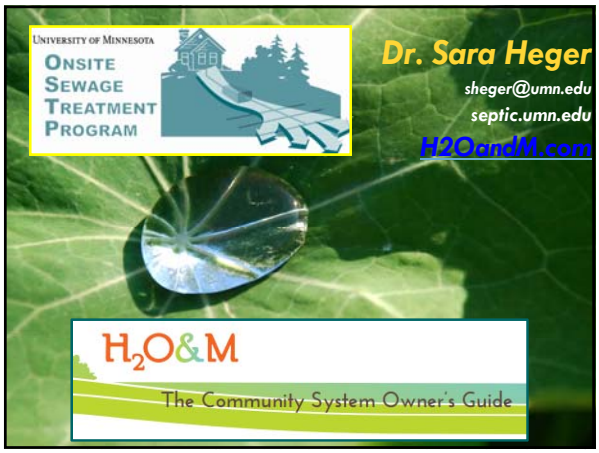


Presentation overview

- Why this project?
- Project objectives
- Tool
- Using the tool
- Next steps and timeline

Collaborative effort

- Funding: National Institute of Food and Agriculture (NIFA) grant
- Lead institution: University of Minnesota, Sara Heger (PI) and Dave Gustafson
- Project development team
  - Iowa Department of National Resources, Dan Olson
  - North Carolina Onsite Water Protection Section, Nancy Deal
  - Southeast Wastewater Initiative, Aaron Wills & Sheila Craig
  - University of Arizona, Kitt Farrell-Poe
  - Wastewater Education, Dendra Best
- Tool/database support
  - The Carney Group, Jules Inda and Pat Carney

Onsite wastewater management

Why should we care about managing decentralized?

- Onsite systems serve approximately 25% of the U.S. population and one-third of new development
- According EPA at least 10 percent of onsite systems fail each year
- State agencies report that these failing systems are the third most common source of groundwater contamination

Why a community septic system owner's guide (CSOG)?

- Management is critical
- Increase in cluster systems and advanced treatment systems with more critical management activities
- Need for customized information

Continued need for education & information

- Bridge the gap between septic system professionals, regulators, and owners
- Produce sound management guidance from the perspective of a system owner

Continued need for education & information

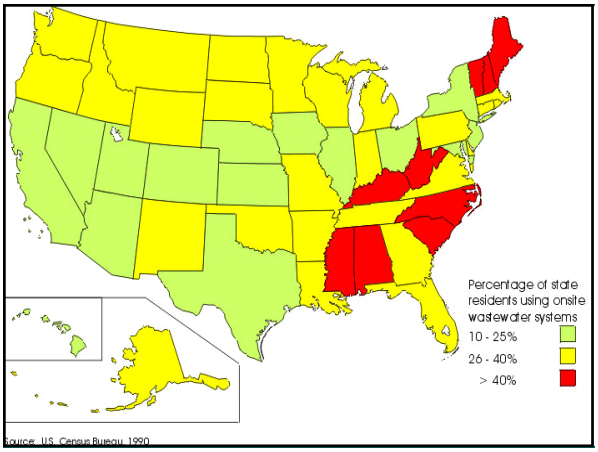
- Raise the bar for management expectations
- Educate system owners to clearly define long term maintenance activities
  - Increased system performance
  - Long-term cost-savings

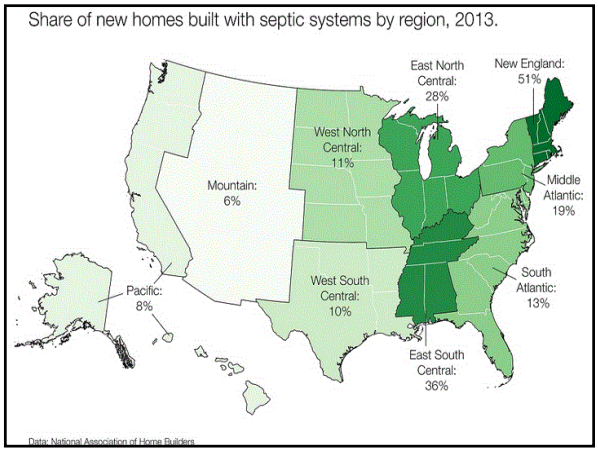
Why an online tool?

