to their constituents and establish a repository for their comments. These would then be forwarded to the PM and subsequently to the writing team. The PM regularly emailed or called the responsible party to ascertain the status of the review process. Lists of organizations and individuals who reviewed the Glossary are included in Tables 2-1 and 2-2. Table 2-1 indicates what industry sector or sectors was represented by members of a particular organization and Table 2-2 provides similar information for individual reviewers to illustrate the breadth of stakeholder review.

Table 2-1. National stakeholder organizations and industry sector representation

Acronym	Organization	Industry sector representation
ASCE	American Society of Civil Engineers	Engineering, Design
NAWT	National Association of Wastewater Transporters	Service, Education
NEHA	National Environmental Health Association	Environmental Health, Training, Certification
NOWRA	National Onsite Wastewater Recycling Association	Manufacturing, Design, Regulation
NPCA	National Precast Concrete Association	Manufacturing, Installation
SORA	State Onsite Regulators Alliance	Regulation, Permitting, Enforcement
SSSA	Soil Science Society of America	Research, Soil and Site evaluation
WEF	Water Environment Federation	Design, Management
WOSSA	Washington On-site Sewage Association	Manufacturing, Installation, Management

Table 2-2. Individual Glossary reviewers and industry sector affiliation

Reviewer Name	Reviewer Affiliation	Regulatory	Engineering	Design	Land Use Planning	O&M	Soil Science	Installation	Manufacturing	Education/Training
James Anderson	University of Minnesota						X			X
Gene Bassett	E.C. Bassett Construction, Inc.					X		X		
Allison Blodig	Biomicrobics, Inc.								X	
Gary Buttermore	Nebraska Department of Environmental Quality	X	X							
Matt Byers	Zoeller Co. Inc.								X	
Paul Chase	State Onsite Regulators Alliance									
Edward J. Corriveau	Penna. Department of Environmental Protection	X	X							
Victor D'Amato	ARCADIS, Inc.		X	X						
Kenneth R. Davis	Coastal Plains Environmental Group			X		X	X			X
Stephen Dix	Septic Solutions, LLC		X							
Tom Ferrero	NAWT					X				X
Mark Hooks	Florida Dept. of Health	X					X			X
Janet Hygnstrom	University of Nebraska			X						X
Terrell Jones	NC DENR Onsite Wastewater Section	X								
Daniel Larubio	Southern Nevada Health District	X								
Robert E. Lee	Loudoun County (VA) Health Department	X	X	X						
Robert B. Mayer	American Manufacturing								X	
John McCray	Colorado School of Mines		X	X						X
Del Mokma	Michigan State University						X			
Janet Murray	Missouri Small Flows Organization	X								X
Brent Parker	Iowa Department of Natural Resources	X								
Christl Pokorney	National Environmental Health Association									X
Morgan Powell	Kansas State Univ. Research and Extension		X							X
Barbara Rich	Deschutes Co. (OR) Environmental Health Div.	X			X					X
Dennis Sievers	University of Missouri		X							X
Tony Smithson	Lake County (Il) Environmental Health	X								X
Shanin Speas-Frost	Florida Dept. of Environmental Protection	X								
Bill Stuth, Sr.	Aqua Test, Inc.			X		X		X	X	X
Theo B. Terry, III	Ring Industrial Group								X	
John Thomas	Washington On-site Sewage Association									X
Jerry Tyler	University of Wisconsin (Ret.)						X			
Dan Wellington	City or Bangor, ME	X			X					
Dave Wilson	David R. Wilson, P.E.		X			X	X			
TOTAL PER SECTOR:		**12**	**9**	**6**	**3**	**5**	**5**	**2**	**5**	**13**

Organizational contacts solicited input directly from their members, compiled comments into one file and forwarded it to the PM. Individual reviewers downloaded the document from the website, inserted comments and forwarded the information to the PM via hard copy.

To promote open discussion of terms and definitions, two review workshops were held in conjunction with the NOWRA Annual Technical Education Conferences in Denver (August, 2006) and Baltimore (March, 2007).

2.4   Review and Refinement of the Glossary

The writers first met in Laughlin, NV in January 2006 to establish a starting point for the project. Using the original CIDWT document, the team began an intensive appraisal of each definition. During this meeting and over the course of the project the group revisited the original sources (Arizona DEQ, 2001; Banathy, 2002; Brady, 1974; Burks and Minnis, 1994; Crites and Tchobanoglous, 1998; Eaton et al., 1995; Harrison, 1997; Hoover et al., 1996; Kahn et al., 2000; Martin et al., 1996; Neufeldt, 1988; Senese, 2001; Symons et al., 2000; Trotta et al., 2000; and US EPA, 2000;) as well as many fresh sources (CIDWT, 2006; Eaton et al., 2005; Happe, 2006; Harrison and McGowan, 2000; Lesikar et al., 2005; Schoenberger et al., 2002; SSSA, 2007; and WEF, 2007). The resulting document was posted on the website on April 21, 2006, and the contacts were notified that the glossary was available for the Phase I review.   As comments on the Phase I document were received, they were integrated into a master file as tracked changes.

The deadline for return of Phase I comments was set for August 14, 2006, to allow the team sufficient time to formulate the agenda for the Denver Review Workshop (conducted at the end of August in conjunction with the 15th NOWRA Annual Technical Education Conference and Exhibition) based upon the general nature of the feedback received. The meeting agenda thus included discussions of fundamental terms related to *system types, blackwater/graywater separation* and *treatment standards.* The tone of the review meeting was positive, and all present placed a high value on the face-to-face interaction. After the workshop, the writing team conducted thirteen separate data conferences (telephone conference calls with a synchronized web connection to view the document as it was revised) to address the Phase I review comments. Simultaneous consideration of groups of related terms promoted consistency and guided the overall effort. After groups of terms were reviewed, the writers read and discussed each term and definition to address comments received on individual terms. After discussing the merit of each comment, the group made a collective decision to either: 1. accept the comment as stated, 2. modify and accept the comment, 3. reject the comment with cause or, 4. defer discussion until a later time. Discussion was sometimes deferred to allow participation of more team members with specialized expertise germane to the topic. Revisions were completed and the resulting Glossary was again posted to the CIDWT website on December 1, 2006, with a deadline of February 14, 2007 for return of comments. Again, the date was established to allow assessment of the general nature of comments in preparation for the second review workshop conducted in Baltimore on March 11, 2007 in conjunction with the 16th NOWRA Annual Technical Education Conference and Exhibition. While this workshop was not as well attended as the first, the total volume of comments received during the second phase of review was equal to that of the first.

Over the course of the project, the team continued to utilize data conferences to refine the glossary. The process allowed participants in remote locations to discuss terms while viewing the same document on-line and in real time as it was being edited. In addition to the thirteen calls addressing comments on the first draft, eleven more were conducted to review the second draft. Discussion of terms and topics were again deferred whenever appropriate and the reason behind each decision was documented. While the process sounds straightforward, it included significant

amounts of digression and regression as the group endeavored to maintain the broadest possible view of the document. Although technical comments typically generated the most discussion and resulted in significant revisions to multiple terms, all remarks were addressed to the fullest extent possible. Applicable terms and definitions from the NAWT, SSSA and WEF glossaries were incorporated verbatim or with minor revision.

