

Welcome –Branch Chief

- The Drinking Water Section welcomes you to our biannual Watershed Inspector Training.
- Thank you for attending and for the work that you do. It is the first line of defense in protecting our drinking water sources.
- Please continue to develop and maintain partnerships as part of your comprehensive watershed survey program – municipalities, local health departments, state and federal agencies.



2022 DPH Watershed Inspector Training

Watershed Survey Overview and New Technologies

Eric McPhee
Supervising Environmental Analyst
Source Assessment/Protection Unit
CTDPH - Drinking Water Section

Watershed Inspector Training
Agenda
Tuesday, October 15, 2019
MDC Training Center, Hartford

Workshop Goals

- Provide key information on optimizing PWS watershed inspections
- Improve protection of public water supply sources
- Clarify regulatory responsibilities and provide tools to meet those responsibilities
- Share inspection successes, challenges, and questions;

Agenda

9:00-9:30	Sign In
9:30 – 10:15 am	Introduction/Watershed Inspection and Regulatory Overview Eric McPhee, Supervising Environmental Analyst, CT DPH
10:15-12:00 pm (incl. coffee break)	Topic Blitz –presentations on a number of important watershed inspection concepts PFAS, herbicides, agricultural properties Joseph Welsh, Manager – Env. Prot., Aquarion Water Co. Stormwater Facility Compliance, Road Salt Strategies Adam Fox, PE, Principal Engineer, CT DOT Road salt impact on Soils, Agricultural Properties (tile drains/ runoff/buffers), Farm Bill Funding Opportunities Deb Surabian, CPSS, State Soil Scientist, USDA NRCS Jim Hyde, State Agronomist, USDA NRCS
12:00-1:00 pm	Lunch Break
1:00-1:45 pm	Septic Systems – Identifying Problems and Solutions Ryan McCammon, RS, Glastonbury Health Dept.
1:45-2:15 pm	Case Study: Regional Water Authority’s use of GIS to Improve Watershed Inspections Steve Vitko, Watershed Prot. Specialist, Regional Water Authority
2:15-2:30 pm	Proposed legislative changes and regulatory next steps Lori Mathieu, Public Health Section Chief, CTDPH
2:30-2:45 pm	Wrap Up, Questions, Adjourn

Training Contact Hours

- A well-trained, committed and ethical operator workforce, working to assure regulatory compliance, is essential for the security and safety of our public water supplies.
- As watershed inspector and water operator knowledge increases so too does public health protection.
- Expectations – pay attention, phones on vibrate, please step out if you have to take a call

Training Course Certificates/TCHs

- Certificates will be issued at the end of today's course
- Issued only to those who have signed the roster - course is approved for 3.5 TCHs – applicable to all certification types,
- Issued only to those who attend entire course (sign in morning and afternoon)

Drinking Water Section

- Responsible for Implementation & Enforcement of the **Safe Drinking Water Act** and related state drinking water laws
- Regulate 2,550 Public Water Systems (PWS)
- 2.8 million CT residents served – 3.5 million total population
- 150 reservoir systems, over 4,000 ground water sources

Why are we all here today?