- There wasn't one!
- Everything is going electronic
- Allow for national perspective on management
- Allow for local variation
- Ease in updating in the future
- National clearing house

How much wastewater are we talking about?

- 25% of the US population
- 70 million Americans
- 5 billion gallons per day
- ~33% of all new construction
- Unquantified number of commercial properties
  - strip malls, resorts, restaurants, gas stations and similar
- US EPA estimates that there are more than 350,000 existing large-capacity septic systems (serving more than 20 people) nationwide





Why more cluster systems?

- Lack of space for individual system replacement
- Reduction of load allocation for meeting total maximum daily load standards
- Reduced costs compared to wastewater treatment plants
- Smart growth initiatives
- Development and redevelopment occurring outside the reach of municipal sewer extensions

Project objectives

1. Develop content and a web interface
2. Create expert-driven and locally-customized manual for:
   - soil-based wastewater treatment system
   - small scale surface discharging systems
3. Provide owners and users with fundamental information about the operation and management of their systems

Project objectives cont'd

4. Scale from single family home to large cluster system
5. Electronic or hard-copy
   - Creates a PDF
6. Can be updated if:
   - System
   - User
   - Other details change

H_2O&M

The Community System Owner's Guide

- H2OandM.com is the online tool
- The tool will work for:
  - Newly designed/installed systems
  - Exiting systems that are in use

Tool is a survey

- Boilerplate text and graphics created by project team
- Allows the input of local information
  - Number of connections, treatment train components, local permitting issues, rate structures
  - Any regional, state, or local differences in regulations that affect the management of community systems.

Audience for project

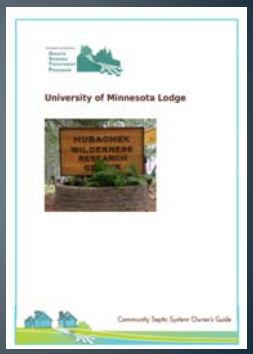
- Online tool:
  - Engineers/Designers
  - Installers, Operators, Service Providers
  - Regulators
  - Facilitators
  - Developer?
  - Informed community members?
- H2OandM guide
  - Individual owner of a septic system
  - Homeowner part of cluster system

What will be in each H2O&M guide?

- The specific treatment train components
  - How they work
  - Text
  - Diagrams and pictures
  - Specific O&M requirements for owner and professional
- General management issues and challenges
- Troubleshooting guide

Where does content come from?

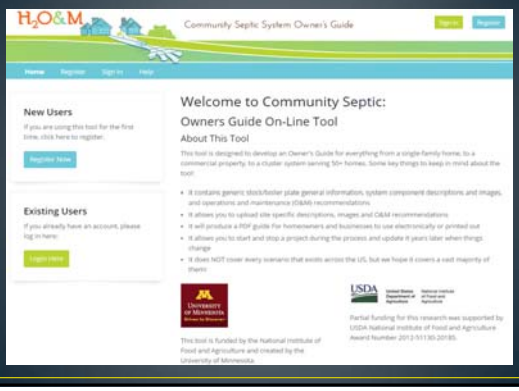
- Each H2O&M guide will be a combination of:
  - Boilerplate content and imagery that has been critically reviewed by project development team
  - Locally customized content and images
- What if user of tool doesn't know key info?
  - Guide will end up being more generic
  - May need to get data from designer, county, etc.



H2O&M
The Community System Owner's Guide

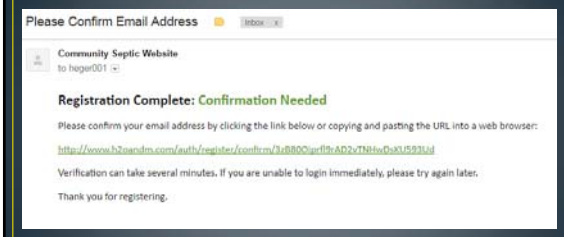
- A septic system professional creates an account where all their projects are stored
- Using the web interface they enter specific site and system information
- Tool creates an electronic or hard copy O&M manual which includes
  - stock image and text
  - customized information entered