Face-to-face writing team meetings were conducted at various stages of the project. In addition to the initial project meeting in Laughlin NV in early 2006, meetings were held prior to or after the Review Workshops and in conjunction with both Train-the-Trainer events. Whenever significant numbers of the writers traveled to national conferences, the project group conducted meetings to continue to respond to comments, review diagrams and incorporate changes to materials.

Comments on the usefulness of the Glossary received during the first phase of review exhibited a significant amount of variability. Members of a given organization expressed widely differing opinions ranging from "a waste of time and effort" to "extremely valuable to professionals in the industry…" As the project moved forward positive feedback was the rule and not the exception.

2.5 Incorporation of Terminology for the Installer Training Program Project

Near the conclusion of the Glossary and Train-the-Trainer project, the CIDWT began development of the Installer Training Program with grant funding from EPA through WERF. During the early stages of the new project, the writing and review team identified fifteen pages of terms and definitions critical to proper system installation, including terms related to construction safety and surveying. A decision was made to add this terminology to the Glossary. To gather, write and refine definitions for these terms, the team consulted several new sources. The Contractor's Glossary of Terms (2007) and Dictionary.com (2007) were valuable internet sources for definitions of colloquial terms. Sources with information on surveying (McCormac, 1983), architecture (McGraw-Hill, Inc., 2003) and oceanographic data (Hicks, 1999) were also consulted. United States Department of Labor OSHA terminology (USDOL, 2007) related to excavation safety was incorporated verbatim.

TRAIN-THE-TRAINER ACADEMIES

To meet the significant challenge of building capacity for training and education, the writing team conducted two Train-the-Trainer Academies during the project. These workshops attracted personnel from the primary training network that serves practitioners across the country (i.e., personnel from both academic institutions and professional associations who regularly deliver training on the state, regional and national level).

The core materials used in the Train-the-Trainer Academies was subject to peer review over the course of their original development. Subsequent refinement was performed to the extent allowed with CIDWT member support and was not considered a part of the currently funded effort.

A description of the Academies follows.

3.1   National O&M Service Provider Program Train-the-Trainer Academy

Continued high demand for the O&M Service Provider Program prompted a decision to designate those materials as the focus of the first Train-the-Trainer event. Academy I was conducted in Raleigh, NC from April 26-28, 2006. The brochure announcing this Academy is included in Appendix A.

The nature of the O&M Service Provider Program (Lesikar et al., 2006) is such that the agenda and materials are modular. This not only facilitated presentation to a variety of target audiences with a range of expertise or a need for training on particular technologies, it also provided flexibility in the presentation of the associated Train-the-Trainer Academy. The core program can be conducted with or without the Train-the-Trainer component. For combined events (for both practitioners and potential instructors) the full complement of topical slides addressing operation and maintenance was presented to the entire audience. A subsequent day of instruction was then conducted solely for those who would eventually deliver the materials *as instructors*. If an event was conducted for an audience consisting of *only* potential instructors, the Train-the-Trainer components were integrated into the main agenda since the audience typically had reasonable experience on the core topics of the program. The Raleigh Academy was conducted in accordance with the latter scenario since all those registered were potential instructors. The agenda for the event is included in Appendix A. In many cases, the core presentations were abbreviated and incorporated specific information on effective delivery. For example, in addition to presenting specific information on O&M for a given component, instructors provided insight on key elements that should be emphasized and questions that might be anticipated. This type of supplemental information was gathered by the writing team over the course of materials development (five pilot training events) and subsequent use of the final materials at various venues.

The topic of *Parking Lot Questions* at the conclusion of the Academy agenda refers to a list of audience questions compiled over the course of the training event but deferred until the

conclusion. This method of capturing important issues but deferring discussion emerged during the pilot testing and practitioner review phases of the O&M Service Provider Program project. For example, questions about design issues often arose in the course of presenting the operation and maintenance topics. It often made sense to defer such questions to facilitate the flow of an agenda without ignoring specific audience queries. This approach has become integral to CIDWT training events and ensures a higher level of participation among attendees.

Attendees received the following materials in conjunction with their attendance:
1. An electronic copy of the O&M Service Provider Program slide presentations in an adaptable format
2. A printed handout of the slide presentations on which to take notes
3. A copy of the manual *Residential Onsite Wastewater Treatment Systems: An Operation and Maintenance Service Provider Program* (CIDWT, 2006)
4. An Instructor's Guide with general information on training programs as well as information specific to the O&M Service Provider Program (e.g., guidance on adapting the agenda according to time constraints, presentation with or without a training center, or adjusting content on the basis of available time).

Thirteen participants attended the Academy, representing eight different states (California, Florida, Kansas, Maryland, Missouri, North Carolina, Texas and Virginia). Attendees projected that they would train approximately 900 service providers in the coming year using the materials and knowledge gained during the Academy. Without exception, attendees indicated that attendance at the Academy would improve their effectiveness as trainers. All felt better prepared to train O&M Service providers either because they now had a comprehensive set of organized materials and/or because they learned new teaching methods during the Academy. A majority of participants said they viewed the cost of attendance as a good investment. Most indicated that had gained a better understanding of the need for Train-the-Trainer events and a greater appreciation of their value. A summary of pre-academy questionnaires and post-academy program evaluations is included in Appendix B.

Follow-up questionnaires were sent to attendees to inquire about subsequent events conducted by them, numbers of practitioners trained and other supplemental feedback. Results from these surveys indicated that over 1800 practitioners (more than twice the predicted figure) were trained by Raleigh Academy participants during 20 events conducted in the year 2006. (The results of the survey are provided in Appendix B and include information gathered from trainers who attended previous O&M Service Provider Train-the-Trainer Academies: figures in the previous sentence only reflect numbers reported by those who attended the Raleigh event.) Supplemental feedback indicated that the materials were (in some cases) successfully modified for regional use according to the original intent of the O&M Service Provider Program Project.

3.2   Effective Training Academy

The Effective Training Academy was conducted on February 9 and 10, 2007 in Nashville, Tennessee. The brochure announcing this Academy is included in Appendix A. Seventeen persons registered for and attended the academy and six writing team members were present. In addition to the inherent interaction implied by the moniker "Academy", the philosophy of this event included these elements: 1. Present broadly applicable information on training tools and instructional methods; and 2. Guide the development of a one-day workshop entitled *Overview of Wastewater Treatment* using the Practitioner and University Curriculum

materials as a starting point. Through the modules conducted at the workshop, students developed 6 segments for the workshop:

1. Evolution of Wastewater (provided by the instructors)
2. Introduction to Wastewater
3. Soils and Site Considerations
4. Pretreatment
5. Soil Treatment Areas
6. Distribution

The Agenda (Appendix A) for the first day of the Academy included topical presentations on the *process* of developing training materials, including developing a philosophy for training events; writing learning objectives; creating outlines from learning objectives; and creating slide presentations from outlines. The class was then divided into small groups which were given the task of developing one of five segments of the workshop, including learning objectives, a slide presentation and exam questions. Under the direction of the writing team, the groups proceeded to develop the learning objectives for their chapter.

