

Watershed Inspector Training Workshop

2022

Subsurface Sewage Disposal Systems



CONNECTICUT DEPARTMENT OF PUBLIC HEALTH



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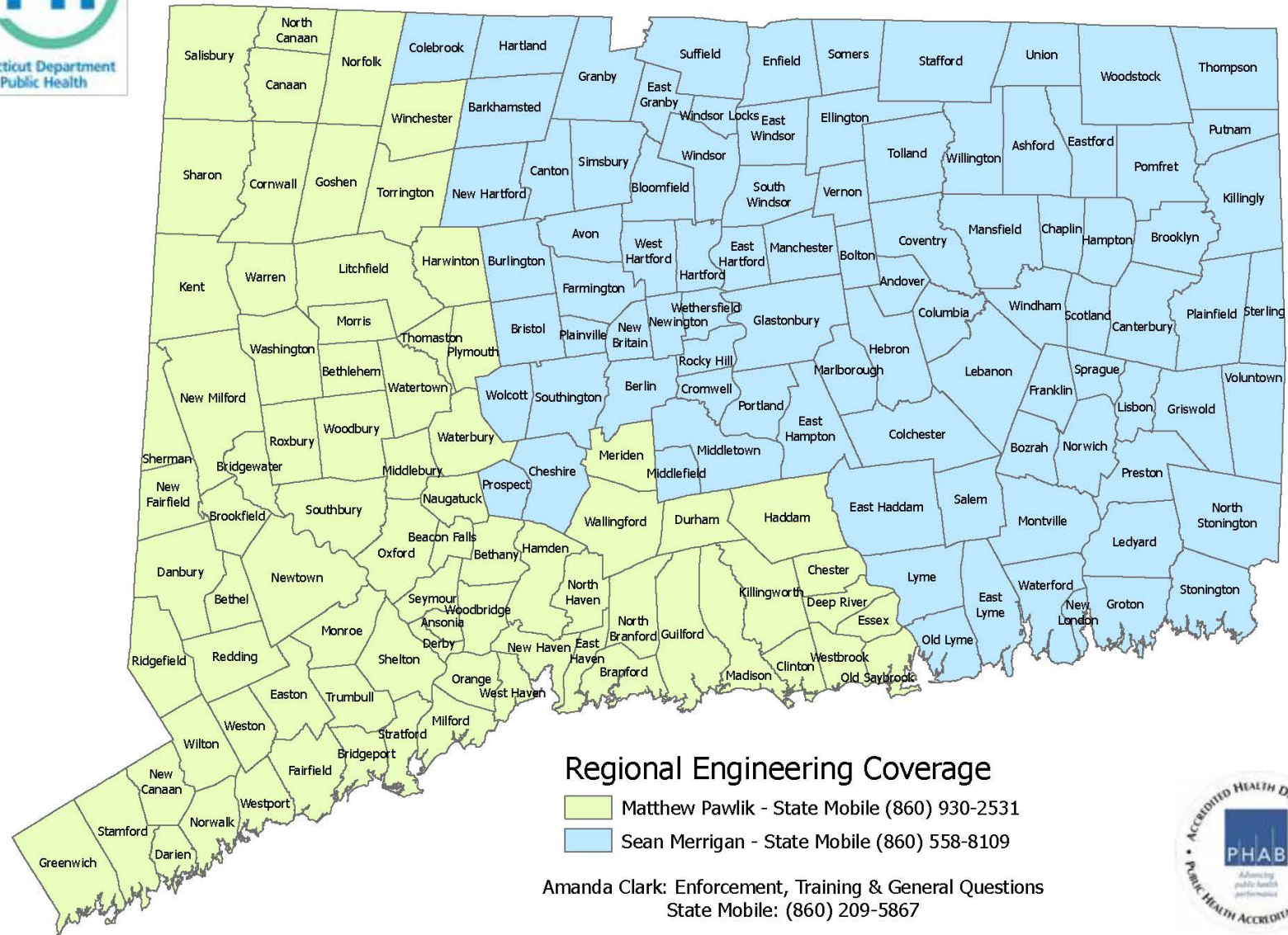
DPH Regulatory Jurisdiction (EEP)



- Conventional subsurface sewage disposal systems (a.k.a. septic systems) up to 7,500 GPD.
- Water Treatment Wastewater - wastewater from well water treatment devices.
- Public pools, crematories, mausoleums, columbarium's, private cemeteries, campgrounds



Environmental Engineering Program



Department of Energy and Environmental Protection (DEEP) Regulatory Jurisdiction



- Subsurface sewage disposal systems over 7,500 GPD
- Municipal wastewater (public sewers)
- Advanced or alternative treatment (AT) systems
- Community systems (multiple residential homes connected to a shared system)

What is Domestic Sewage?