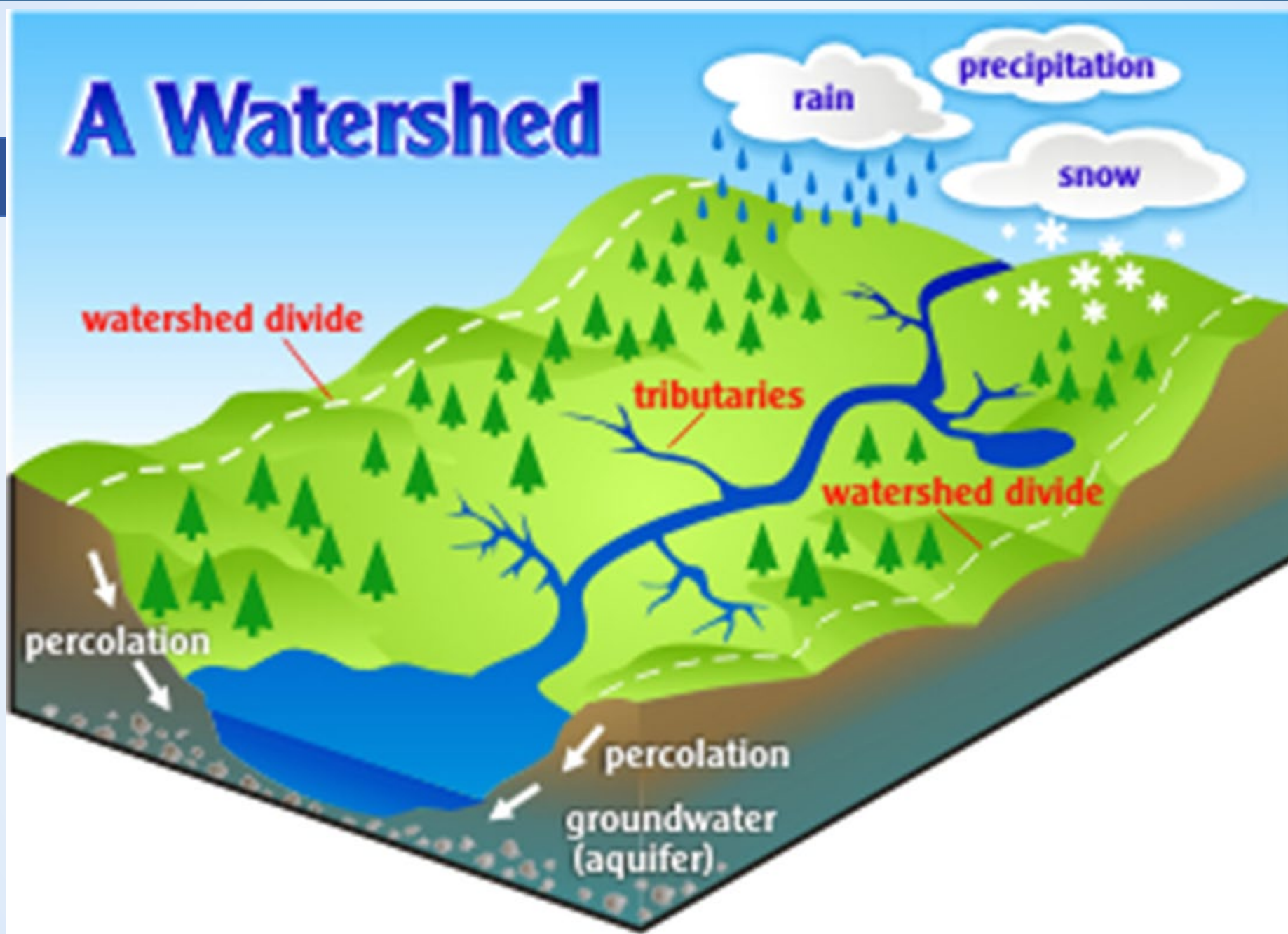
Multi-Barrier Approach to Drinking Water Quality

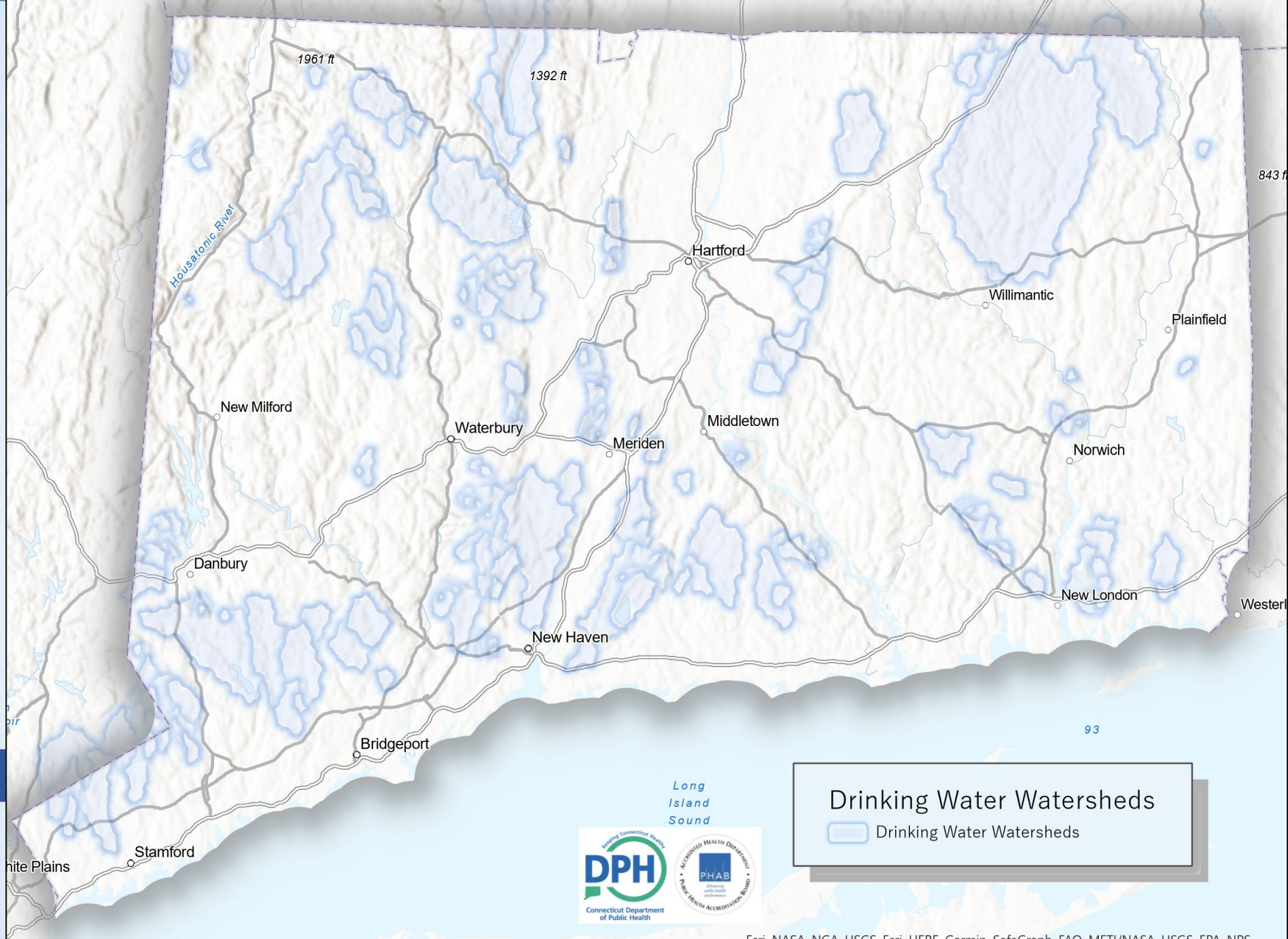
The following steps are an important part of the multi-barrier approach:

- Selecting the best available drinking water source;
- **Protecting the drinking water source from contamination;**
- Using effective water treatment; and
- Preventing water quality deterioration in the water distribution system.

Watershed Inspections = Source Protection

- Protect and Preserve our drinking water
- Watershed inspections are an ongoing effort - the report just captures the previous year's work.
- Consider all things that may impact your water supply and drinking water quality...
- Minimize treatment, infrastructure and O&M costs, saving \$\$





Drinking Water Watersheds

 Drinking Water Watersheds



Esri, NASA, NGA, USGS, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS



RCOSA Section 19-13-B102(b)

- **Watershed survey.** A public water system using surface water as an active source of supply shall make a sanitary survey of the watershed to the intake at least annually. A report on the survey shall be submitted to the Department by March 1 each year covering the preceding calendar year.

- Applies to land and watercourses tributary to a public water supply including surface and groundwater sources

Prohibits:

- accumulation of animal wastes
- sewage discharges
- disposal of toxic metals, gasoline, oils & pesticides

Regulates:

- stormwater drainage facilities
- road salt
- fertilizer applications

CGS Sec. 25-51

- Injunction against injury to water supply or source.The municipality or water company, by its officers or agents duly appointed, or the local director of health, or the local director's agents **may, at all reasonable times, enter upon and inspect any premises** within the watershed tributary to, or aquifer protection area of, such water supply and, if any nuisance likely to pollute such water is found therein, the local director of health or the local director's agent may abate such nuisance after reasonable notice to the owners or occupants of such premises and their refusal or neglect to abate the same, and the municipality or water company shall be liable for all unnecessary or unreasonable damage done to such premises.

Watershed Inspections Guidance



WATERSHED INSPECTION GUIDELINES

Prepared by the
Source Water Protection Committee
of the Connecticut Section of the
American Water Works
Association
2022

Protecting drinking water supplies from contamination is an essential concern for all public drinking water suppliers in the state of Connecticut. Watershed inspections are a vital aspect of a comprehensive source water protection program, which should also include the review of proposed development projects, land use and zoning changes, monitoring of active construction sites and other sites with amplified potential for pollution, and collaborative efforts with municipal and state regulators to mitigate pollution sources that are discovered.

Preparation: Outreach to property owners

- Consider notifying property owners ahead of time
- ID, ID on vehicle
- Social Media
- Website, phone number
- Friendly face
- Handouts

MDC ANNUAL WATERSHED INSPECTIONS BEGIN

Property inspections to begin in the towns of Barkhamsted, Hartland, New Hartford, Burlington, Harwinton, Torrington, Winsted, Avon, Simsbury, Bloomfield and West Hartford

March 9, 2022

For Immediate Release

(HARTFORD, CT) – The Metropolitan District (MDC) will be conducting its state-mandated annual watershed sanitary survey and inspection program beginning in April. The purpose of the program, which will continue through November, is to prevent contamination of the MDC’s drinking water supplies as a result of septic system failure, erosion, runoff, and other potential pollutants.

Routine watershed sanitary surveys are required by Section 19-13-B102 (b) of the Connecticut Public Health Code.

Property inspections will take place in the towns of Barkhamsted and Hartland on the Barkhamsted Reservoir watershed; in New Hartford, Burlington, Harwinton, Torrington and Winsted on the Nepaug Reservoir watershed; and in the towns of Avon, Simsbury, Bloomfield and West Hartford on the West Hartford and Reservoir No. 6 watersheds.

Routine field inspections take only a few minutes and will be conducted by MDC’s Watershed Inspector who carries appropriate MDC identification and drives an authorized MDC vehicle. The Inspector does not enter homes; the inspection is limited to the exterior portions of the real property.

If a violation or an issue is detected, it is reported to the property owner and health officials as required by law.

Property owners may receive more information by contacting the MDC Watershed Management Unit, Barkhamsted Water Supply Division at 860-278-7850 extension 3924.