On the second day, the class began by focusing on the critical subject of *effective delivery* of programs. This began with a discussion of tools for use in training environments, including the effective use of video, slides and hands-on displays. This was followed with a discussion on how to build a team of effective instructors by identifying speaker training styles and capitalizing on speaker strengths. The small group exercise continued with the development of slide presentations for the workshop segments and exam questions were developed in conjunction with the other materials. The Academy concluded as each group identified a spokesperson to present their list of learning objectives and a portion of their draft slide show. The speakers subsequently received feedback on the effectiveness of their delivery.

Although the Academy technically adjourned at this point, the groups were assigned the task of completing the development process remotely and posting the completed materials on the CIDWT website. The Academy thus allowed the class to fully experience the curriculum development process as it occurs on the national level.

Attendees received the following materials in conjunction with their attendance:

1. An electronic copy of the *Model Decentralized Wastewater Practitioner Curriculum* (Lindbo and Deal, 2005) and the *University Curriculum Development for Decentralized Wastewater Management* (Gross and Deal, 2005) slide presentations in an adaptable format

2. A printed handout of the slide presentations on which to take notes

3. An Instructor's Guide with general information on training programs (a revised and expanded version of the Guide developed for the O&M Train-the-Trainer events)

Because those in attendance had a broad range and depth of expertise, the group interaction contributed to the overall experience. Responses were collected via a detailed program evaluation questionnaire and indicated that participants viewed the academy as extremely valuable. A summary of the evaluations is included in Appendix B. The materials for the six-hour course are now posted on the CIDWT website for use by the authors and other interested parties.

CHAPTER 4.0

PROJECT AWARENESS AND DISSEMINATION

4.1 Nature of Activities

This project was advertised using the CIDWT website, presentations at conferences across the country, articles and papers, brochures for Train-the-Trainer Academies, communication with EPA MOU partners and through word of mouth.

4.1.1 Use of CIDWT Website

The CIDWT website is an interactive, dynamic site that serves many purposes. It is used as a public communication center for those seeking information regarding onsite/decentralized wastewater treatment. CIDWT members use the site as a contact center. CIDWT committees use the site to discuss current issues and working groups communicate via this forum as they focus on various tasks. CIDWT member institutions regularly list and update training program schedules and research information. Finally, the site serves as a repository and delivery mechanism for training materials produced under CIDWT projects. Training entities from as far away as New Zealand and South Africa have accessed and downloaded resources from the site and placed orders for curriculum materials.

During the current project, the website was specifically used to post daily or weekly updated versions of the Glossary and associated diagrams for access by the writing team. The current version of the Glossary was posted for access by individual and organizational reviewers. Information regarding Train-the-Trainer Academies was disseminated through the website and materials developed by Academy participants was posted and shared among writers and reviewers.

4.1.2 Presentations (listed chronologically)

1. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. 2006. Speaking the same language: The CIDWT Glossary Project. Presented at the 15th Annual Wastewater Recycling Association Annual Technical Education Conference and Exhibition, August 31, 2006. Denver, CO.
2. Deal, N. and B.J. Lesikar. 2006. CIDWT Glossary and Training Programs, WEFTEC, 79th Annual Technical Exhibition and Conference, Water Environment Federation, October 21, 2006, Dallas, TX.
3. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. 2007. Speaking the Same Language: The CIDWT Glossary Project. Presented at the State Onsite Regulators Alliance and Captains of Industry Conference, March 27, 2007, Reno, NV.
4. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. 2007. Speaking the Same Language: The CIDWT Glossary Project. Presented at the 16th Annual Wastewater Recycling Association Annual Technical Education Conference and Exhibition, March 10, 2007. Baltimore, MD.

5. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. 2007. Speaking the Same Language: The CIDWT Glossary Project. Presented at the 23rd Annual NC Onsite Conference, April 25, 2007.
6. Deal, N. J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. 2007. Speaking the same language: A glossary for the decentralized wastewater treatment field. 11th National Symposium on Individual and Small Community Sewage Systems. October 21-24, 2007 Warwick, RI.

4.1.3 Articles and Papers

1. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. 2006. Speaking the same language: The CIDWT glossary project. *Proceedings of the NOWRA 15th Annual Technical Education Conference and Exhibition,* CD-ROM. Edgewater, MD. NOWRA.
2. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. 2007. Speaking the same language: An update on the CIDWT glossary project. *Proceedings of the NOWRA 16th Annual Technical Education Conference Proceedings,* CD-ROM. Edgewater, MD. NOWRA.
3. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. Speaking the same language: An update on the CIDWT glossary project. 2007. *Proceedings of the North Carolina 23rd Annual Onsite Wastewater Treatment Conference,* CD-ROM. D.L. Lindbo, ed. Raleigh, NC. NC State University. 2007.
4. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. Speaking the Same Language: An Update on the CIDWT Glossary Project. *Small Flows Magazine*: 8(1):4-5.
5. Deal, N., J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, and R. Miles. 2007. Speaking the Same Language: An Update on the CIDWT Glossary Project. National Environmental Health Association Journal of Environmental Health. 70(1):70.
6. Farrell-Poe, K. and N. Deal. 2007. Speaking the Same Language. *Onsite Water Treatment*. 2(4): 64-65.
7. Deal, N. J. Buchanan, K. Farrell-Poe, M. Gross, D. Gustafson, D. Kalen, B. Lesikar, D. Lindbo, G. Loomis, J. Mechell, R. Miles, and C. O'Neill. 2007. Speaking the same language: A glossary for the decentralized wastewater treatment field. *Proceedings of the 11th National Symposium on Individual and Small Community Sewage Systems.* St. Joseph, MI: ASABE.

4.1.4 Distribution of Informational Brochures for Train-the-Trainer Academies

1. Direct mail and Web posting:
   a. CIDWT National O&M Service Provider Program Train-the-Trainer Academy, April 26-28, 2006, Raleigh NC.
   b. CIDWT Effective Training Academy, February 9-10, 2007, Nashville, TN.
2. Brochure distribution:

a. Missouri SmallFlows Organization (MSO) Conference and Trade Show, January 23-24, 2007, Columbia, MO.
b. Direct mailing to Missouri SmallFlows Organization (MSO) Board of Directors, January, 2007.
c. NOWRA 16th Annual Technical Education Conference and Exhibition, March 13-14, 2007, Baltimore, MD.
d. State Onsite Regulators Alliance and Captains of Industry Conference March 25-28, 2007, Reno, NV.
e. 22nd North Carolina Annual Onsite Wastewater Treatment Conference, April 24-26, 2006, Raleigh, NC.
f. 23rd Annual North Carolina Onsite Wastewater Treatment Conference, April 23-24, 2007, Raleigh, NC.

