



DEPARTMENT OF PUBLIC HEALTH
Division of Environmental Health
Onsite Water Protection Section

Our Mission:

“Working with our community to prevent disease, promote health and protect the environment.”

Our Vision:

*“Healthy Durham, Join Us
People, Partners, Places, Policy, Practice”*

Environmental Health Division

Chris Salter: Director

Patrick Eaton: Supervisor, Onsite Water Protection

Marc Meyer: Supervisor, General Inspections

Patsy Gentry: Local Public Health Preparedness Coordinator



Presentation Outline

- ❑ **Onsite Wastewater System Overview**
- ❑ Legal Requirements of DCoDPH and Property Owners
- ❑ Current and Future System Repair Challenges
- ❑ Assistance Programs in Other Jurisdictions

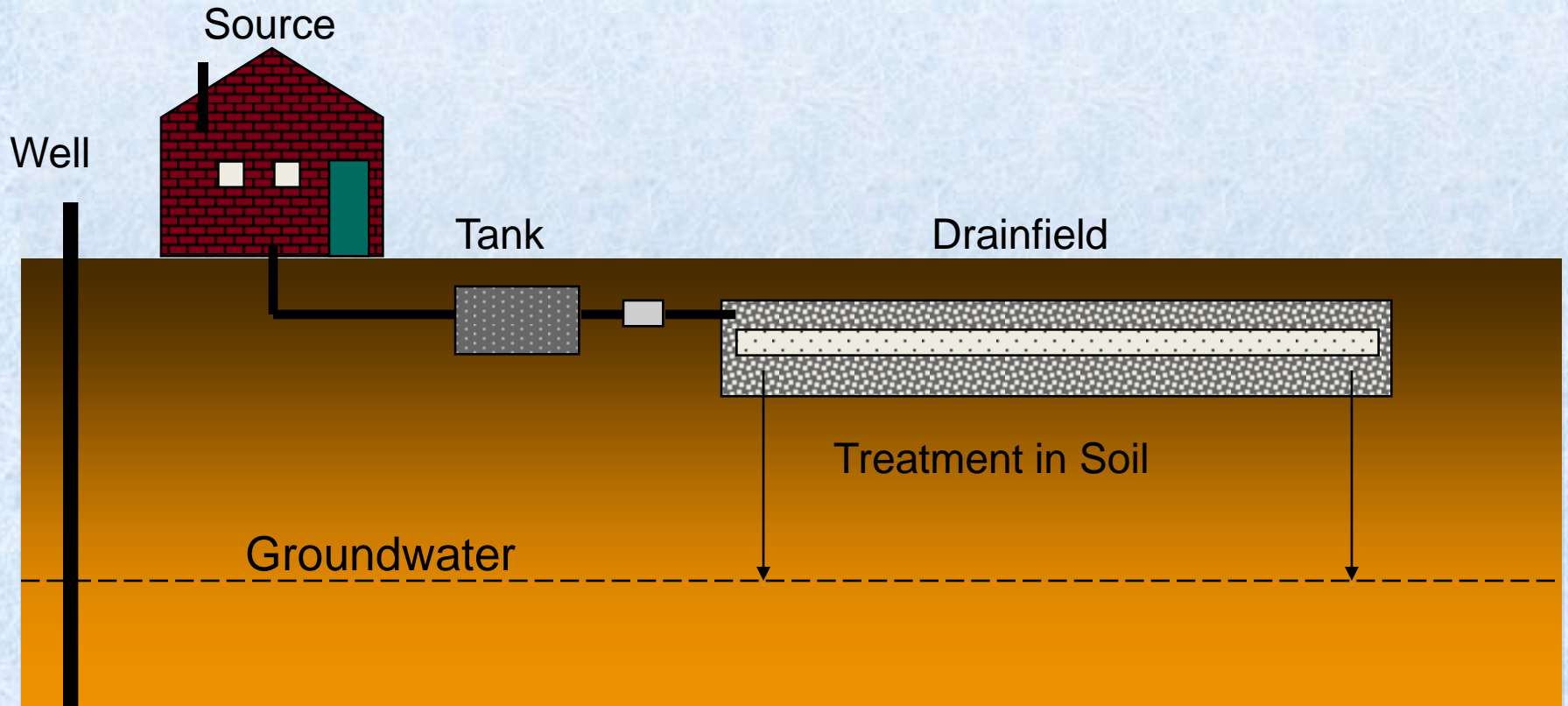


What is an Onsite Wastewater System?