***About MDC:** The MDC is a nonprofit municipal corporation chartered by the Connecticut General Assembly in 1929. The MDC provides water, wastewater treatment and other services to its member towns: Bloomfield, East Hartford, Hartford, Newington, Rocky Hill, West Hartford, Wethersfield and Windsor. In addition, the District supplies treated water to portions of Glastonbury, South Windsor, Farmington, East Granby and Portland.*

Utility Imposters

→ Related Info

The RWA urges all residents, especially those who are home during the day, to be alert for imposters trying to gain access to your home. Here are some ways to protect yourself from utility imposters:

- RWA employees typically only knock on doors to alert residents of an emergency or major project. When an employee asks to go inside a home, the resident typically called us to initiate or schedule service.
- Be wary of anyone who tries to collect money or offers to test your water.
- All of our employees whose jobs involve visiting homes and businesses wear clothing with the RWA logo and drive a clearly marked vehicle. Look for the logo, and always ask to see the person's RWA photo identification card.
- If you have any doubt about the individual's identity or motives, or the authenticity of their credentials, maintain a "No Identification – No Entry" policy. Do not allow them into your home, and call the police.
- If you want to confirm an RWA employee's identity, call us at [203-562-4020](tel:203-562-4020).

- [AARP Scam Alert >](#)
- [FTC Consumer Information on Scams >](#)
- [Utilities United Against Scams >](#)





Watershed Inspection

Watershed Inspection and Drinking Water Quality

The Watershed Inspection is a review of the individual properties that are located within the watershed boundaries. A watershed is defined, by topography, as the area of land that drains to one body of water. The rain and snow that falls on watershed land in Ledyard and Groton becomes the water that feeds local streams, brooks and reservoirs. From the reservoirs water is treated at Groton Utilities Water Treatment Plant and then distributed to customers as drinking water.

Connecticut Public Health Code requires water supply companies to conduct the Watershed Inspections annually as a way to protect water quality and prevent pollution of drinking water at its source.

How does the Watershed Inspection work?

At the start of the yearly inspections Groton Utilities sends a letter to known property owners in the watershed. This letter provides residents with the timeframe of the inspections. Groton Utilities Watershed Staff then visit properties in the watershed. The brief inspections focus on the exterior of the property – Watershed Staff do not enter homes. Residents are welcome to be present for the inspection. The inspection focuses on aspects that have potential for pollution including function of septic systems, onsite tanks and wells, use of fertilizer and pesticides, and waste disposal among other things.

For businesses and sites with other uses Watershed Staff have a brief questionnaire that addresses hazardous materials, tanks, manure management, emergency spill plans and other items.



What if there is a problem?

