New England Onsite Wastewater Training Program

National Theme:

Pollution Assessment and Prevention

New England Regional Review

October 16, 2007

http://www.usawaterquality.org/newengland

New England Onsite Wastewater Training Program @ URI CELS

NE OWT Center
Peckham Research Farm
Kingston

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What is the situation?

- Nationally 25% of population relies on onsite (decentralized) wastewater treatment
- Percentage has remained static for over 35 years
- Entire communities and counties dependent
- New development in rural areas, outside central sewer areas

Onsite wastewater facts

- Failed and substandard systems can impact ground and surface waters
- Even properly functioning systems can cause water quality degradation and pose public health risks
- Documented impacts from onsite wastewater systems
- Advanced treatment systems can mitigate

USEPA *Response to Congress* - 1997

Overcoming barriers to using onsite / decentralized systems –

- Lack of knowledge
- Legislative / regulatory constraints
- Lack of onsite wastewater management programs
- Liability and engineering fees
- Financial issues

NE OWT Program goals

- *To educate the public and practitioners about onsite wastewater treatment issues*
- *Advance the use of innovative and alternative technologies*
- *Improve and protect public health and water quality*
- *Encourage sustainable development in the New England region*

Who we are

URI CELS staff –

George Loomis - Research and Extension
Soil Scientist and Director

David Kalen - Environmental Engineer and
Program Manager

Funding – NIWQP; AES, CE

Extramural grants and training fees

NE OWTP Partners

CIDWT
The Consortium of Institutes for Decentralized Wastewater Treatment

State of Rhode Island
Coastal Resources Management Council

State of Rhode Island
Department of Environmental Management

RI Independent Contractors and Associates

United States Environmental Protection Agency

Rhode Island Sea Grant

University of Rhode Island
NEMO

APA American Planning Association

ELS

University of Rhode Island
Department of Natural Resources Science

Cooperative Extension @URI

New England Regional Water Program

CSREES
Education · Research · Extension
USDA

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Regional Partnerships

NEW YORK
NEW JERSEY
PUERTO RICO
VIRGIN ISLANDS
Regional Water Coordination Program

Peconic Estuary Program

National Park Service

New England Water Environment Association

American Soc. of Ag. and Biol. Engineers

Yankee Onsite Wastewater Association

Massachusetts Environmental Health Association

NEIWPCC
New England Interstate Water Pollution Control Commission

Connecticut Onsite Wastewater Recycling Association

Activities

1985 to 1993 – Research

1993 to 2004 – Rhode Island demonstration / research

2004 to present – New England OWTC; regional and national training

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Northeast activities summary

- New England Water Environ. Assoc. training 2006
- Peconic Estuary Program (NY) field tour 2006
- MA Environ. Health Assoc. training 2007
- New England Interstate Water Pollution Control Commission field tour 2007
- Yankee Onsite Wastewater Assoc. training 2007 in VT
- Franklin Regional Council of Governments (MA) field tour 2007
- Yankee Onsite Wastewater Assoc. conference 2008 in CT

Onsite Wastewater

Demo Projects 1996 - 2006

Project Goals -

- $4.5 M state and federal grants
- 5 demo projects in 7 communities
- 56 demonstration systems
- Replace failed septic systems with innovative technologies
- Train practitioners – design and install
- Export results

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Applied research

- Replace failed system with advanced technologies
- Evaluate treatment performance
- Perform and document operation and maintenance needs
- Report findings to regulatory agencies
- Integrate findings into regulations
- Transfer findings – local to national venues
- Use findings to develop national peer reviewed training curricula for undergrads and professionals

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Single pass sand filter

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Outreach and training - Local to national audiences

- Soil and site evaluators
- Professional engineers
- Professional land surveyors
- Installers
- O&M service providers
- Environ. health specialists
- Real estate agents
- State and community officials
- Extension / education professionals
- NGOs
- Government agencies