- ❑ More commonly known as a septic tank system
- ❑ Utilized in areas where sewer is not available
- ❑ Consists of 4 major components:
 1. Wastewater source
 2. Septic Tank (pretreatment)
 3. Drainfield (dispersal)
 4. Soil (treatment)



System Components



Soil is the Most Critical Component

- ❑ Treatment and disposal in the soil is achieved through:
 1. Mechanical filtration of pathogens and organic matter.
 2. Aerobic microbial digestion.
 3. Nutrient transformation, adsorption, binding to soil colloids.
 4. Returns treated water to the groundwater.
- ❑ Soil hydraulic loading rate determines size of drainfield.



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Laws and Rules for Onsite Wastewater Systems

- ❑ **NCGS 130A-335(a)** – Any person owning or controlling a residence, place of business, or a place of public assembly must provide an approved wastewater system.
- ❑ **NCGS 130A-335 – 337** – Local Health Departments are required to issue permits for properties that meet the requirements of 15A NCAC 18A .1900 rules.



Maintenance and Repair

- ☐ **15A NCAC 18A .1961** – Any person owning or controlling a property served by a ground absorption wastewater system shall maintain the system to prevent:
1. A discharge of sewage or effluent to the ground surface,
 2. a backup of sewage into the facility, plumbing, tank, or
 3. free liquid surface within 3” of the ground surface.