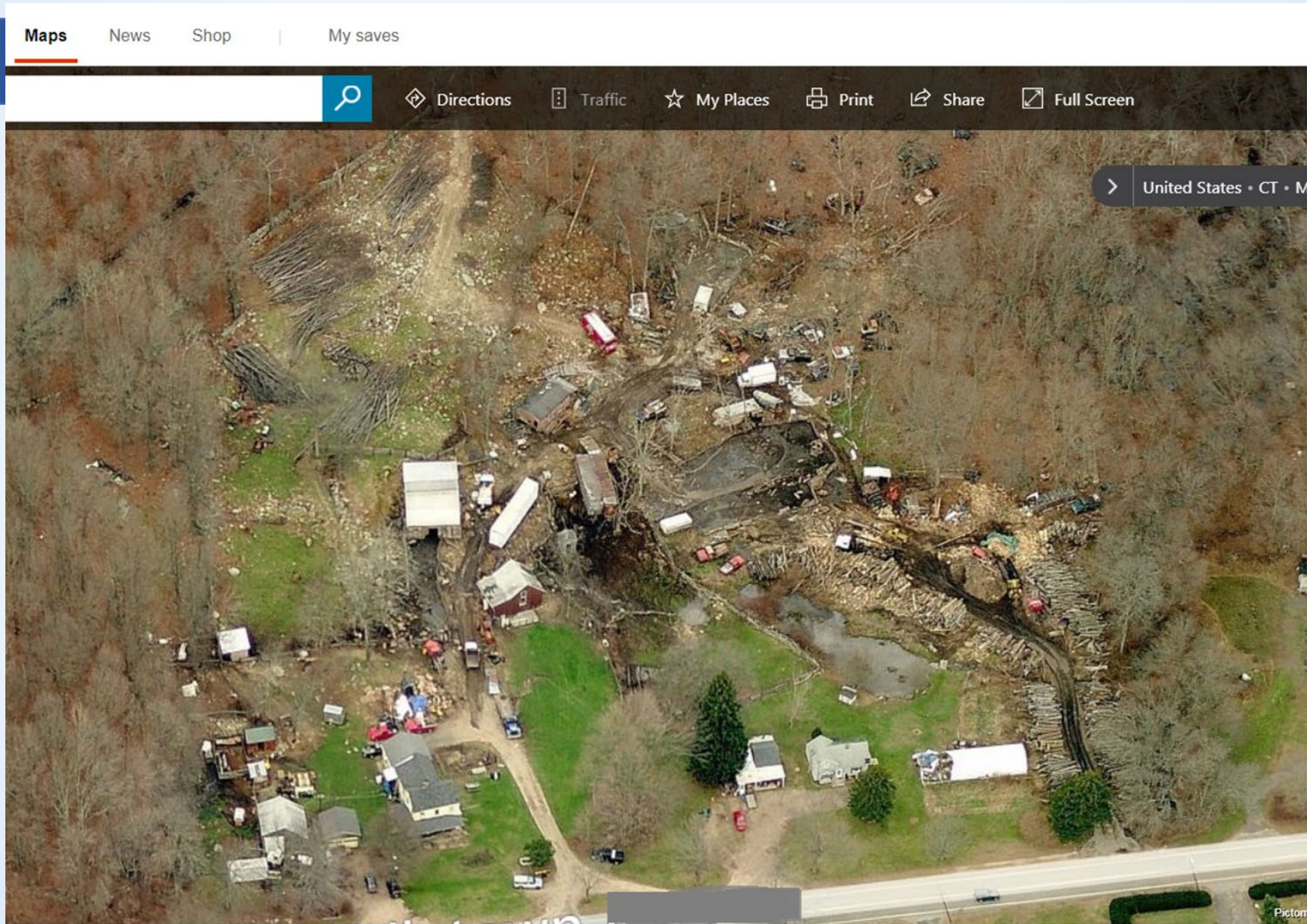
Conducting Your Inspection

- No properties should be excluded from consideration: residential, commercial, industrial, agricultural, open/protected space, municipal, yours (water company land)
- **PARTNERSHIPS** - maintain relationships with partners to address shared problems
- Know your watershed(s)
- Maintain an inventory of historical concerns year round

Conducting Your Inspection

- Start with: septic systems, fuel storage, chemical storage, pesticide/fertilizer storage, erosion, runoff, animals, dumping
- More frequent visits to problem areas
- Don't rely solely on last year's list
- Use technology to your advantage

Aerial Photography



- Should be on your radar and part of your survey
- Early identification makes removal/mitigation easier
- Training suggested

Watershed Inspections

Support

Conducting Your Inspection

- Consider a Geographic Information System (GIS) as a planning and tracking tool:
 - Watershed
 - Sewer/septic
 - Zoning
 - Previous inspections/problems
 - Parcels
 - Other Data (DPH, DEEP, Municipal, etc.)

If you identify evidence of a spill:

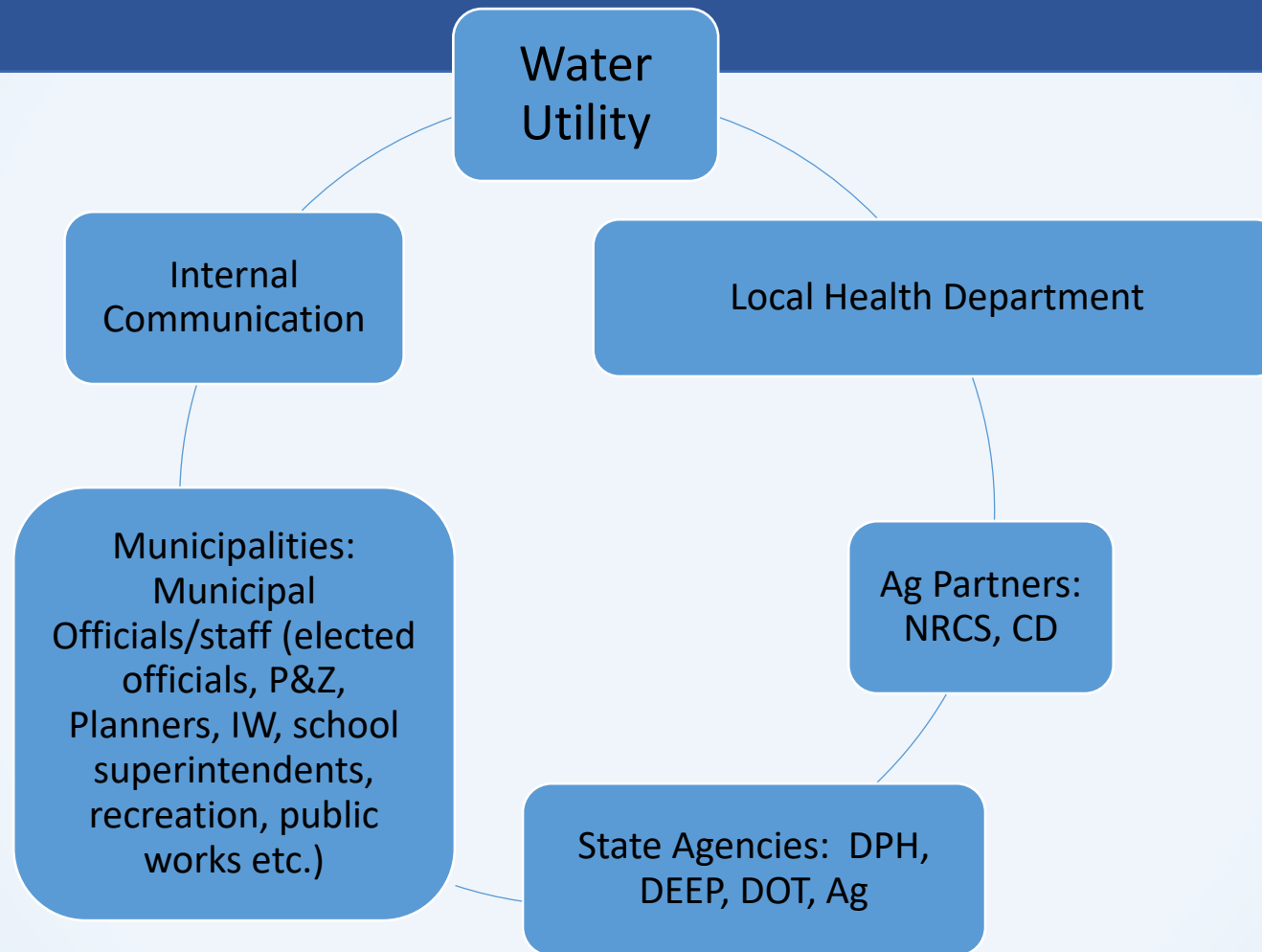
[Spill Reporting \(ct.gov\)](http://ct.gov)