- Water and human excretions
 - toilets
 - bathing water (shower, tub)
 - cooking and cleaning
 - laundry
- Wastewater from restaurants and commercial buildings
- It does not include water from processing, manufacturing, car washing, sanitizing equipment, etc.



How we dispose of domestic sewage?



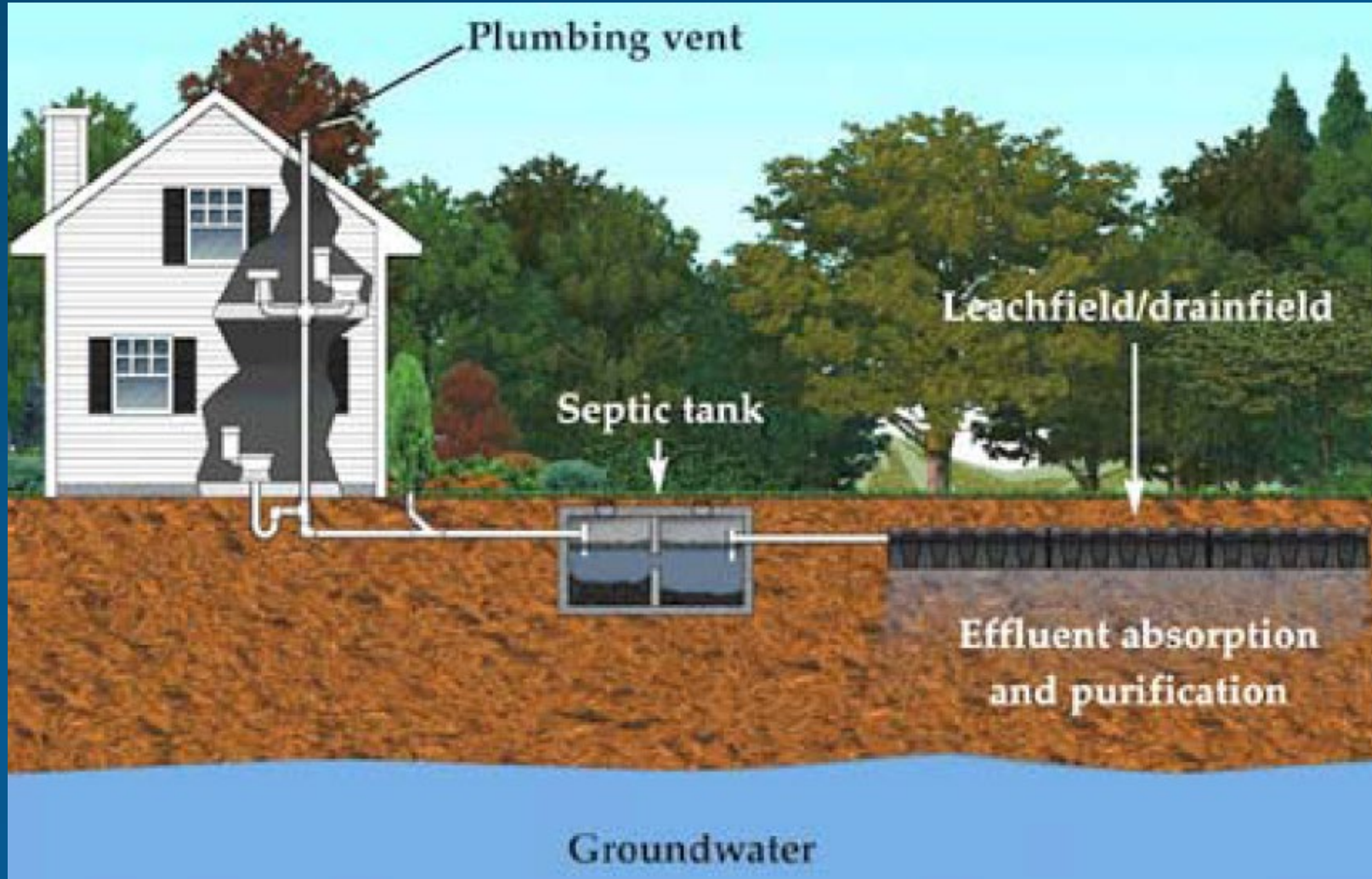
Sewage Disposal via Public Sewers

- Serves approximately 60 percent of the CT population or 2.2 million people
- Predominantly in urban areas and areas of high-density development

Sewage Disposal via Septic Systems

- Serve approximately 40 percent of the CT population or 1.5 million people
- Mainly in rural areas or areas of low-density development
- Include AT systems and large systems under DEEP jurisdiction
- AT systems utilize Nitrogen, Phosphorus, BOD reducing technology via mechanical treatment
- Requires DEEP permit