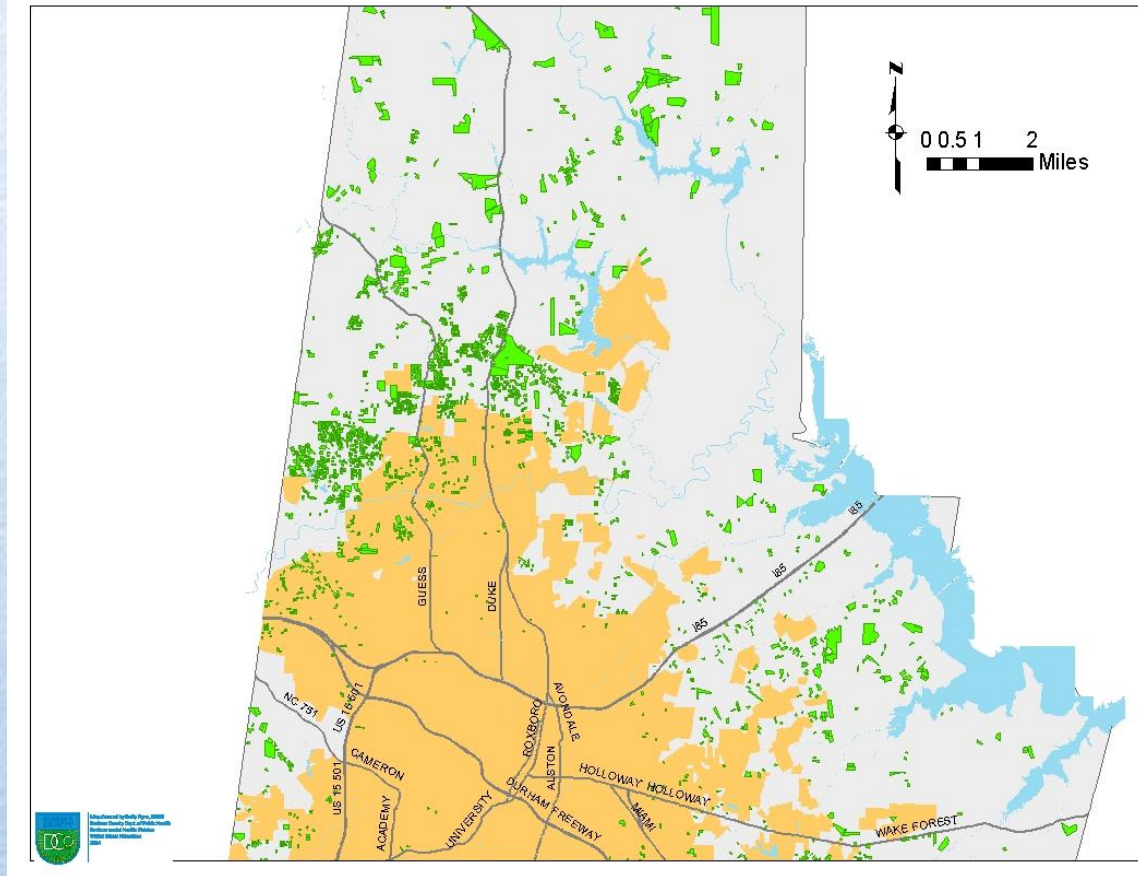


Onsite Wastewater System Service Life

- Onsite wastewater systems eventually fail.
- Average service life in Durham County is **30** years.
- The North Carolina average is less than **15** years.



Map of Known Septic Systems 30+ Years Old



Surface Discharge of Effluent



Courtesy of D.L. Lindbo, NCSU



Notices of Violation

- Environmental Health Specialists must issue a Notice of Violation for any observed malfunction.
- Property owners must be given a minimum of 30 days to correct the malfunction.
- Legal remedies may be pursued 30 days after issuance of a Notice of Violation.
- Environmental Health Specialists do not have citation authority.



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Repair Options

- Connect to municipal sewer (if available)
- Partial repair of drainfield
- Complete drainfield replacement
- Discharging system permitted by NC Div. of Water Resources
- Permanent pump and haul
- Vacate premises and abandon the septic system

These options range in cost from \$500 to \$35,000+



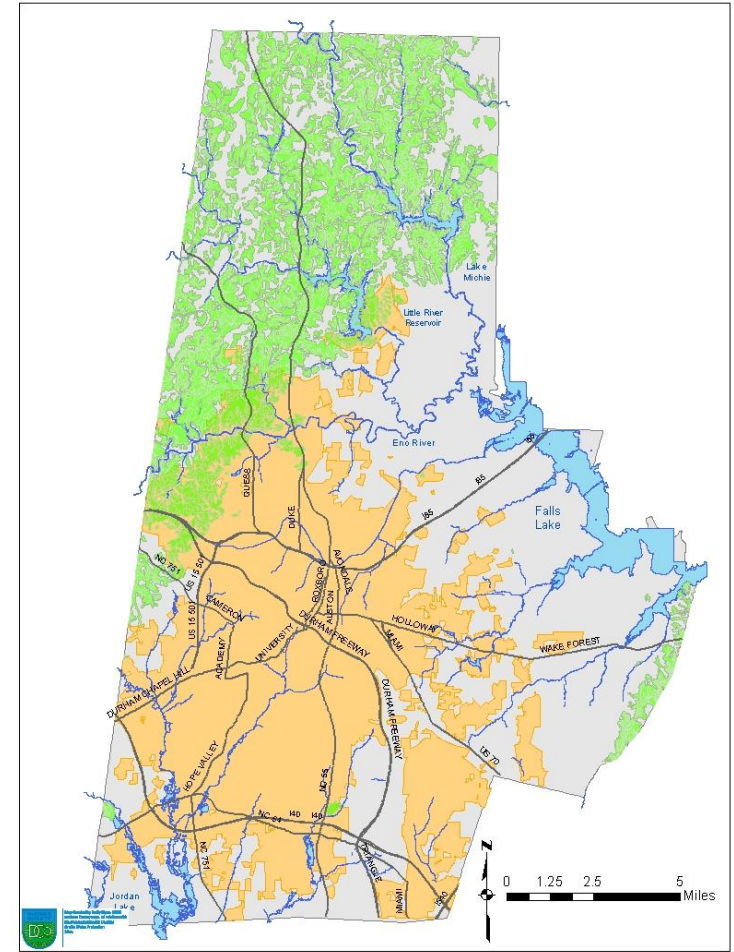
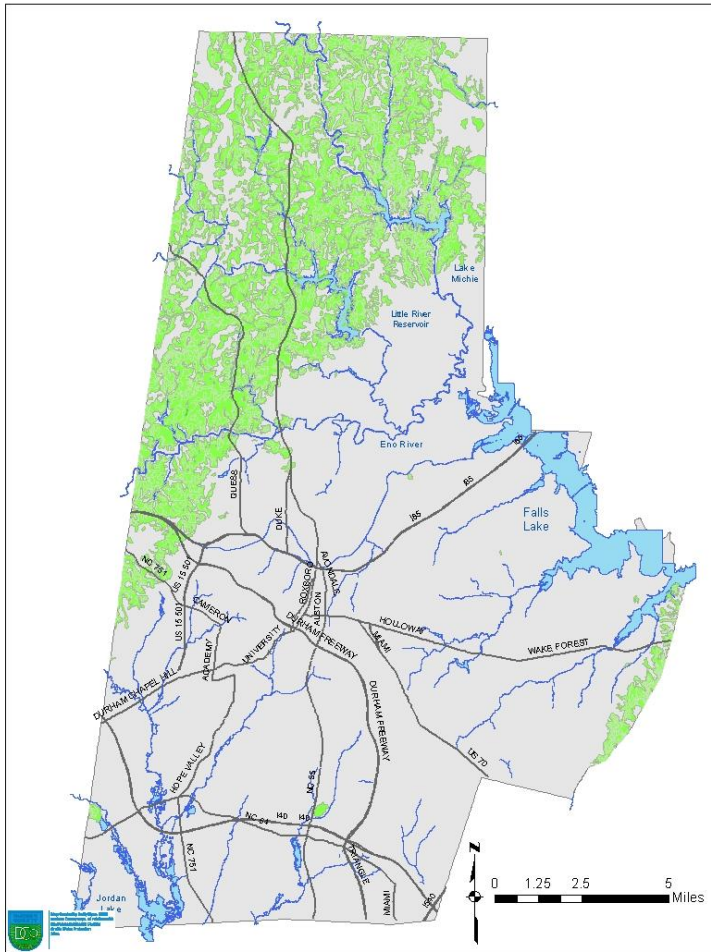
Reasons for Denial of Septic Repair Permit

