In my Backyard: an Innovative Look at the Advances of Onsite Decentralized Wastewater Treatment

Held December 17 and 18, 2013

Washington, DC

Status of the Workshop Report:

- Workshop held on December 17 and 18, 2013.
- Draft report due in March 2014.
- Not to be.
- Glynn retired April 1, 2014 from the National Assoc. of Home Builders and began work on the draft report with review by speakers and a subset of the Workshop Steering Committee.
- Final draft sent to STAC on May 1, 2014 for review by STAC.
- STAC due to reply to the workshop recommendations in July 2014.

Nomenclature for Onsite Systems

- Industry terminology moving to “Onsite Wastewater Treatment Systems (OWTS)“
- Current terminology not well defined:
  - onsite septic systems
  - cluster systems
  - regional systems
  - community systems
  - etc.
- OWTS terminology adopted for workshop report.
- Old terminology embedded in state regulations.

Some background regarding onsite systems:

- Roughly 3% of the Bay's N loadings are from onsite systems.
- There are about 1.7 million onsite systems in the Bay watershed and that number is expected to grow to 1.9 million by 2025.
- All N from new sources, including onsite systems (but not sewer hookups - for now) must be addressed in state WIPs and in the state's "Accounting for New Growth Programs."
- Some states require that new technologies be used to reduce N from new onsite systems, some do not. Maryland requires retrofit of all of its existing traditional onsite systems with new denitrogen systems.
- 5 kg N/person/yr enters an onsite system from a home. A a traditional onsite system with its drainfield reduce the N by about 20% to 4 kg N/person/yr. The N load may be further reduced before it surfaces.
- Most onsite denitrification systems in use reduce N from an onsite system by roughly 50%.
- The new denitrification systems utilize professional maintenance contracts for the systems. Normally, two inspections/yr at roughly $300/inspection. Electricity to an air pump in the system must also be maintained. Installation costs are ~ $12,000 for a new denitrification system.

From EPA's June 2013 *Model Program for Onsite Management in the Chesapeake Bay Watershed*:

Setback Distance	Federal Model Program for Treatment of Nitrogen
0 – 100 feet	No Onsite System Discharges
100 – 1,000 feet	10 mg/L Total Nitrogen
Beyond 1,000 feet	20 mg/L Total Nitrogen (for new development, upgrades, replacements)

Need for the workshop:

- The Chesapeake Bay states must develop implementation strategies to address N loadings from onsite systems. Strategies are needed for the "Septic Sector" under the Bay TMDL and for the TMDL's requirement for "Accounting for New Growth" programs. Understanding and discussing strategy options should be helpful to the states. These issues have national ramifications for other nutrient TMDLs around the U.S.
- The non-point aspect of wastewater (onsite systems) is often overlooked. With EPA's June 2013 Guidance to the states on onsite systems management, a December workshop was timely.
- A review of the performance of existing technologies for reducing N from onsite systems would be helpful along with a look at other less-well-know technologies like eco-toilets.
- The workshop was a timely forum for a discussion of EPA's efforts to enhance collaboration and data-sharing across states regarding onsite septic technologies and data regarding such systems.

Speakers and panels, day 1:

December 17:

Workshop Facilitator: Dr. Denise Wardrop, STAC member and Director of Penn State's Sustainability Institute.

1st Presentation: Joyce Hudson, EPA and Mark Nelson, Horsley Witten - *EPA's State Model Program and a Proposal to Share 3rd Party Data among States* (followed by audience discussion).

1st Panel Discussion: Jay Prager, MD DOE; Marcia Degen, VA Dept. of Health; and Derrick Caruthers, DENREC – Topic: *How the State is Addressing Septic Loads and Related Septic Matters* (followed by audience discussion).

2nd Panel Discussion: Katie Maloney, Maloney and Assoc.; Ellen Frketic, MD Env. Service; Amy Hart, Howard Co., MD; and Dave Clark, the Rural Community Assistance Partnership – Topic: *Decision-making to Address the Septic Needs in new Residential Communities.*

2nd Presentation: Dr. Albert Rubin, NC State Univ. – *Overview of Best Available Technologies for Onsite Septic Systems and Management Considerations.*

3rd Presentation: Victor D'Amato, Tetra Tech – *EPA's Expert Review Panel on Onsite Nitrogen Reduction Technology.*

4th Presentation: Matt Patrick, Westport River Watershed Alliance – *No-Mix Toilets and Other Eco-Toilet Technologies.*

Speakers and panels, day 2:

December 18 (half day):

5th Presentation: Damann Anderson, Hazen and Sawyer – *Florida's Study of Nitrogen Reduction Strategies for Onsite Septic Systems.*

6th Presentation: Anish Jantrania, NVS Wastewater Solutions – *What Cluster Systems can Offer.*

7th Presentation: Rich Piluk, Anne Arundel County Health Dept. – *Beyond Nitrogen.*

Workshop wrap-up: Participants discussion, voting on recommendations, plans for workshop report.

Workshop Particulars:

- Roughly 52 people attended the workshop in person, with an additional couple of people on the webinar.
- Comments on the agenda from speakers and from attendees were positive.
- Things we should have done but did not do:
  - No form was passed out for gathering feedback on the workshop from the attendees
- Things we would like to have done but could not do:
  - An evaluation of water quality trading (or offsets) to be used when considering installing/retrofiting onsite systems could not be done because no regulatory driver currently exists mandating homeowners take such actions (except in Maryland).

Major Recommendations from the Workshop:

1. The Chesapeake Bay Model should be refined to reflect how soils interact with N loadings from OWTS.

2. The EPA, the Chesapeake Bay Program, and the states should work to educate the public in OWTS and seek public buy-in for demonstration projects like the Cape Cod eco-toilet project.

3. Federal funding is needed to address OWTS infrastructure needs.

4. The Chesapeake Bay Program should reach out to the states to see what kind of collaboration they are interested in and help provide the follow-through to make it happen.

5. Data sharing between the states in a number of areas is critical – funding initial development of those efforts, including the sharing of test data from treatment units, should be considered by EPA along with the possible management and funding of interstate data sharing efforts.

6. Viable onsite options will save communities money over time, so we recommend that education and outreach efforts about such options be initiated and focused on communities in need of such support to address their wastewater needs.

Questions or Comments?

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