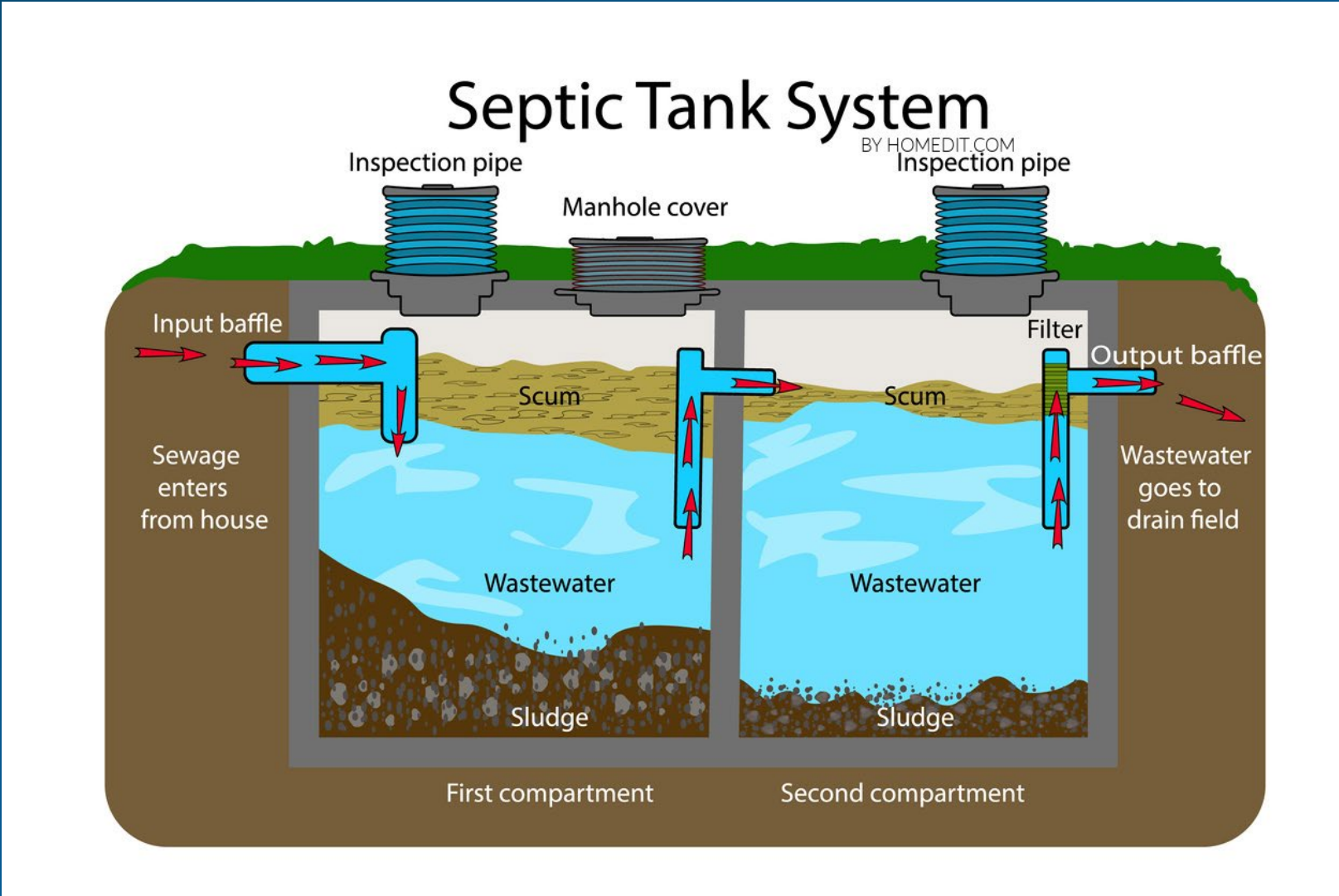
What is an onsite septic system?