- Unsuitable soils
- High water table
- Limited or no available space for repair
- Unsuitable landscape position
- Complex topography

Any of these conditions may prevent proper functioning of ground absorptions wastewater system.



Durham Soils Overview



Recent History of Septic Repairs

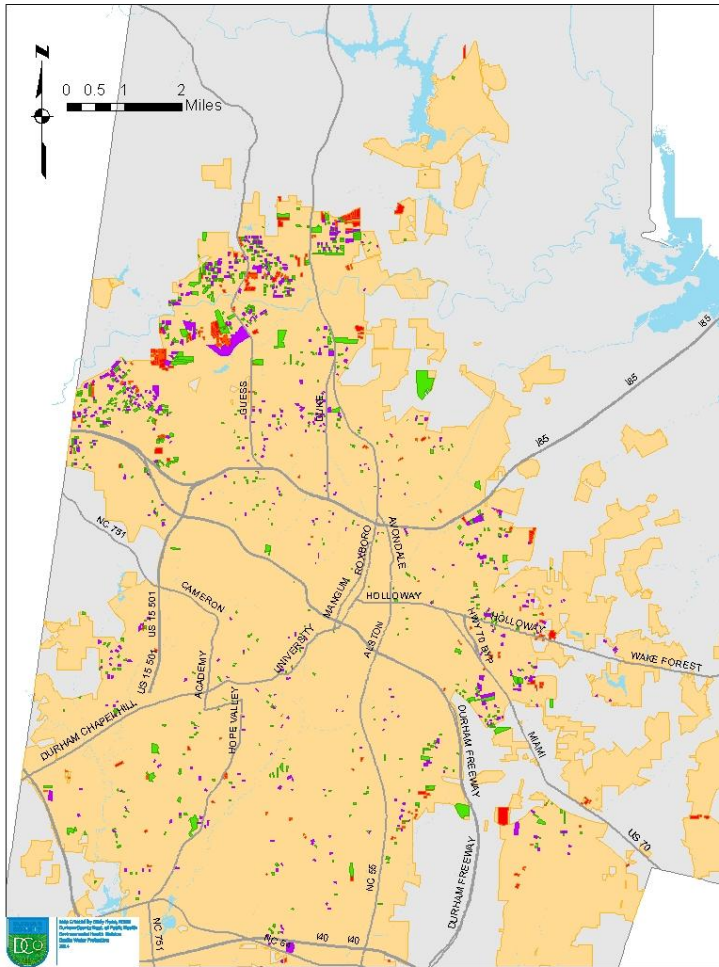
□ During the Period 1/1/2010 through 12/31/2013:

- 72 Notices of Violation Issued
- 177 Septic Repair Permits Issued
- 270 Sewage Complaints Investigated

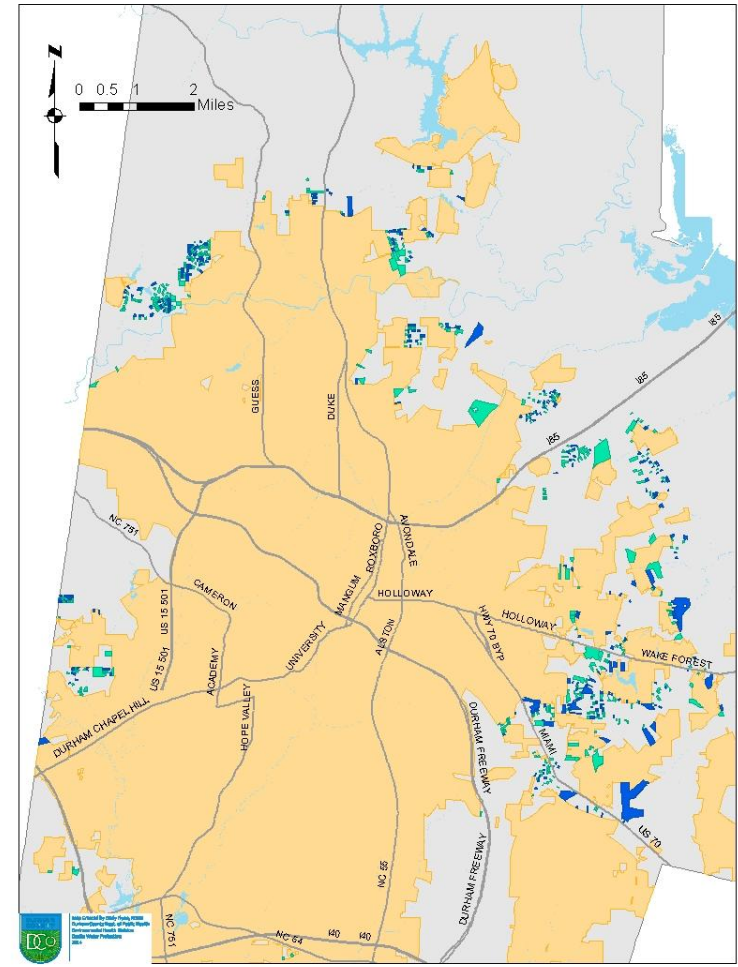


Sewer Access for Parcels Served by Septic

City - 1414



County - 931



Repair Challenges – Cost

- Municipal sewer connection = **\$7500+**
- Complete septic system replacement = **\$5,000 - \$35,000**
- Systems permitted by NC Div. of Water Resources = **\$35,000**
- Permanent Pump and Haul = **\$250 - \$300** per pump truck visit

Not all homeowners have the resources to cover these costs.