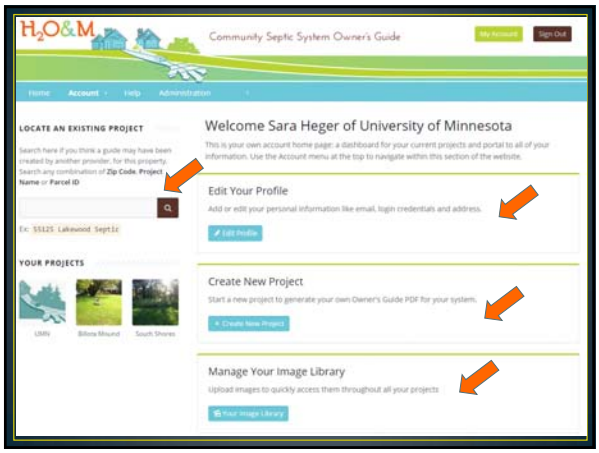
H2OandM.com



Everything with * MUST be entered

Confirmation email





Help topics

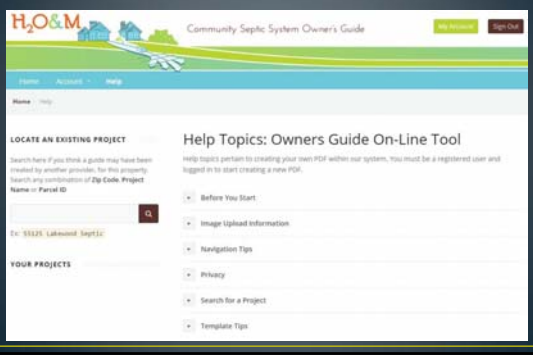


Image help

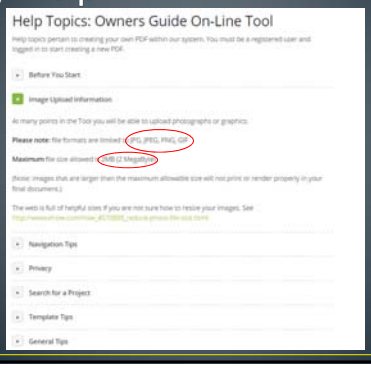
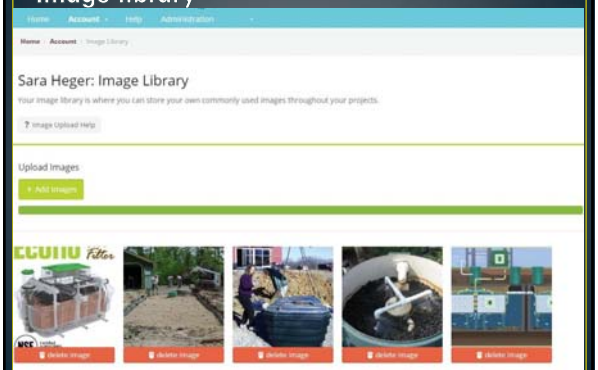
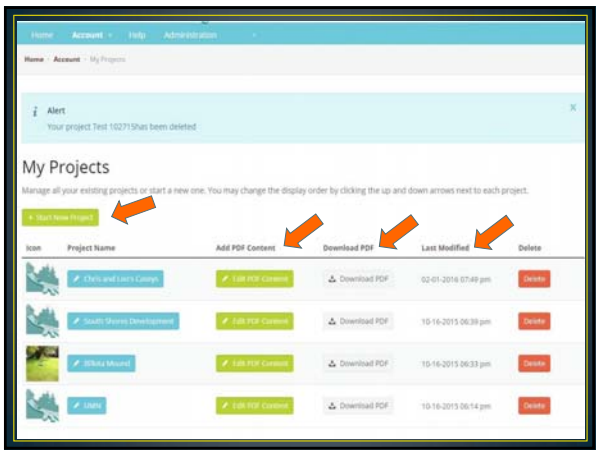
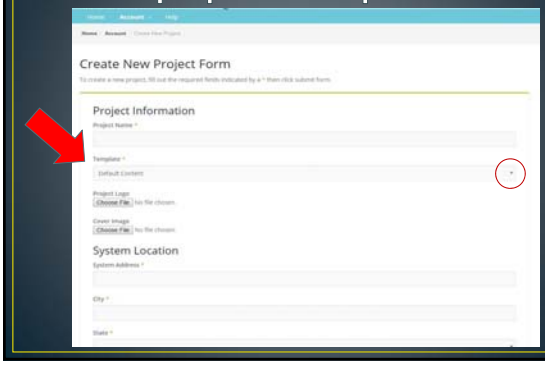