Septic tanks



Septic tanks



Leaching systems



Concrete galleries



Concrete galleries



Stone trenches



Leaching pits



Plastic units



Proprietary system



Proprietary system



Cesspools - no longer allowed on repairs

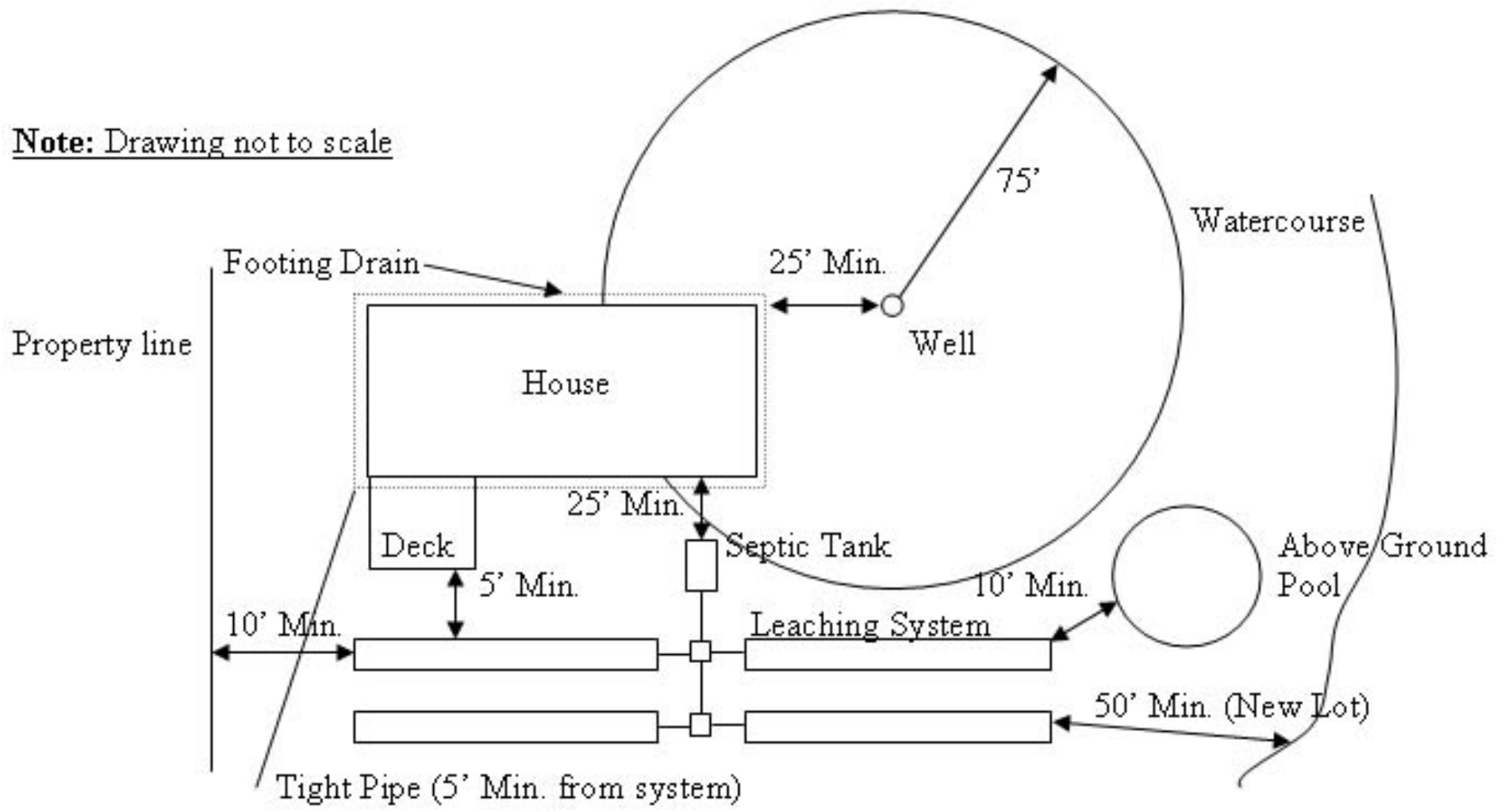


Horizontal separation distances

- Wells – 75 feet minimum for residential
- Property lines
- Watercourses
- Drains – roads, foundations
- Buildings