The Department of Energy and Environmental Protection (DEEP), Emergency Response Unit, **860-424-3338 or toll free 1-866-DEP-SPIL (1-866-337-7745)**, 24 hours/day. Should these number become unavailable for any reason, call 860-424-3333.

Immediately after the spill you are required to report facts such as:

- the location;
- the quantity and type of substance, material or waste;
- the date and the cause of the incident;
- the name and address of the owner; and
- the name and address of the person making the report and his relationship to the owner.

Establish and Maintain Partnerships



More tools

- Previous Watershed Inspector Trainings presentations are online
- An inspection template (MS Excel) is available on the DWS website
- A GIS Map has been developed for your use

<https://portal.ct.gov/DPH/Drinking-Water/DWS/Source-Water-Assessment-and-Protection>

More tools

- More help is on the way, statewide GIS property analysis
- Handout: Clean Water and Your Health
http://ctawwa.org/images/downloads/Resources/clean_water_and_your_health.pdf
- Are drones an option?
- CTAWWA Source Water Protection Committee

ArcGIS Survey123 Demo

Watershed Inspection Record - Town of Perfectwater Water Utility

Assist with maintaining your favorite trail by reporting any hazards or maintenance needs observed during your hike.

Inspector Name (Dropdown)

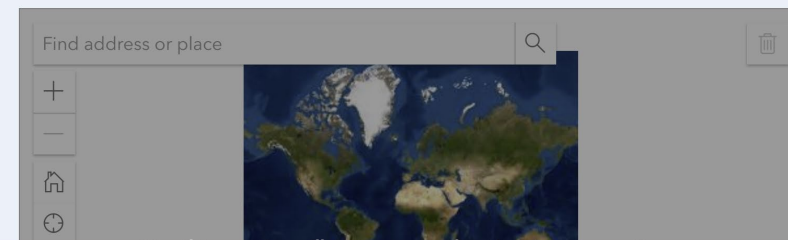
Observation date and time*

Business/Resident Name

Name of Property/Property Owner

Location

Indicate the location of the hazard/maintenance need.