University of Rhode Island NEMO

NEW ENGLAND Regional Water Program

CSREES EDUCATION RESEARCH EXTENSION USDA

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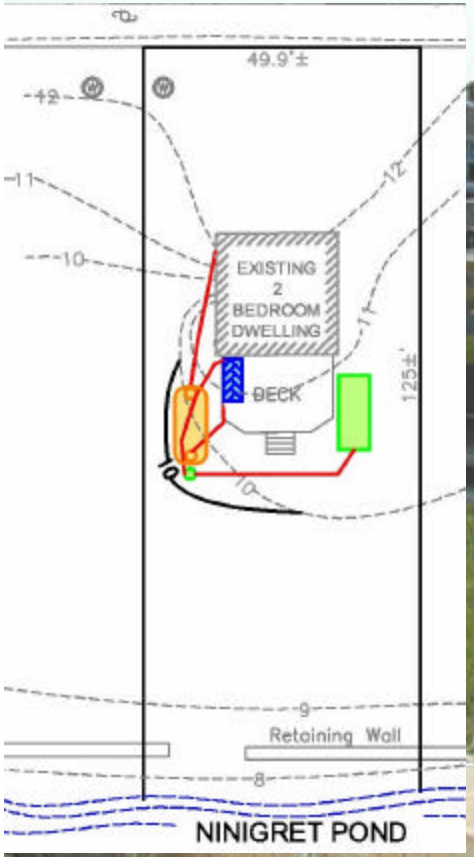
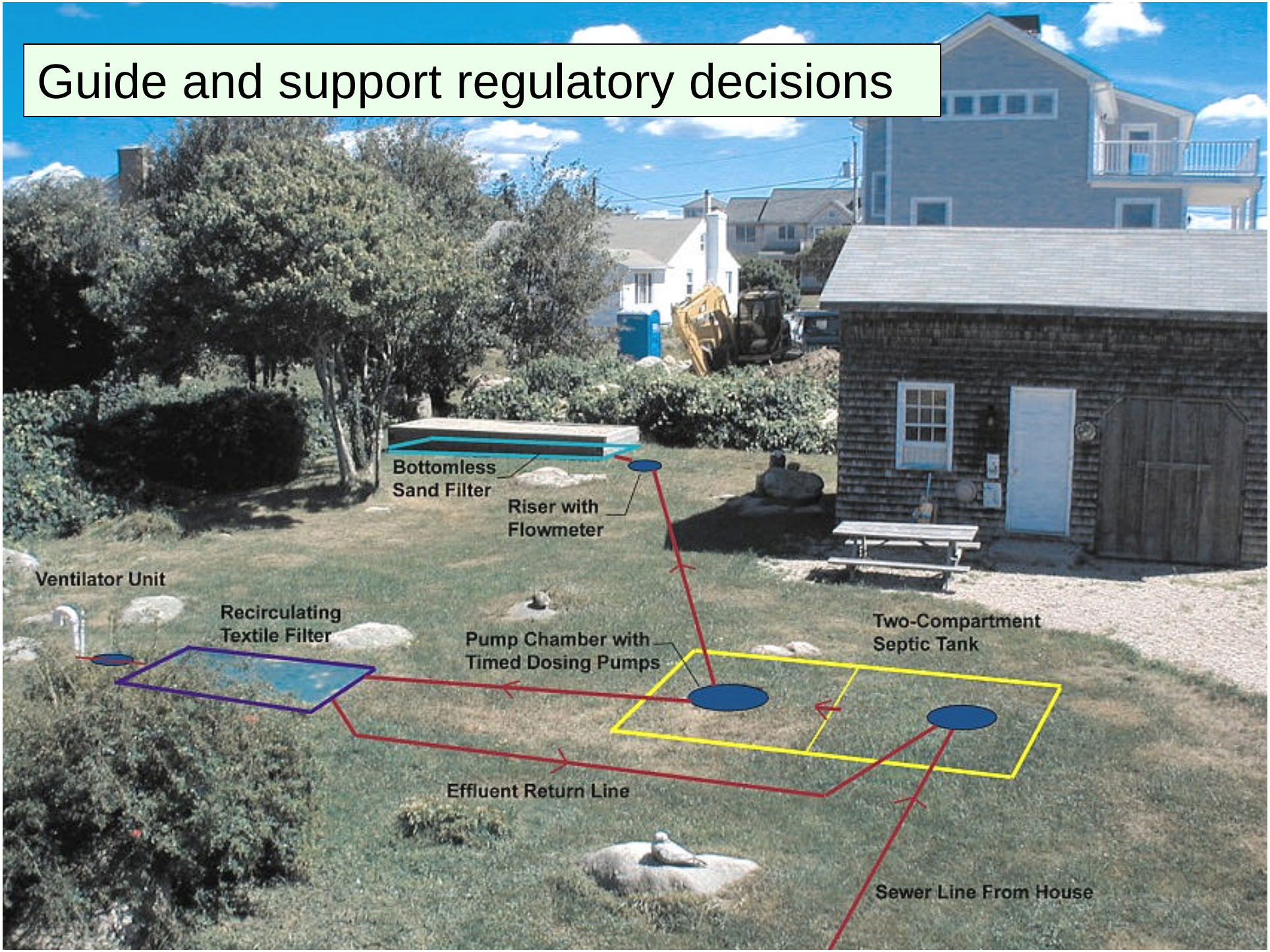
Outreach training at a demo site



Guide and support regulatory decisions



Examples of regulatory change through technology transfer

- Sand filter guidance document – exported nationally
- Bottomless sand filter guidance – RI, now being used in MA, VT
- National O&M Service Provider Manual
- Designer licensing program – RI
- Continuing education for licensed professionals
- Assistance to develop wastewater management plans and ordinances – 10 RI, 2 CT, and 2 MA towns
- Onsite Wastewater Resource Center