Horizontal Placement: New Systems

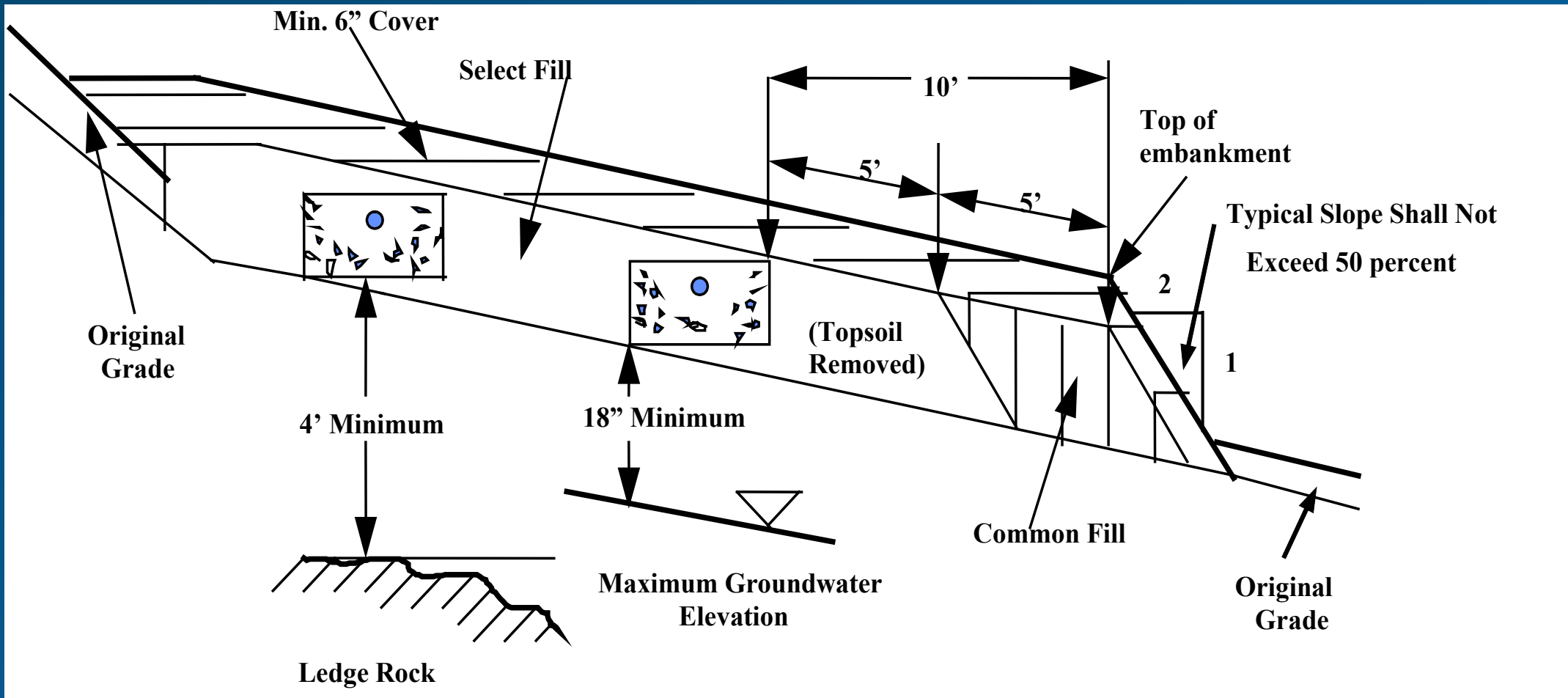
Note: Drawing not to scale



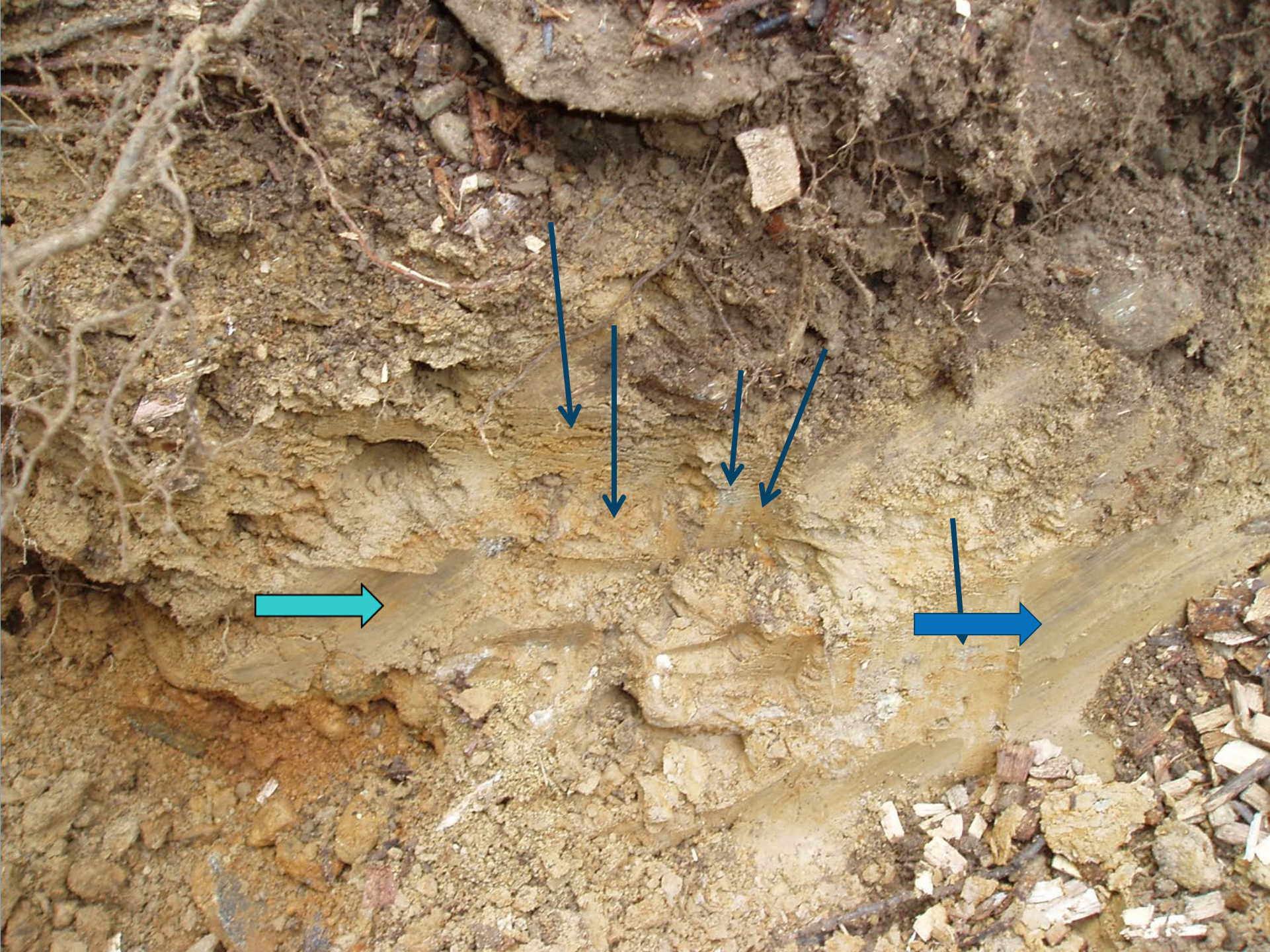
Vertical separation distances

- Groundwater: minimum 18 inches from bottom of leaching system or;
- Groundwater: minimum 24 inches if large system (2K> GPD), fast perc rate (5 m/l or faster), or tidally influenced area (shoreline)