Source Water Protection GIS

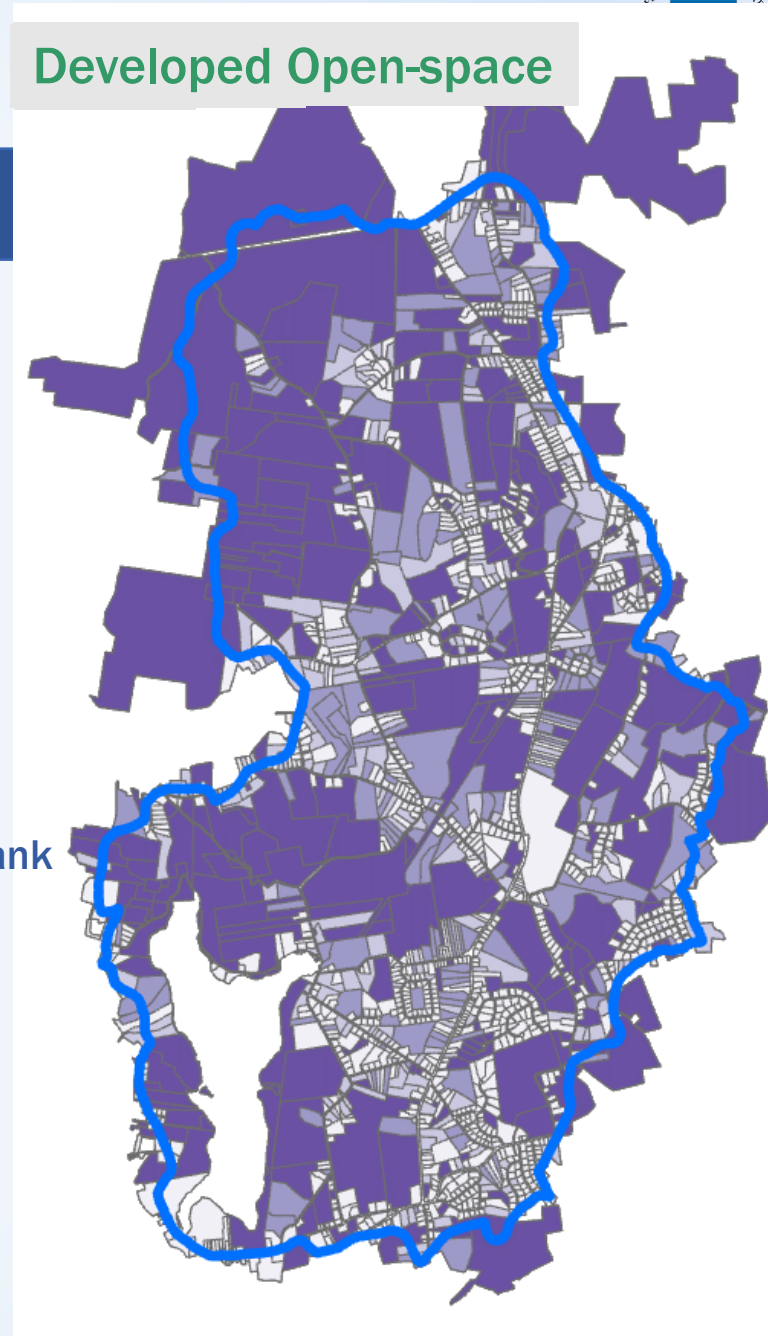
- **Ranks all Parcels in Connecticut on their value in protecting drinking water**

- NRCS discretionary funding
- Advisory Board
- CLEAR (Center for Land Use Education and Research)

- Assist water utilities in watershed surveys, land acquisition
- Assist municipalities in making smart land use decisions
- Identify most effective use of funding for acquisitions, easements, remediation projects

Land Cover Metric

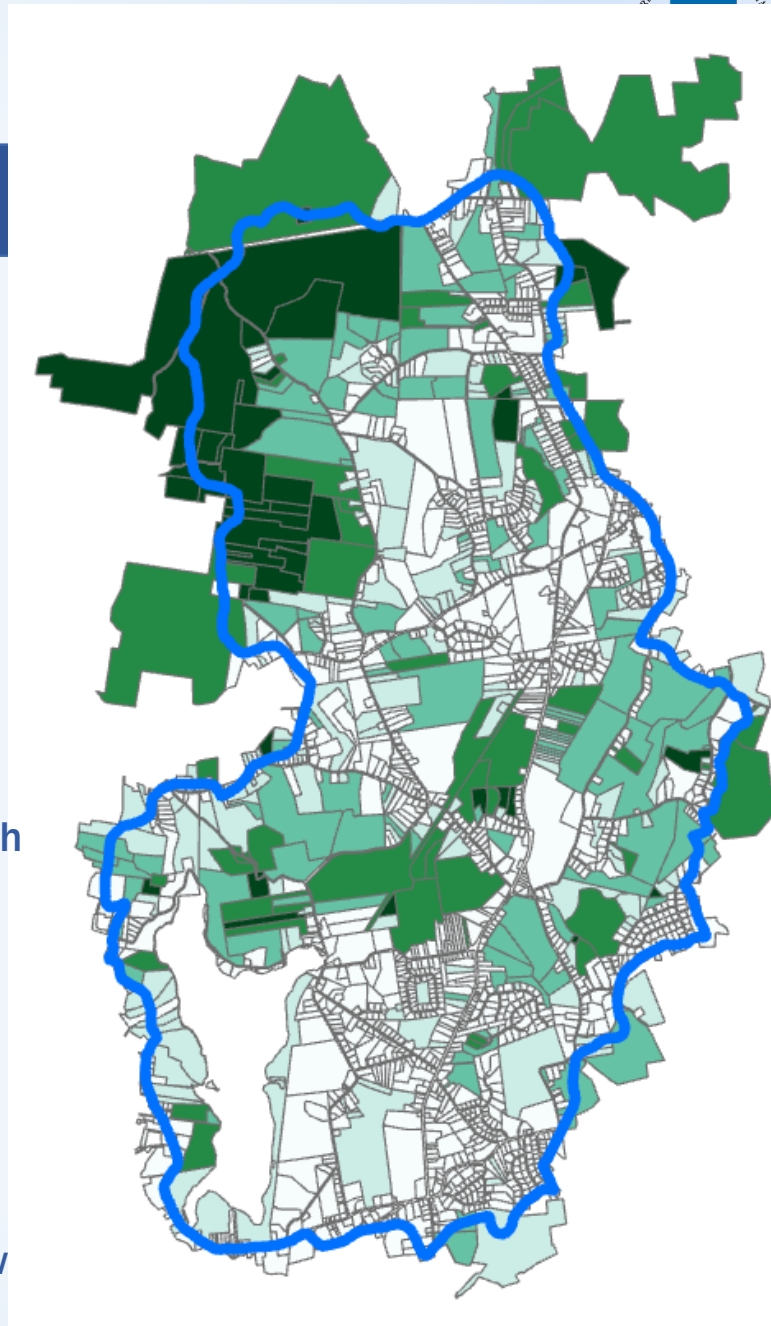
- Input Data – NOAA 1m land cover
- Methods
 - Calculate percent of parcel that is
 - ✓ Forest
 - Higher forest%, higher rank.
 - ✓ Impervious
 - Lower impervious%, higher rank.
 - ✓ Developed Open-space (turf)
 - Lower turf%, higher rank.