Image library





New project or template



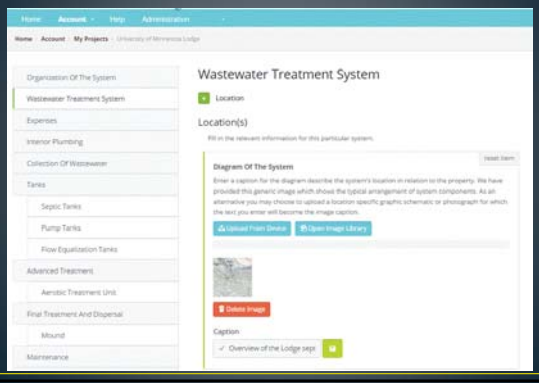
Sections of tool/guide

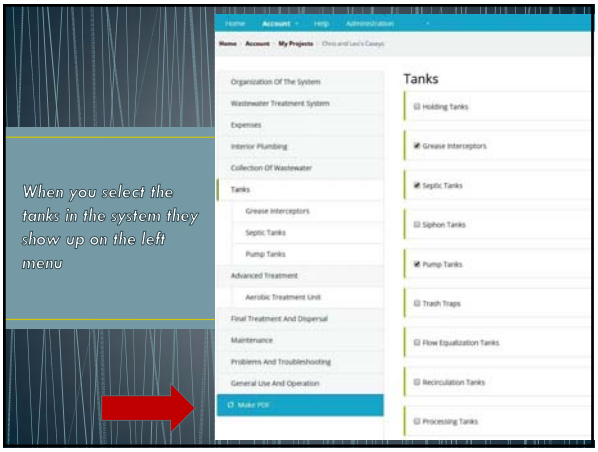
1. Organization of the system – connections, design flow, people served
2. General system information – residential versus commercial, location, setbacks
3. Expenses – capital, annual, electrical, etc.
4. Interior plumbing – type, access and O&M
5. Collection – type, access and O&M

Sections of the Tool

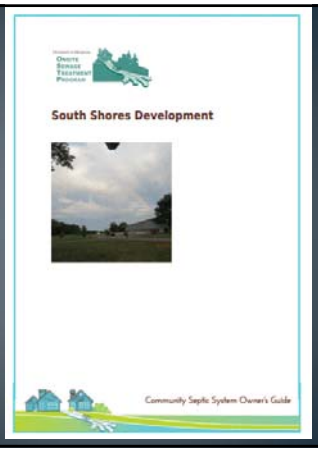
6. Tanks – type, access and O&M
7. Advanced treatment systems - type, access and O&M
8. Final treatment and dispersal – type, access and O&M
9. General maintenance
10. Problems/Troubleshooting
11. General use and operation