- Ledge rock: minimum 48 inches from bottom of leaching system

Vertical separation distances







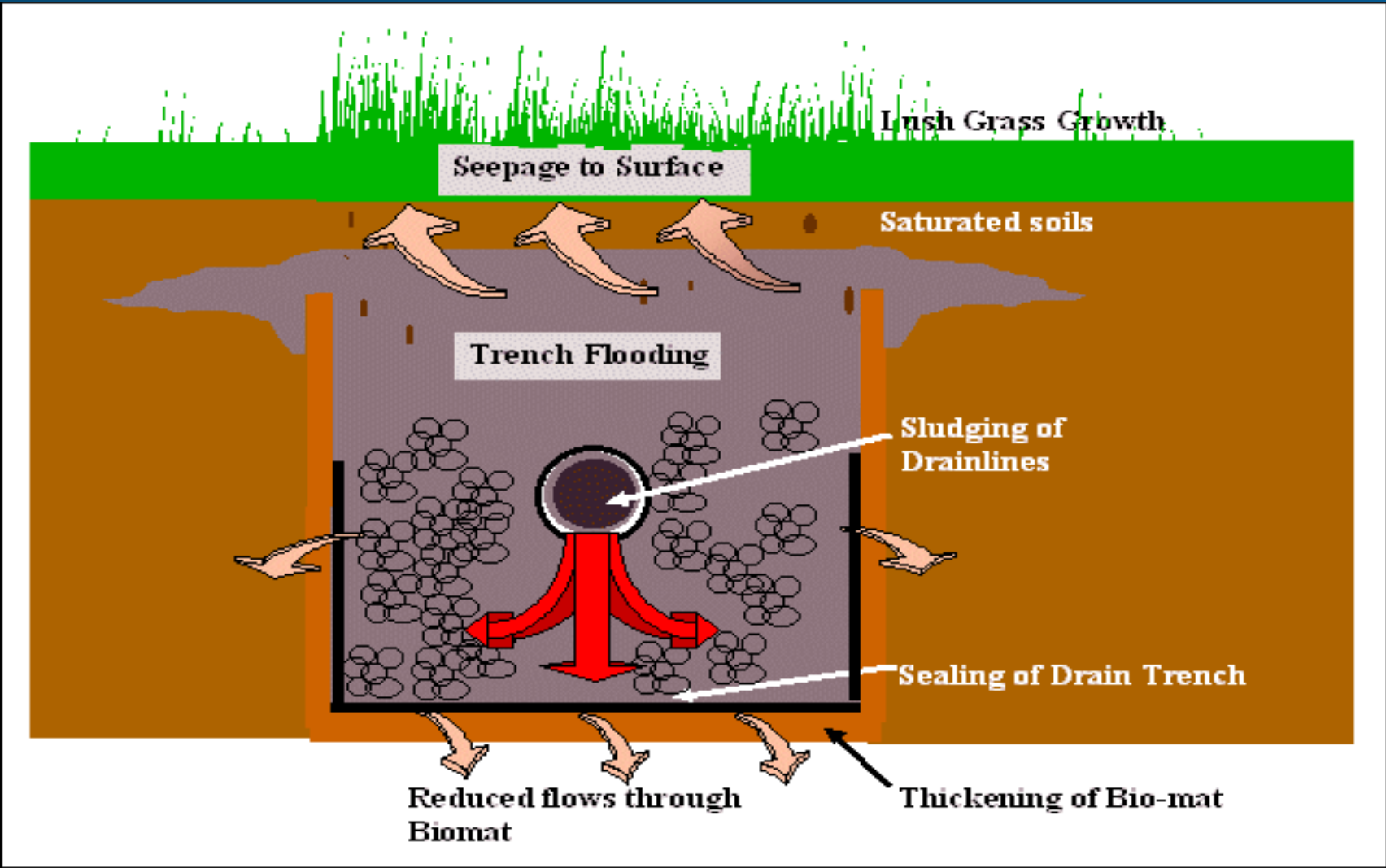
Groundwater Monitoring

- Wet season monitoring (February 1 to May 31)



Properly functioning leaching system should treat and disperse effluent into the surrounding soils without breaking out on the surface or polluting the groundwater.