4.1.5 Communication with EPA MOU Partners

Many of the EPA MOU partners (NAWT, NEHA, NOWRA and WEF) were designated organizational reviewers for the Glossary and were thus active participants in the process of its development and refinement. The Glossary includes many verbatim terms and definitions from both NAWT and WEF glossaries. NOWRA was the host organization for both of the Review Workshops conducted during the project and Small Flows SORA / Captains of Industry Conference in 2007 provided a venue to present the Glossary project directly to an audience composed primarily of regulatory personnel.

CIDWT representatives participated in monthly conference calls and annual meetings of the EPA MOU Partners. The participants were provided updates on the material development status during these meetings. Several of the EPA MOU Partners received copies of the glossary during the two national distributions for comment.

APPENDICES

APPENDIX A
BROCHURES AND AGENDAS FOR CIDWT TRAIN-THE-TRAINER ACADEMIES

CIDWT Presents
NATIONAL OPERATION & MAINTENANCE SERVICE PROVIDER PROGRAM
TRAIN-THE-TRAINER ACADEMY
Raleigh, North Carolina
April 26-28, 2006

Delegates of member institutions of the Consortium of Institutes for Decentralized Wastewater Treatment (CIDWT) are invited to participate in the second Train-the-Trainer Academy for the National Operation and Maintenance Service Provider Program. This Academy is designed to present nationally reviewed, standardized training materials to instructors and assist them in sharpening their training skills. Participants will learn the most effective way to present the materials to O&M service providers in their respective areas. The program will include three days of classroom and field instruction by members of the project writing team.

As part of the registration package, participants will receive:

- A hard copy of the course manual that provides details on onsite wastewater treatment technologies and thorough instructions on the use of the component-based Operational Checklists that comprise the core of the O&M Service Provider Program.
- A detailed instructor's guide that includes valuable information on developing a training program, planning and conducting a workshop, advice on continuing education, sample homework and exam questions as well as a comprehensive list of training resources.
- A CD ROM of educational materials that provides a complete set of component-based PowerPoint® presentations (with detailed speaker notes) as well as the entire set of Operational Checklists.

NOTE: Registration is limited to delegates of CIDWT member institutions. Attendance at a CIDWT Train-the-Trainer Academy is required before the National O&M Service Provider Program materials can be used for training.

Workshop: O&M Service Provider Program Train-the-Trainer Academy

Dates: April 26-28, 2006

Location: NC Land Application Training Center
Lake Wheeler Road, Raleigh, NC
For directions, visit: http://www.soil.ncsu.edu/swetc/maps/latdc_files/latdf_map.pdf

Accommodations: Hampton Inn & Suites Raleigh-Cary I-40 (RBC Center)
111 Hampton Woods Lane, Raleigh, North Carolina, 27607
Tel: 919-233-1798 Fax: 919-854-1166 http://www.hamptoninn.com/
Refer to "**NCSU Wastewater**" to receive state room rate of $79.00/night
(One king or two double) plus daily breakfast.
Deadline to make reservations at discounted rate: April 10, 2006

O&M Service Provider Program Train-the-Trainer Academy
REGISTRATION FORM
Deadline for Registration: April 14, 2006

Please provide the following information for each delegate using a separate form:
Name_____ Job Title_____

Street Address_____

City_____State/Province_____

Zip/Postal Code_____

Telephone_____FAX_____

Email _____

CIDWT Member Institution (required):_____

REGISTRATION FEE: $750.00 per person
(Includes all educational materials, midday meals and snacks)

DEADLINE FOR REGISTRATION: April 14, 2006

METHOD OF PAYMENT: *(Payment must accompany registration)*

☐ Check (Payable to Onsite Wastewater-68)
☐ Charge my: ☐ VISA   ☐ MasterCard
Card No._____ Expiration Date_____
Name of cardholder (please print) _____
Signature of cardholder (required) _____
Amount Authorized: $_____

SUBMIT TO: Kay Foster TAMU Special Events Center Operations   P.O. Drawer H-1
College Station, TX 77844
Telephone: (979) 845-7692 FAX: (979) 845-2519

CANCELLATION POLICY:
- Cancellations received prior to April 14: Refund of $500.00
- Cancellation after April 14: No refund.
- Paid registration is transferable to any delegate of a CIDWT member institution.

Agenda
CIDWT O&M Service Provider Train-the-Trainer Workshop
Raleigh, NC
April 26-28, 2006

Wednesday April 26, 2005	**Instructor**
Registration	
Local Welcome	Lindbo
Welcome to TTT • Agenda and Materials • Regarding Questions	Lesikar
Welcome to the O&M Service Provider Program	Loomis
Use of Manual (IG CH 5) • Parameters for use • Copyright • Customizing for Local Use	Lesikar
National O&M Service Provider Program Introduction	Buchanan
BREAK	
Implementing an O&M Service Contract	Gustafson
Business and Industry Ethics	Lesikar
Introduction to Wastewater	Loomis
LUNCH	
Safety	Lindbo
Site Assessment	Lindbo
Math	Deal
BREAK	
Pretreatment Components: Tanks	Gustafson
Pumps and Pump Tanks	Gustafson
Pumps- Demand and Timer Dosed Systems	Gustafson
Adjourn	

Thursday April 27, 2006	Instructor
Use of PowerPoint Presentations	Lindbo

- How to modify
- Necessary Attribution of Source

Pretreatment Components- Advanced: Media Filters Recirculation Ratios	Buchanan

BREAK

Pretreatment Components- Advanced: ATU's	Lesikar

Constructed Wetlands, ET Beds, and Lagoons	Lesikar

LUNCH

Agenda Selection (IG CH 3)	Gustafson

- Key Presentations
- Breaks
- Delivery Options

Final Treatment and Dispersal: Gravity Distribution	Buchanan

BREAK

Final Treatment and Dispersal:	Loomis

Field: Tools of the Trade (IG CH 11)	Bannister

Distribute Homework

Adjourn

Friday, April 28, 2006	**Instructor**
Review Homework • Importance of homework in Training	Deal
Final Treatment and Dispersal: Bottomless Sand Filters, Mounds and Bottomless Peat Filters	Loomis
Pretreatment Components- Advanced: Disinfection	Gustafson
BREAK	
Final Treatment and Dispersal: Drip Distribution	Buchanan
Spray Distribution	Lesikar
Final Treatment and Dispersal: Discharging Systems	Lesikar
System Evaluation	Gustafson & Lesikar
Preparation for Training (IG CH 4)	Gustafson
LUNCH	
Developing a Training Program (IG CH 2)	Loomis
Course Evaluations (IG CH 9)	Loomis
Examination Questions (IG CH 8)	Loomis
Continuing Education (IG CH 10)	Lesikar
Resources (IG CH 12)	Deal
Parking Lot Questions and Discussions	

CONSORTIUM OF INSTITUTES FOR DECENTRALIZED WASTEWATER TREATMENT

~CIDWT

presents
EFFECTIVE TRAINING ACADEMY
Nashville, Tennessee
FEBRUARY 9 & 10, 2007

Delegates of member institutions of the Consortium of Institutes for Decentralized Wastewater Treatment are invited to participate in a Train-the-Trainer Academy. This Academy is designed to showcase nationally reviewed, standardized training materials, present a proven approach to course development and assist instructors in sharpening their training skills. As part of the registration package, participants will receive:

- A detailed instructor's guide that includes valuable information on developing a training program, planning and conducting a workshop, advice on continuing education, as well as a comprehensive list of training resources.
- Two CD's and one DVD of educational modules with component-based PowerPoint® presentations including detailed speaker notes, supporting text files as well as specific instructor's guides for each module:
  - Model Decentralized Wastewater Practitioner Training Curriculum (CD ROM)
  - Water Movement and Treatment in Soil (DVD ROM)
  - University Curriculum for Wastewater Treatment (CD ROM)
- Classroom instruction by experienced trainers and authors of Curriculum Project materials.
- Small group exercises in how to develop an effective training course.