Sections of the tool





Completed guide

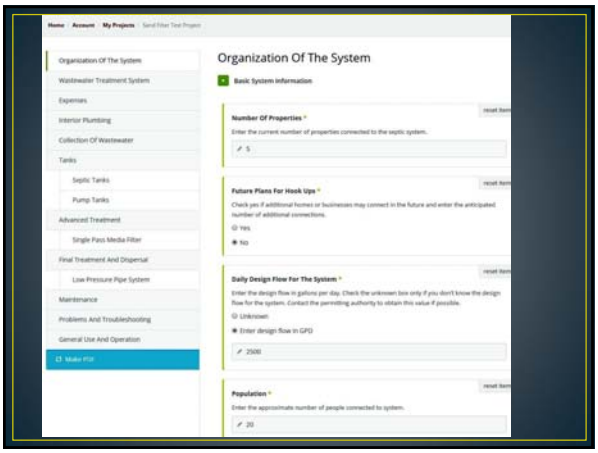


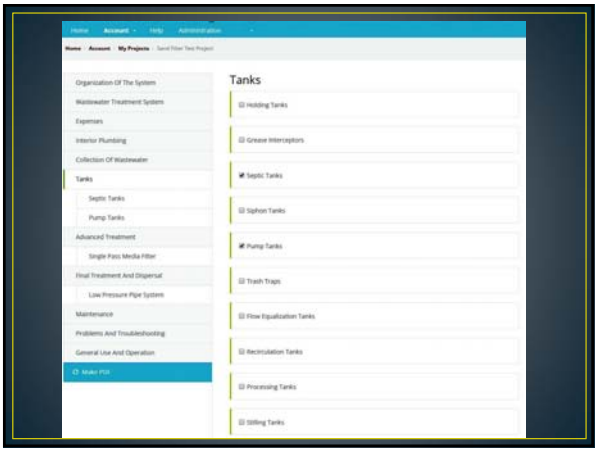
Tool advantages

- Value added information to customer
- Professional/third party recommendations on O&M activities and home management tips
- Ability to update the O&M manuals as the system or user changes
- Capability to create templates for commonly designed, installed or serviced systems

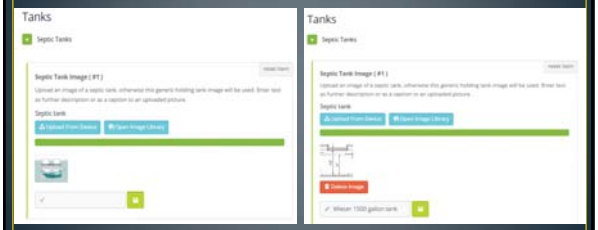
Example community

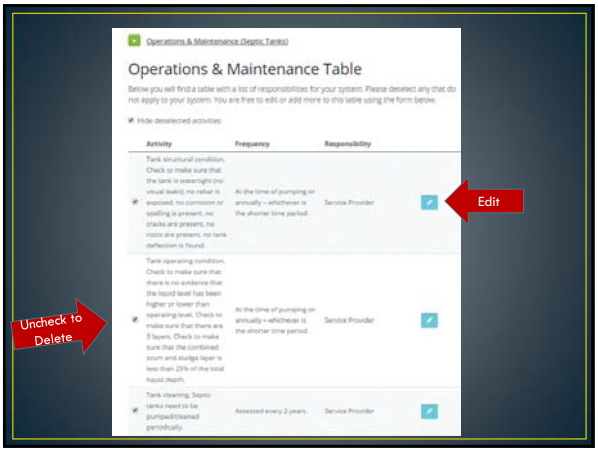
- 4 homes
- 1 business
- Average 20 people per day on the system
- 2,500 gallons per day System:
  - Septic tanks (2)
  - Pump tank (1)
  - Single pass sand filter (1)
  - Pressurized trenches (1)