Over time, even properly installed systems can experience difficulties if misused or not maintained.







Malfunctioning v Failing?

Malfunctioning System

- Backflow into the building or the septic tank at time of tank cleaning
- Areas of lush green grass in septic area
- Sewage odors
- Ponding surface water

Malfunctioning System Causes:

- Excessive water usage
- Clogged septic tank effluent filters
- Broken pipes; damaged septic system components
- Periodically during spring-time or heavy rain events
- Water softeners

Failing system

- If the cause of the sewage discharge to ground surface cannot be corrected, then the system is considered to be failing.
- Once identified, property owners need to hire a licensed septic system installer to replace the system.
- If a property owner does not cooperate in a timely manner, LHD can issue abate orders

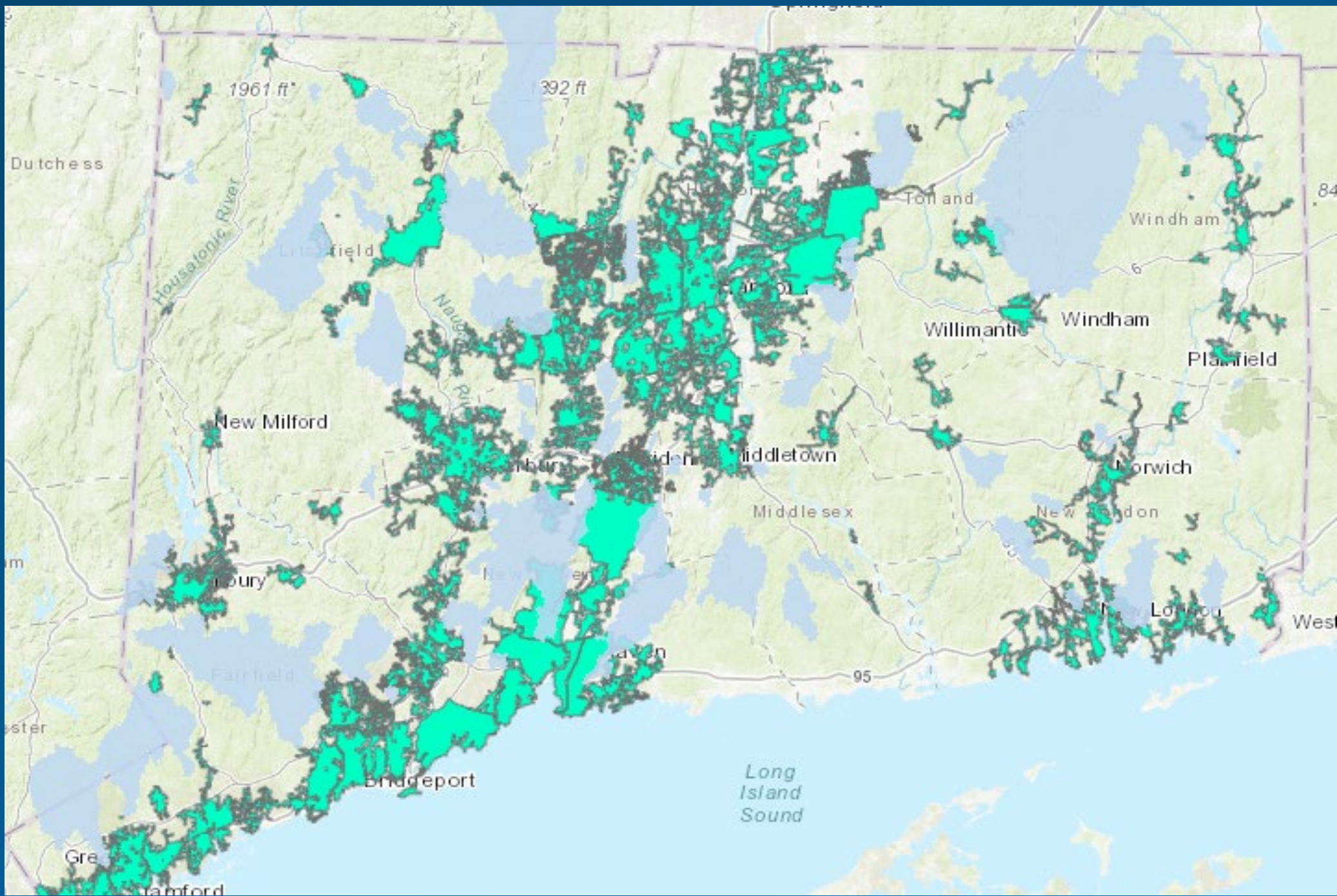








The Watershed Inspection



Prior to performing inspections

Notify the local health departments

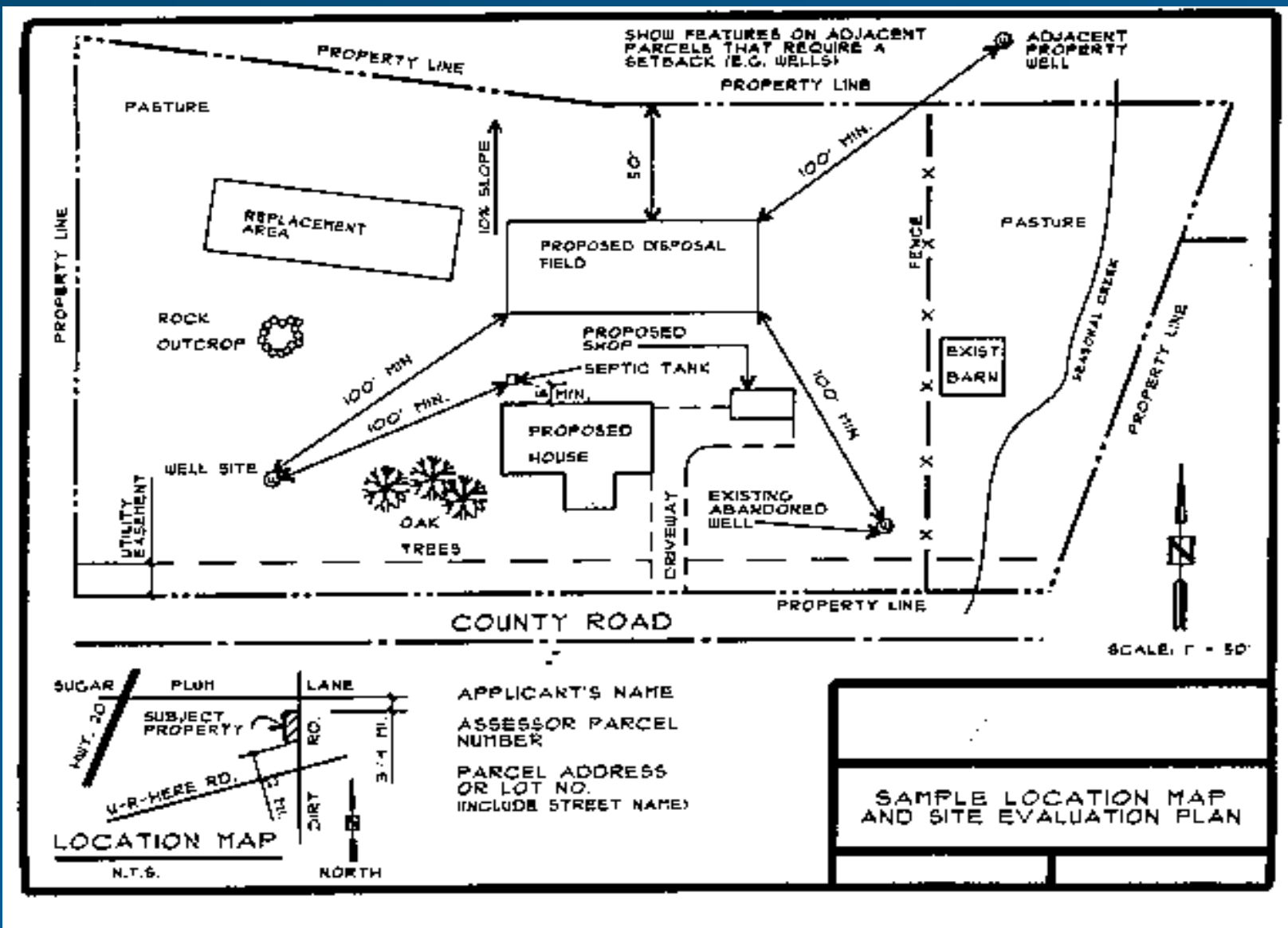
Notify the public

- Local news paper
- Send post cards
- Social Media

Do your research

- Visit the local health department
- Check property files for systems locations

As-built drawing



Look for obvious signs of possible failure



















Use your nose

- Sewage odors in storm drainage piping, catch basins, footing/curtain drain discharges may indicate that sewage is entering these groundwater systems.



Inspection results

- Notify the local health departments of possible signs of septic system malfunction or failure
- Sewage overflowing onto the ground surface warrants immediate attention
- Document findings
- Take photos

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