NOTE: Registration is limited to CIDWT members in good standing.

Workshop: CIDWT Effective Training Academy

Dates: February 9 and 10, 2007

Location: Hotel Preston
733 Briley Parkway
Nashville, TN 37217
Phone: 615-361-5900   Toll-free 877-361-5500 FAX: 615-367-4468
For directions, visit: http://www.hotelpreston.com/

Accommodations: Special room rate of $89.00 per night (single or double)
Deadline to make reservations at discounted rate: **January 19, 2006**
Reservation Code: CIDWT

For information on joining CIDWT, please visit this website:

http://www.onsiteconsortium.org

A-6

CIDWT EFFECTIVE TRAINING ACADEMY
REGISTRATION FORM
Deadline for Registration: January 19, 2007

Please provide the following information for each delegate using a separate form:

Name_____ Job Title_____

Street Address_____

City_____State/Province_____

Zip/Postal Code_____

Telephone_____FAX_____

Email _____

CIDWT Member Institution (required):_____

REGISTRATION FEE: $75.00 per person
(Includes all educational materials, midday meals and snacks)

DEADLINE FOR REGISTRATION: January 19, 2007

METHOD OF PAYMENT: *(Payment must accompany registration)*

    ☐ Check (Payable to **Onsite Wastewater**)

    ☐ Charge my: ☐ VISA ☐ MasterCard

    Card No._____ Expiration Date_____

    Name of cardholder (please print) _____

    Signature of cardholder (required) _____

    Amount Authorized: $_____

SUBMIT TO: Kay Sanders
TAMU
P.O. Drawer H-1
College Station, TX 77844
Telephone: (979) 845-7692
FAX: (979) 845-2519

CANCELLATION POLICY:
- Cancellations received prior to January 31: Refund of $60.00
- Cancellation after January 31: No refund but can transfer reservation.
- Paid registration is transferable to any delegate of a CIDWT member institution.

CIDWT Effective Training Academy
Agenda

		Day 1	Instructor
800		Welcome and Program Overview	Lesikar
830		Developing a theme and a philosophy for training events • Identifying the target audience(s) • Specifying the body of knowledge: NTK's	Gustafson
930		How to write clear Learning Objectives	Farrell-Poe
1000		**BREAK**	
1015		Writing Learning Objectives for "Overview of Wastewater Treatment" course	Miles Small Group Exercise
1200		**LUNCH**	
100		Creating outlines from Learning Objectives	Deal
145		From outline to PowerPoint	Small Group Exercise
300		Adjourn and attend Pumper Show	
		Day 2	

800		Training Tools:
		• Effective use of Video in Training Programs
		• Effective use of PowerPoint
		  o What works well: Colors, Fonts and Animation
		  o Presentation techniques
		• Hands-on demonstrations
		  o Scale and full-size
			Lindbo and Loomis

915		Building a Team of Effective Instructors • Training styles • Capitalizing on strengths	Buchanan
945		**BREAK**	
1000		Further development of presentations	Small Group Exercise
1100		Presentation of PowerPoints	
1200		**LUNCH**	
100		Tools for Evaluation of Programs • Creating Evaluation forms • Writing Exam Questions Using Pre- and Post-tests	Farrell-Poe
200		Choosing, Creating and Using Evaluation Tools	Small Group Exercise
330		Wrap up and Adjourn	

A-8

PROGRAM EVALUATION SUMMARIES FOR CIDWT TRAIN-THE-TRAINER ACADEMIES

CIDWT NATIONAL O&M SERVICE PROVIDER TRAIN-THE-TRAINER ACADEMY RALEIGH, NC - APRIL 2006

Pre-Academy Questionnaire

What are your expectations for this program?
- To enable greater number of (?) to do a better job in taking care of system, Help our system work better for longer period of time. (Lenning)
- High. (Miles)
- Broaden knowledge base on practices and train to train where we can expand O&M in the industry. (Bannister)
- Learn, Learn, Learn (Snowden)
- Learn different teaching approaches, Learn major objectives. (K. Davis)
- Learn O&M training procedures. (Boris)
- To be trained to train O&M providers for MD's by Restoration program (Glotfelty)
- Receive training materials and training skills to train service providers in our state. (Olson)
- Ability to add a new dimension to our educational program at the training center. (Groover)
- Advanced O&M knowledge to use in designs. (Weigel)
- Learn from others. (Powell)
- Learn the Program and preach it to the masses. (T. Davis)

Indicate how many years of experience you have in the following areas:

Field	Years														N	AVG.
-Practitioner training	5	20	10	5	2	0	3	20	11	6	3	2	15	14	14	8.29
-Operation and Maintenance	15	11	10	17	9	0	1	0	11	6	0	11	0	6	14	6.93
-Undergraduate Education	2	10	20	0	4	0	4	0	5	1	4	4	0	0	14	3.88
-Curriculum develop and educational Methods	3	20	20	5	0	0	1	20	2	6	1	1	29	14	14	8.71
-Other		10							6						14	1.14

Indicate what practitioner training topics you have taught previously:

Topic	Number of group members	N	% of group
None	1	14	7.14
Site Evaluation	9	14	64.29
Design	11	14	78.57
Technology Installation	9	14	64.29
O&M	7	14	50.00
Other	6	14	42.86

Rank your level of field experience in conducting operation and maintenance:

Rating	5	4	3	2	1	0	N	Average
Answer	3	2	5	3	1	0	14	3.21
% of group	21.4	14.3	35.7	21.4	7.1	0.0		

Have you identified a target audience for these training materials?

Yes	No	No Answer	N
12	1	1	14

Indicate whether your State/County/Region requires the following:

	Yes	No	N
Training program for O&M Practitioners	7	7	14
Manufacturer training on proprietary technologies	6	8	14
Maintenance contract on OWTS	11	3	14

How many persons do you expect to train using these materials on an annual basis?

0-49	50-99	100-149	300+	No answer	N
5	2	3	2	2	14

How soon do you expect to implement on O&M Service Provider Training program?