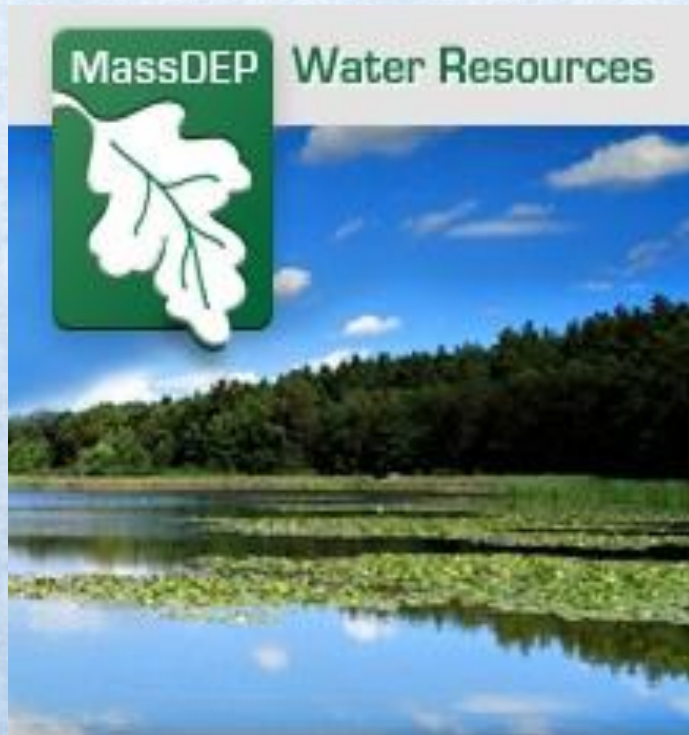


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Commonwealth of Massachusetts



- Community Betterment Loan
(State funds, 0% interest)
- Bank Loan Program
(Private sector, low interest)
- Tax credit (\$6000) to defray
cost of septic repair.



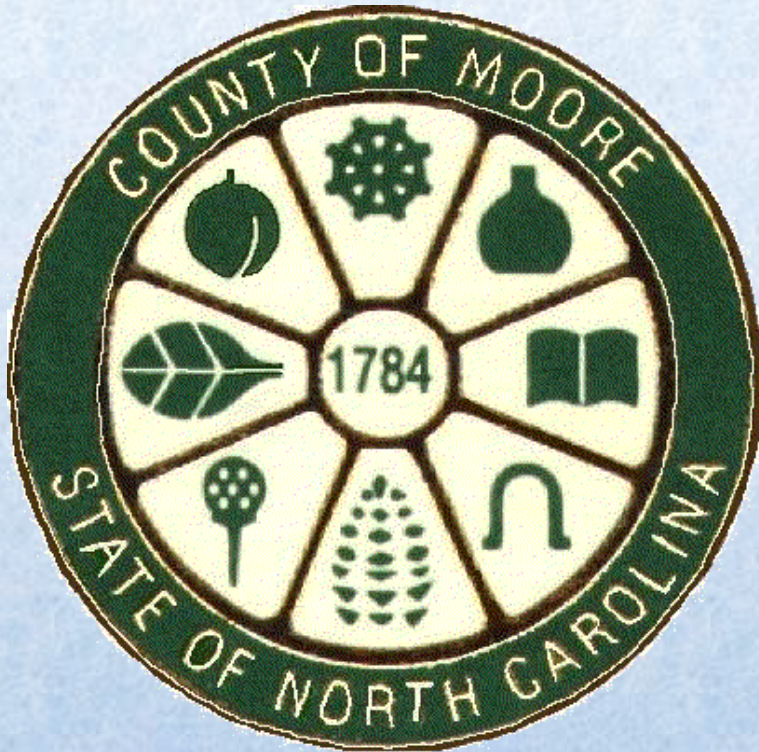
Eugene Water & Electric Board



- Zero Interest Loan Program
- Up to \$10,000 for septic repair
- Funded by grants from State of Oregon



Moore County, NC



- Sewer and Water Assistance Program
- Provides grants or loans for septic repairs
- Funding obtained through foundation grants and lending institutions



Onslow County, NC



- SSSDRIP – Septic System Database, Repair, and Information Program
- Provides grants or low interest loans for septic repairs
- Eligibility based on HUD guidelines



Summary

- ❑ Incidence of septic system failure will increase as housing in Durham County continues to age.
- ❑ Economic burden of septic repair may be insurmountable for some homeowners.
- ❑ Existing programs provide novel approaches to addressing a legal and public health issue.
- ❑ Durham County can benefit from a similar approach.



Questions?