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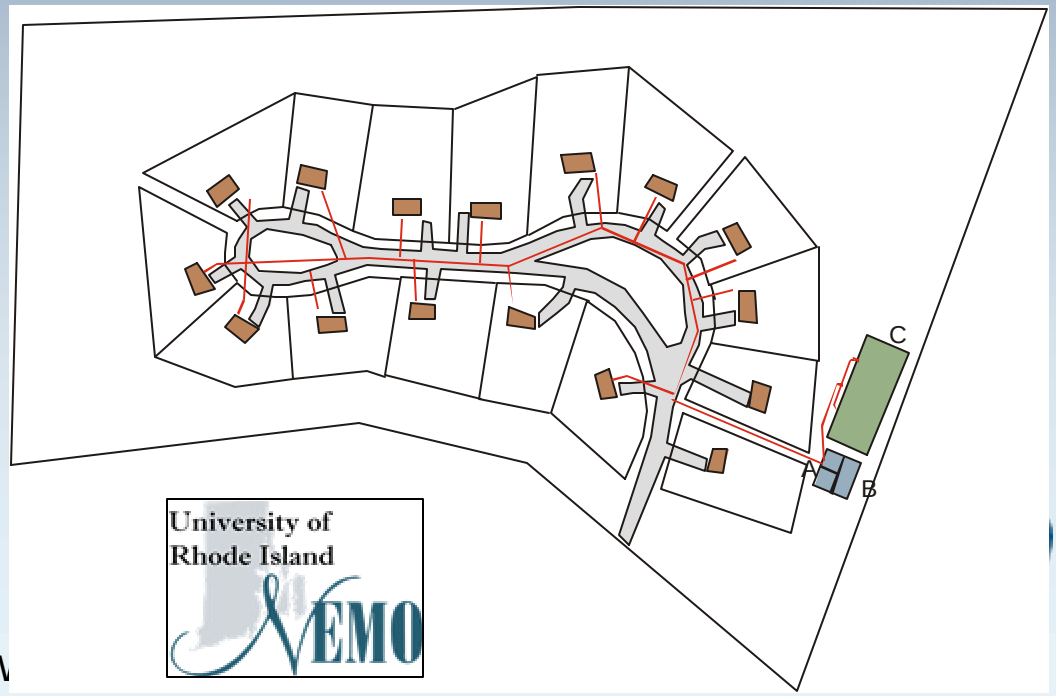
Encouraging use of Alternative Septic Systems to promote compact developments and preserve open space

New, unsewered, 40 acre village. 135 acre farmstead preserved

Common pretreatment system, drainfield in town green

Conservation subdivision cluster system: 16 septic tanks flow to single N removal system.

Norwell, MA.



University of Rhode Island NEMO

Alternative to sewers in village centers

Advanced treatment unit in basement and alley-way. Compact design reduces ecological footprint and protects water quality

What we produce -

- Peer-reviewed, nationally standardized, and award winning training materials
- Research-based outreach information
- Practitioner and university curricula
- Train-the-trainer academies
- Over 40 training classes per year – local through national venues
- Regulatory guidance documents
- Wastewater management programs

Outcomes

- Wastewater O&M service providers now have national standardized procedures
- Trainers can improve their knowledge, skills and abilities
- Practitioners have access to quality training
- Research-based outreach education used to direct regulatory decisions
- Standardized glossary of terms – move towards more uniform understanding
- Thousands of people trained regionally and nationally via CIDWT
- Licensing of professionals and continuing education required

Outcome examples

- In Rhode Island:

1993 to 2006 – 27% increase in use of advanced onsite treatment technology

- In New England:

CT, MA, VT received training that helped build interest, support, and regulatory acceptance of innovative technologies and wastewater management

- Nationally:

CIDWT university and practitioner curricula projects overcoming education barriers stated in USEPA Response to Congress

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Focus Area Strengths

CIDWT

The Consortium of Institutes for Decentralized Wastewater Treatment

National network of Land / Sea Grant institutions conducting research and developing and sharing peer reviewed education and outreach training materials

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What's Next

- High Strength Wastewater Training Curriculum
- CIDWT Installer Training Curriculum Project began Sept.'07
- North American Lake Management Society International Conf. – preconf. training session; Orlando, FL; Oct. '07
- Installer Academy III – L. Vegas, Dec.'07
- 4 Train-the-Trainer Academies – nationally
- Region 2 training in US Virgin Islands and Puerto Rico, Mar. '08

Onsite Wastewater Resource Center

on the Web now

Block Island/GreenHill Watershed Demonstration Project

http://www.uri.edu/ce/wq/

Plans, ordinances, fact sheets, posters, workshop schedule, and much more

SAFEWATER

A community effort to protect, recycle and sustain local water resources

http://www.usawaterquality.org/newengland

Thanks for your attention…