0-3 months	3-6 months	6-12 months	Not Sure	No answer	N
4	4	3	2	1	14

Rank how critical up-to-date educational materials are to your training program:

Rating	5	4	3	2	1	0	N	Average
Answer	10	4	0	0	0	0	14	4.14
% of group	71.43	28.57	0.0	0.0	0.0	0.0		

Rank the relative importance of standardized materials to you training program:

Rating	5	4	3	2	1	0	N	Average
Answer	6	5	3	0	0	0	14	3.79
% of group	42.86	35.71	21.43	0.00	0.00	0.00		

Characterize the educational method(s) to be used for implementation of your O&M Training program:

Method	Number of group members	N	% of group
Classroom lecture	12	14	85.71
Training center with technology displays	4	14	28.57
Equipment/tools of the trade as educational aids	12	14	85.71
Tour of functioning systems during O&M training	7	14	50.00

Program Evaluation

How effective was the program at meeting your expectations?

- Good. To present the materials effectively, interacting with those who designed the program gives good insight.
- Yes. (Boris)
- Very effective. (Miles) (Kenneth Davis)
- Very good.
- Very- Seeing the sight presentations…the text/handout and getting a copy of it was my (?) expectation- hearing it from another perspective added great value. (Lenning)
- Exceeded- did not expect to receive the tools to implement the program. (Groover)
- I appreciated the info about putting trainings together and thinking about $. (Weigel)
- I appreciate that a lot of work has gone into developing and presenting this training. (Powell)

Please rate each class component from 5 to 1 according to its value to you during this training (5=very valuable and 1=less valuable)	5	4	3	2	1	0	N	Average
Viewing O&M Service Provider Training presentations and Operational Checklists:	10	3	0	0	0	0	13	4.77
Viewing Train-the-Trainer presentations:	9	3	0	1	0	0	13	4.54
PowerPoint Handouts:	4	8	1	0	0	0	13	4.00
Field viewing of tools of the trade:	5	1	5	2	0	0	13	2.92

Do you feel you will be a more effective trainer after attending this Academy? Why or Why Not?

- Yes, without attending we wouldn't have been able to use the materials. Never good to have to reinvent the wheel.
- Yes, the instructors were good. However, the ability to interact with other service providers was invaluable considering that O&M is not mandatory in our state on most systems. (Boris)
- 1)More familiar with material and reasons behind the materials importance 2) teaching styles 3) importance of change, flexibility, and planning (Kenneth Davis)
- Understanding the teaching principles
- Yes- better prepared
- Yes, more diverse information and methods (Miles)
- Yes! New perspectives, additional knowledge (Groover)
- Absolutely. I am not a trained "educator" so the mistakes and (?) all of you have found are very beneficial. It was good to see the different styles as well. (Weigel)
- Yes, being instructed by true educators is valuable (Fritts)
- Yes, the training materials will enable me to much more quickly prepare to present this training (Powell)
- Yes-review of presentation materials and the "intent" of certain materials
- Yes- even if my particular program doesn't include some of this, the background is helpful
- Yes- I've added to my tools, knowledge, and training session(s)-i.e. I have added to something I didn't have before. Yes, the (?) and (?) train-the-trainer technique is always

useful. Your knowledge increases due to hearing the perspectives of both the instructional staff and the participants. This was helpful. (Lenning)

Do you feel better prepared to train Operation and Maintenance Service Providers after attending this Academy? Why or Why not?
- Yes. As presenters stepped back and forth between training trainers and actually presenting material as trainers would present it, a visualization of how training will go was perceived.
- Yes (Boris)
- Yes, partly because you introduced me to other practices and technologies not used in my region, but used in my state in other regions. (Kenneth Davis)
- Yes, better understand how to teach
- Yes, very organized materials
- Yes, many new approaches and ways to present current and new materials (Miles)
- Yes, added options to teach that had not been previously considered (Groover)
- Yes, new materials, up-to-date materials, checklists to record the findings. (Lenning)
- Yes, I think the subject matter was basic for me but seeing that gives me confidence in presenting (Weigel)
- Yes-same as above and the extensive slide sets and manual (Fritts)
- Absolutely- great information and power points. The information about planning and conducting training will be very helpful in conducting training. (Powell)
- Yes but not as the person in charge. I'd rather be part of a team

What other IN DEPTH training do you feel you need in order to effectively present the O&M Service Provider Program in your area?
- None
- Design and troubleshooting, the more you know the better (Boris)
- Maybe a class on political correctness and management of particular people (Kenneth Davis)
- Some material toward cluster systems (Miles)
- Practice! (Groover)
- I need to read and study the materials I have received. At this time I do not see how I would benefit from more in depth training. Maybe a presentation about control boxes/ controls. (Powell)
- Inspection procedures
- Not a lot, I'm part of a good team, but it would depend on which pieces I have to teach. I'm weak on things like electricity, chemistry, and people-managing.
- In-depth, troubleshooting, sampling methodology, design steps for site evaluation, mapping to get it down on paper. Mention of specific things- ATUs, media filters; hosts develop local management programs, O&M troubleshooting for non-residential systems. (Lenning)

What was the MOST helpful information presented through this training program?
- Very good teaching guide. Good to hear training pros talk about training techniques
- How to present the material and the need for more visual aids. (Boris)
- Could not pick just one thing (Kenneth Davis)

- Complete presentations and clearly defined. All components are separated as stand-a-lone items. Makes understanding each purpose better.
- All (Miles)
- Program itself- keeps me from reinventing the wheel (Groover)
- Info on training techniques and setup including discussions on money and time required to train and not to expect "face partnerships" to solve money problems. (Weigel)
- Structure and material (Fritts)
- I appreciated info about drip because I am not as familiar with this and also spray irrigation. Hope to work on state agency to change policy about using it for irrigation. (Powell)
- Explaining the intent or purpose of certain slides.
- 1) How to teach this kind of material 2) a way to evaluate systems that is consistent across technologies 3) tactful ways of dealing with interruptions and distractions
- the slide presentations that accompany the text- and seeing photos from around the U.S. (Lenning)

Has this program increased your ability to engage in the following activities?

	Yes	No	NA	N
Identify training needs in your region	10	1	2	13
Create a training program	11	1	1	13
Plan a training event	11	1	1	13
Utilize power point presentations more effectively	9	3	1	13
Develop Continuing Education courses	10	2	1	13

What is your general impression of this training program?
- Effective, efficient, well-planned, comprehensive
- Excellent (Miles)
- Very helpful. Please continue to develop trainings in other areas. (Powell)
- Organized, on time (Fritts)
- Quite good. I think many participants forgot that the material presented for presenting purposes not for emotional experience (Weigel)
- Strong start- glad to see that you feel it is a work in progress (Groover)
- Wish the country was standardized. It should be.
- The fact that credible people taught. This shows that industry experts know the future proliferation of the industry starts at the local O&M operator level. (Boris)
- Very good for the limited scope. The troubleshooting module if it is for the coming would fill in many of the ends left dangling
- Useful, but more for individuals not familiar with the training/education process (Lenning)
- Awesome-about time. (Kenneth Davis)

Was the cost associated with attendance at this Academy a good value to you?