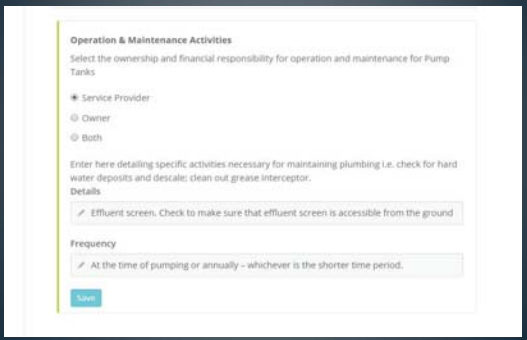


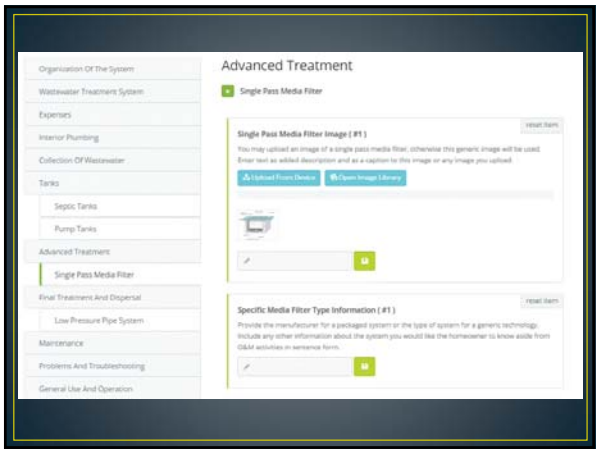
Replacing Stock Images

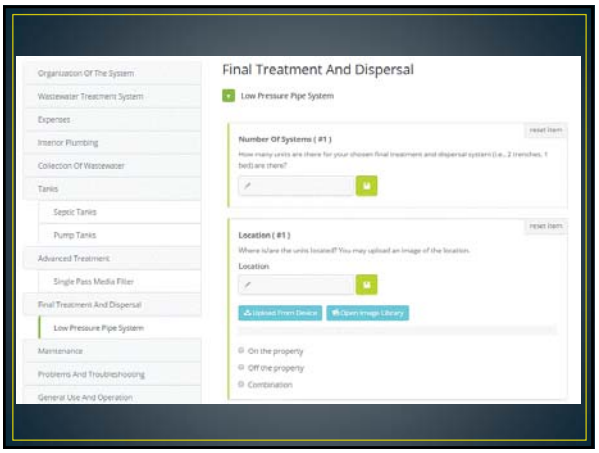


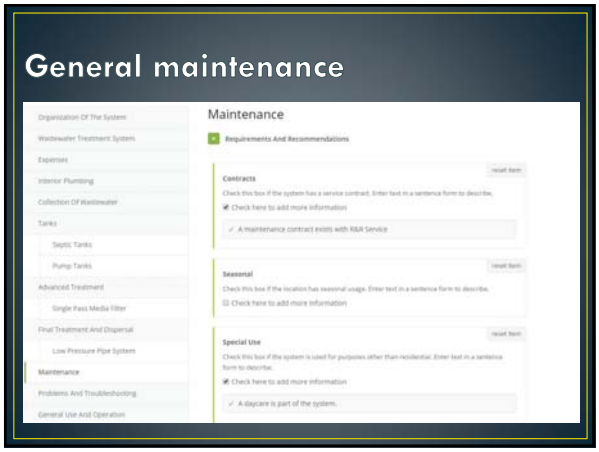


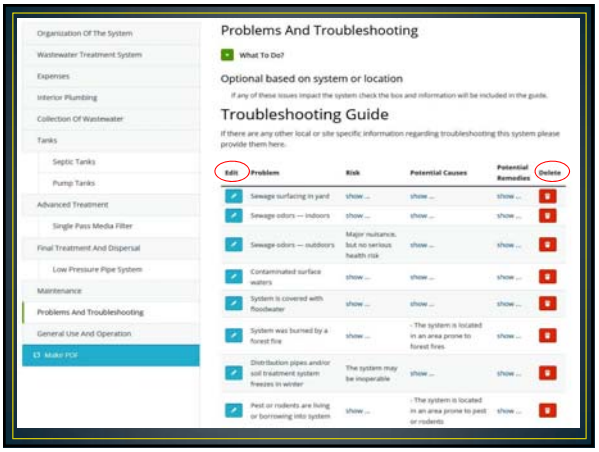
Making edits – effluent screen

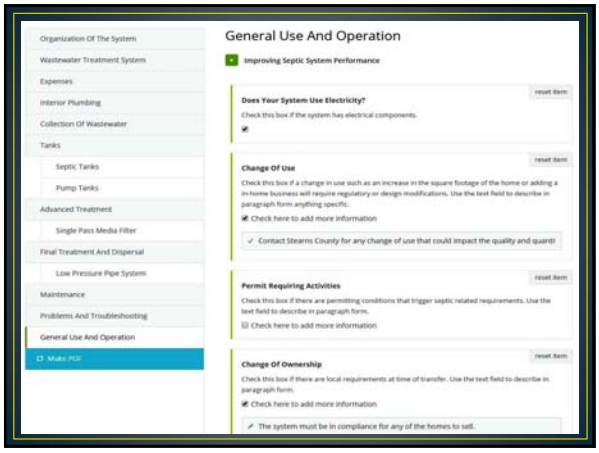












Next steps

H2O&M

- Use the tool!
- Provide feedback
  - sheger@umn.edu
- Small adjustments will be made over time
- Completed example guides are posted to septic.umn.edu/ssts-professionals/forms-worksheets

Acknowledgements

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Questions & more information

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