

What is the Onsite Wastewater Training Program?

In 1993 the URI Cooperative Extension Water Quality Program developed the Onsite Wastewater Training Center (OWTC). It is one of eight regional centers nationally. The OWTC is located at URI Peckham Farm and consists of numerous innovative and alternative (I&A) and conventional onsite wastewater treatment



technologies that are installed above ground to facilitate hands on learning. The OWT Program consists of classroom and field training classes covering

all aspects of onsite wastewater system siting, design, installation, inspection, operation, and maintenance. In 2005 the Program became known as the New England Onsite Wastewater Training Program, and began efforts to serve the greater New England region.

Environmental Issues

About 25 percent of the United States' population live in areas that use onsite wastewater treatment systems. Thirty-one percent of Rhode Islanders depend upon septic systems for treatment of domestic wastewaters, while 10 of Rhode Island's 39 cities and towns are completely unsewered. Surface and groundwater contamination associated with septic systems often results from their failure because of system age or improper maintenance. However, even properly functioning systems can cause water quality degradation and pose public health risks. Depending upon soil type, water saturation, and other factors, nutrients and microbial pollutants can migrate long distances down-gradient from properly functioning (and certainly failing) systems and ultimately leach into ground or surface waters. Statewide, 34% of assessed rivers, 22% of assessed lakes, and 30% of estuarine waters are considered impaired due to water pollution, and do not support designated uses according to the Rhode Island 2002 305(b) water quality report. One of

the leading causes of this pollution problem is discharge from cesspools and substandard or failing septic systems. In 2002, over 17,000 acres of Rhode Island's salt ponds, tidal rivers, and coastal embayments designated for shellfish harvesting were permanently or conditionally closed due, in part, to contaminated stormwater runoff and leachate from septic systems.

Solution

The I&A systems located at the OWTC facility are based upon proven technologies, some of which are specifically designed to minimize nutrient and/or microbial loading to ground and surface waters. They consist of systems currently approved by regulatory programs in New England or those with strong potential for inclusion in new septic system regulations.

Technologies and Topics

The NEOWTP has a number of septic system technologies that are installed at the training facility for a hands-on learning experience. These include:

- Conventional system
- Trickling filters
- Pressure dosed systems
- Extended aeration systems
- Sand filtration systems
- Denitrification systems
- Biofilters (peat, foam, and textile)
- Composting toilets
- Conventional systems
- Innovative drainfield options

In addition to the various technologies, the OWT program covers important topics such as:

- Site evaluation and suitability
- Soils and hydrology
- Subsurface wastewater treatment
- State regulations

Education Program

Cooperative Extension staff conducts most of the classroom and in-field training. However, private sector, state, and federal cooperating agencies and groups also greatly contribute in their respective areas of expertise. Detailed workshop training modules



cover each topic featured in the field. Our audiences include regulators, designers, installers, contractors, health officials, real estate agents and inspectors, municipal officials, and homeowner groups. A substantial component of our training program is focused on operation, maintenance and inspection of septic systems, because properly

maintained systems help to protect public health and minimize water quality degradation. Some of the specific classes offered by the OWTP include:

- Bottomless sand filter design and installation
- Conventional onsite wastewater treatment basics
- Hands-on component installation techniques
- Effluent pumps and control panels
- I&A technology overview
- Sand media specifics
- Septic tank design and construction
- Conventional septic system inspection procedures
- I&A system operation, maintenance and inspection procedures
- Media filters
- Managing high strength wastewater
- Nitrogen dynamics
- Surveying techniques

Outreach

The four main roles of the NEOWT Program is research, outreach and training, regulatory support, and university curriculum. The primary mission of our outreach and training role is to provide research-based outreach education to local, regional, and national interest groups. Our OWTP technology transfer and demonstration program provides workshop attendees with classroom and hands-on field training in the design, siting, installation, operation, and maintenance of various conventional and I&A septic system designs. We find that it is necessary to provide demonstration and training in order to expand the use of proven I&A wastewater treatment technologies, and thereby help safeguard public health and water quality in the region. Moreover, we continuously modify the course content and offer new classes to reflect emerging technologies, related information, and new regulations.

The OWTP has installed a network of 56 I&A septic systems located in communities throughout RI that are providing important water quality research data. These demonstration systems also serve as training sites for participants of our OWTP classes. The results from these demonstration sites helps to determine which technologies are better suited for achieving specific water quality objectives and whether they are suitable for various site considerations.

The OWTP is also a member of the Consortium of Institutes for Decentralized Wastewater Treatment (CIDWT) <http://www.onsiteconsortium.org/>. The CIDWT is a group of educational institutions and private groups committed to research and training efforts for onsite wastewater field. In addition to providing training opportunities for regional and local groups, the OWTP, in conjunction with the CIDWT, has been involved in national efforts to promote a standardized educational wastewater technology curriculum. These national efforts help promote better collaboration and communication between Consortium institutions, wastewater professionals, industry, municipal, state, and federal officials, and the public.

Contributors of Products / Services

American Manufacturing Co., Inc.
Apple Valley Sand & Gravel
Arnold Lumber Co., Inc.
Ashaway Cement Products, Inc.
AWT Environmental, Inc.
Bio Microbics, Inc.
Bio-Sun Systems, Inc.
Bordnamona Environ. Products, Inc.
Burnham Excavating, Inc.
Cultec, Inc.
D'Libro Excavating, Inc.
Dynomike, Inc.
Eljen Corporation
Fiber Enterprises
Frisella Engineering
Granstone Precast, Inc.
Grunfos Pumps Corp.
Holliston Sand Co., Inc.
Hydromatic Pumps, Inc.
Infiltrator Systems, Inc.
International Waterguard, Inc.
J.H. Lynch Ready Mix, Inc.
Jolley Precast, Inc.
K-Rain Manufacturing
Richard Olson Excavating, Inc.
Orenco Systems, Inc.
Peace Dale Precast Co., Inc.
RI Builders Association
RI Consulting Engineers
RI Independent Contractors & Associates
RI Society of Environmental Professionals
RI Society of Professional Land Surveyors
Rotondo & Sons, Inc.
Salcor Engineering
Siegmond Environmental Services, Inc.
S.J. Electro Systems, Inc.
T&T Tools, Inc.
Tucker Mini Construction, Inc.
Thosby & Bowne
Van Brocklin Construction Services
Viking Supply Company
Waterloo Biofilter Systems, Inc.
William Wright Excavating
Zabel Wastewater Filter Systems
Zoeller Co.

New England Onsite Wastewater Training Program @ URI CELS



Contact Information

College of the Environment and Life Sciences
Department of Natural Resources Science
NE Onsite Wastewater Training Program
University of Rhode Island
Coastal Institute, 1 Greenhouse Road
Kingston, RI 02881

George Loomis, Center Director
Email: gloomis@uri.edu
Telephone: 401-874-4558

David Kalen, Program Manager
Email: davidkalen@mail.uri.edu
Telephone: 401-874-5950

Holly Meehan, Training Coordinator
Email: hameehan@mail.uri.edu
Telephone: 401-874-5950

Visit our website at:
<http://www.uri.edu/ce/wq/OWT/>

Partnership Agencies

American Planning Association
Consortium of Institutes for Decentralized
Wastewater Treatment
RI Coastal Resources Management Council
RI Department Environmental Management
RI Independent Contractors and Associates
RI Sea Grant
URI Cooperative Extension
US Environmental Protection Agency - Region 1