Yes	No	NA	N
11	2	0	13

Why or Why Not?
- Let's see where it takes me
- Yes, expensive but the value received was well worth it (Powell)
- Yes, we all know this stuff is not free (Fritts)
- Personally no but COWA and my ability to present: mixed feelings (Weigel)
- Due to the quality of instructors and materials I would say yes, however, since that was not clear I originally was concerned with the cost. (Groover)
- Yes, I know how much it costs to bring instructors together (Miles)
- Yes, broadened my scope of abilities
- Considering what I learned, in the amount of time, good value.
- I would agree with this. But it will be even better if I can pass most of it along to further knowledge and professionalism in TX. (Kenneth Davis)
- Yes, I didn't pay for it! But, I believe that it was beneficial for those who did. Training is necessary for us get O&M of advanced systems off the ground in our state. This will help us do that.
- For me, the cost was high with travel and registration, in order to gain access to the (?) of this package. These want to many detailed technical learning for me, but it was still useful. (Lenning)

Has your perception of the Train-the-Trainer Academy concept changed since before the class was held?

Yes	No	NA	N
7	5	1	13

Why or Why Not?
- Yes, I was pretty sure it's be worthwhile
- No, Had high expectations coming into the program
- Yes, seeing is believing. Very helpful to see and participate in (Powell)
- Yes, past experience with TTT classes fell far short. My benchmark was low. (Fritts)
- Yes, this was more of an information exchange rather than a rigid certification. (Weigel)
- Yes, much more organized and dedicated to a purpose than I had expected (Groover)
- No, met expectations well
- I had a lot of absorption to so prior to teaching. Since, I had the great opportunity to serve as reviewer. I knew that this class could handle it. I am blessed to be surrounded by so many knowledgeable people. (Kenneth Davis)
- No, the time it takes to develop these materials is very demanding, so to have a base makes it easier to develop local training needs. (Boris)
- While I was excited about seeing colleagues from around the U.S. my attitude honestly has not changed - a lot of money to be able to use materials. But I found it very useful – some additional technical info and different perspectives. (Lenning)
- Yes, better than ever! (Miles)

What would you change (Printed materials, presentations, agenda, overall setup) to improve this Academy?
- No productive comments- I thought it was mostly outstanding. Go after a few typos, etc.--- Add business component

- Add CIDWT glossary to the "Bible"
- Page numbers on slide sets does not match the page in red book. Allow more time for field observation and hands on for things like control boxes. Move Ice cream (Powell)
- Cold beer after lunch! (Fritts)
- Just upgrade with corrections over time (Weigel)
- Comment lines to the side of handouts so I can take notes (Groover)
- Some new photos (Miles)
- Just tweeking- covered some small items in class
- Finish at the time printed and emailed so people can comply with the schedule they set in response to the printed end time (was published as 2:00 and people waited on me to return at 2:00, but I could not)
- Entertainment- have Dave G. and Bruce dance-polka ha! (Kenneth Davis)
- Have more O&M providers teach! They do it so it might have more input (Boris)
- More vegetarian fare at lunch. But really no complaints
- More work on certain diversity in slides, keeping in mind the student…(???)

Where would you recommend that other O&M Service Provider Program Train-the-Trainer Academics be held?
- Anywhere that uses onsite
- Coastal plains states. MO, KS, OK, NE (Powell)
- Various around the country- or Hawaii (Fritts)
- West coast again (Weigel)
- Why Florida of course! (Groover)
- One if the heartland of the country (Miles)
- If at all possible the states training facility (onsite) (Kenneth Davis)
- All over! (Boris)
- Holding it at a training demonstration center is a plus.

Would you recommend this program to other trainers?

Yes	No	NA	N
12	0	1	13

Do you feel that the field component of the O&M Service Provider Train-the- Trainer Academy is critical to the success of this training event?

Yes	No	NA	N
5	4	4	13

May we use your comments in a future brochure, If so, please print your name:
- Morgan Powell
- Tom Fritts
- Nick Weigel, III
- Dave Lenning
- R.L. Groover
- R. Miles
- Kenneth Davis
- John Boris

Include your testimonial here, if desired.
- Breath of fresh air to stay on schedule, on track, on topic, whatever, over this breadth of material
- Minor typo: please change my company name on cover page to: Coastal Plains Environmental Group
- My goal is to see CIDWT and IOL and NOWRA put their cards on the table and take those of us at the state level out of limbo. Even more important to us in MO and KS since we have now paid money to IOL and are preparing to invest more money and time to equation. (Fritts)
- This training program is essential for all professionals involved in training certification of the decentralized professional O&M service providers (Miles)
- Certainly, in this field, an inventory of systems and an assessment of their performance is a widespread deficiency. This may be one of the most significant outcomes of the course- implementation of the tasks this course will help O&M providers more effectively accomplish. Finding the problems is one thing, fixing them is another. This training could help to fix them (by their identification) as well as to prevent. Whoops, you said testimonial, not manifesto…

Pre-Post Expectation Comparison

	Name	Expectations Pre-Academy Questionnaire	Expectations Program Evaluation
1.	Number 1		Very.
2.	Dave Lenning	To enable greater number of (?) to do a better job in taking care of system, Help our system work better for longer period of time.	Very- Seeing the sight presentations…the text/handout and getting a copy of it was my (?) expectation- hearing it from another perspective added great value.
3.	Randy Miles	High.	Very effective. Great.
4.	Tim Bannister	Broaden knowledge base on practices and train to train where we can expand O&M in the industry.	Very Good.
5.	Jeff Snowden	Learn, Learn, Learn	Very Good.
6.	Kenneth Davis	Learn different teaching approaches, Learn major objectives.	Very effective
7.	John Boris	Learn O&M training procedures.	Yes.
8.	Barry Glotfelty	To be trained to train O&M providers for MD's by Restoration program.	Good. To present the materials effectively, interacting with those who designed the program gives good insight.
9.	Dan Olson	Receive training materials and training skills to train service providers in our state.	
10.	R. Groover	Ability to add a new dimension to our educational program at the training center.	Exceeded- did not expect to receive the tools to implement the program.
11.	Nick Weigel	Advanced O&M Knowledge to use in designs.	Very effective. I appreciated the info about putting trainings together and thinking about $.
12.	Tom Fritts		Very.
13.	Morgan Powell	Learn from others.	I appreciate that a lot of work has gone into developing and presenting this training.
14.	Trapper Davis	Learn the Program and preach it to the masses.	Excellent.

CIDWT O&M Service Provider Program
Summary of Use

1. **Have you used the O&M Service Provider Program training materials during 2006?**
   Yes = 7   No = 1
If you answered "yes" to Question 1, please tell us which section(s) of the materials were most useful and why. (Then skip Question 1B.)

   1. All except for minor sections not used in Virginia, Maryland, or Florida, such as Lagoons, etc.
   2. The preliminary info forms for site evaluation, records etc were most useful in that it emphasized the necessity to do research and be informed before acting.
   3. This accounts for the NAWT training sessions where we have split the materials up and shortened the presentations and the worksheets.
   4. The Iowa Onsite Wastewater Training Center offered an O&M Training for service providers of aerobic treatment units, sand filters and UV disinfection. We included the safety and ethics portions as requested by CIDWT. We focused on these units since they are prevalent in Central Iowa.
   5. I'll answer this the other way – we omitted those sections of the materials that do not apply to our state (spray distribution, surface discharge, chlorine disinfection and a couple other sections) We had to amend some sections to make the program more consistent with sate rules. Otherwise we used the CIDWT materials directly.

1B. What was the primary reason that you did NOT use the O&M Service Provider Program   materials? (After answering this question, you can skip to Question 5.)
   1. Lack of opportunity.   I'm not going to initiate a training program on my own,   but I am available to teach for others' programs.
   2. Used as part of COWA training courses offered in 2006.
   3. The information or materials were not consistent with state rules. But usually this entailed a simple modification of the materials (PPTs)

2. **How many different training events did you conduct in 2006 using the materials?**
   _____2005?_____

	2006	2005
1	5	0
2	1	0
3	15	0
4	0	0
5	2	1
6	1	0
7	1	0
8	3	0
Total	28	

3. **How many people attended those training event(s) during 2006? ___ 2005? _____**

	2006	2005
1	50	0
2	30	0
3	1618	0
4	0	0
5	50	24
6	45	0
7	60	0
8	60	0
Total	1913	

4. **Are you or any of the practitioners you have trained using the Operational Checklists to document and/or report on their activities?**

Yes = 4   No = 2   Don't know = 2

If you answered "no" to Question 5, please state the primary reason that you are not.
1. The only systems I currently operate are (1) my own LPP, and it's an ongoing activity rather than a
scheduled event,   and (2) a "special circumstances"
2. They are simply too long. That doesn't mean they are not useful to the participants.

5. **On a scale of 1 to 10, please rate how useful these materials have been to your programs?**
1 being "not at all useful"   10 being "couldn't have done training without them"
1 10 – Couldn't have done it without the materials
2 10 Best materials ever
3 7
4 7
5 10

6. **Did you collect program evaluations at the conclusion of the event(s)?**
Yes = 6   No = 0
If you answered "yes" to Question 6, please share any specific comments that attendees provided that comment on the level of success of training on this or the following page.

1. Program evaluations were left with the sponsor of the training. All critiques that I saw were positive.
2. Need to summarize and will send the results
3. Most comments were very positive. Providers liked the idea of a standard method approach to O&M.
4. On the whole the content is good, there is quite a bit of repetition of material and photos that are also found in the NAWT Inspector Training Course.
5. The evaluations have been overwhelmingly positive. I don't have copies of the evaluations, if you want more detail, you may contact   Larry Ralphs, Project Coordinator, Chemeketa Community College, Training and Economic Development Center 365 Ferry ST. SE, Salem, OR 97301, 503-316-3230

7. **If you have any suggestions about the materials, or would like to describe other ways you or your associates have used them (including regulatory), please feel free to share that with us.**

Would like to have your contact information posted on the CIDWT website in a section devoted to a list of persons who have attended the O&M Service Provider Train the Trainer Academy?

Yes = 5   No = 1

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CIDWT EFFECTIVE TRAINING TRAIN-THE-TRAINER ACADEMY
NASHVILLE, TN – FEBRUARY 2007

Table 1. Overall Course Evaluation (5=Very beneficial and 1=no value) (N=16)

Question	Mean
Manual:	4.38
Overall presentations:	4.63
Small group- specifying the body of knowledge:	4.63
Large group- Presenting small group results:	4.56
Small groups- development of presentations:	4.44
Small group- creating and using evaluating tools:	4.50

Table 2. Presentation Evaluation (5=most valuable and 1=least valuable) (N=19)

Question	Mean
Evolution of the onsite treatment philosophy:	4.40
How to write clear learning objectives:	4.81
Effective use of video and PPT's in training programs:	4.50
Building a team of effective instructors:	4.67
Evaluation tools:	4.60

Table 3. of class components and materials (5=Very beneficial and 1=no value) (N=16)

Question	Mean
University Curriculum Materials	4.42
Practitioner Training Materials:	4.58
Water Movement DVD:	4.38
Presentation Handouts:	4.23

Table 4. Evaluation of level of understanding with respect to topic (4=excellent, 3=good, 2=fair, 1=poor) (N=16)

Question	Before Mean	After Mean
Evolution of the onsite treatment philosophy:	2.87	3.40
How to write clear learning objectives:	1.73	3.27
Effective use of a video and PPT's in training programs:	2.53	3.27
Building a team of effective instructors:	2.13	3.40
Evaluation tools:	2.33	3.27

Table 5. Knowledge gain (%) (N=16)

Question	% Knowledge Gain
Evolution of the onsite treatment philosophy:	18.6
How to write clear learning objectives:	88.5
Effective use of video and PPT's in training programs:	28.9
Building a team of effective instructors:	59.4
Evaluation tools:	40.0

1 Free Response Questions

1.1 What were your expectations for this program?

- To gain teaching skills.
- To formulate a educational program for use in Colorado.
- Learn better ways to conduct training.
- Learn better ways to organize a presentation.
- To learn about being a trainer; get copies of CIDWT materials developed.
- Gaining information on how-to's of developing and presenting training.
- Become a better trainer.
- I expected to learn how to better put together programs on on-site sewage systems and to receive additional materials.
- Sharpen course/program development skills.
- Gain skills to enable Colorado to create a training and certification program.
- Good.
- Gain more knowledge on training skills, curriculum development training program development.
- To learn how to effectively and efficiently develop training materials and programs.
- Learn more about preparing and presenting training.
- Improve training program that I do.
- Become a better trainer and able to host better training sessions.

1.2 What topics would you like to see added to the program or given more time in the program?

- Sample materials may be valuable to review and evaluate state certification tests and training programs.
- How to compare systems to determine up front and long term cost.
- Cost/economics of different types of OWT's, cost of installations, cost of O&M (and repairs).
- More on PowerPoint.
- Would like to see some additional video materials available to use within program.
- More O&M
- NA
- More sharing of material between those attending CIDWT classes.
- A session on using PowerPoint.

1.3 What was the most helpful information presented through this training program?

- All has been very helpful.
- Booklet to back-up presentation.
- Information on training presentations.
- Organizing presentation.

- (Changed "information presented through" with "part of") - Getting people together to discuss/share.
- Connection of learning objectives to presentation and testing (eval.).
- Learning objectives.
- It was all helpful.
- Information was good, but the small group exercises really helped bring it together.
- How to select instructors.
- All
- Shared curriculum development.
- Licensing objectives and evaluation.
- Sharing of ideas.
- Speaker/PowerPoint.

1.4 What is your general impression of this training program?

- I feel that I am a little over head at this time.
- Very good.
- Interesting.
- Very helpful.
- A good opportunity to come together to plan for an introductory course.
- Very beneficial for any trainer or prospective trainer.
- Excellent.
- Very good.
- Excellent.
- Valuable toolbox.
- Very good.
- Excellent.
- Great for all trainer skill levels.
- Very good for people who do not routinely do training.
- Excellent.

1.5   What additional training would you like to see offered?

- Not sure at this time.
- The continued activity in March will put a nice ending on this training.
- More info.
- Not sure at this time.
- Planning for other onsite courses.
- Becoming a better trainer.
- Programs on wetlands, sand filters and other atu systems.
- A document providing suggestions on how to create an all-encompassing program from the beginning.
- NA
- NA

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