Core Forest Metric

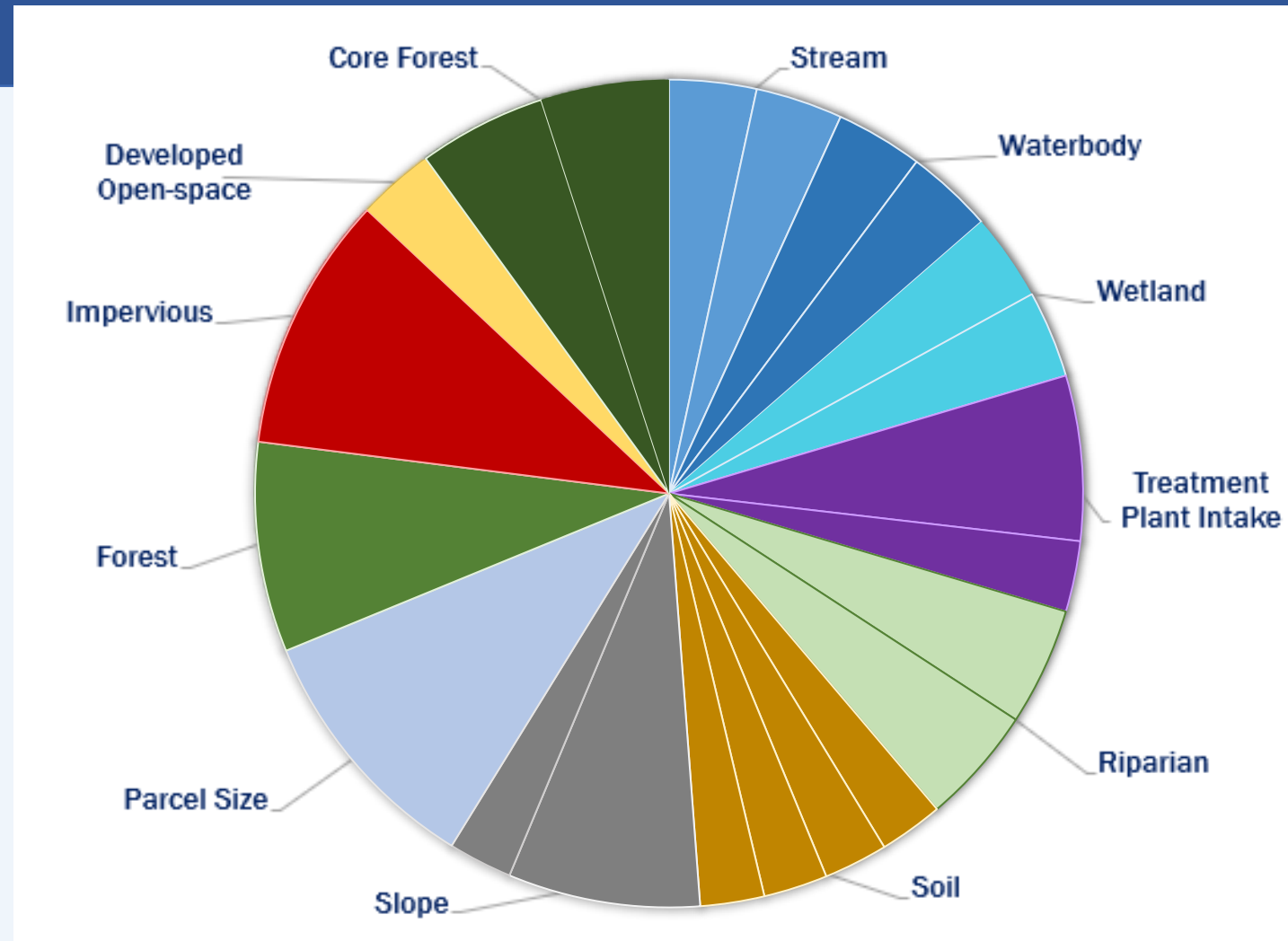
- Input Data
 - CLEAR 2015 30m Forest Fragmentation
 - ✓ small
 - ✓ medium
 - ✓ Large core forest
- Methods
 - Calculate percent of parcel that is core forest
- Rank
 - Higher percent of core forest, higher rank.

High
Low



Metric Weights

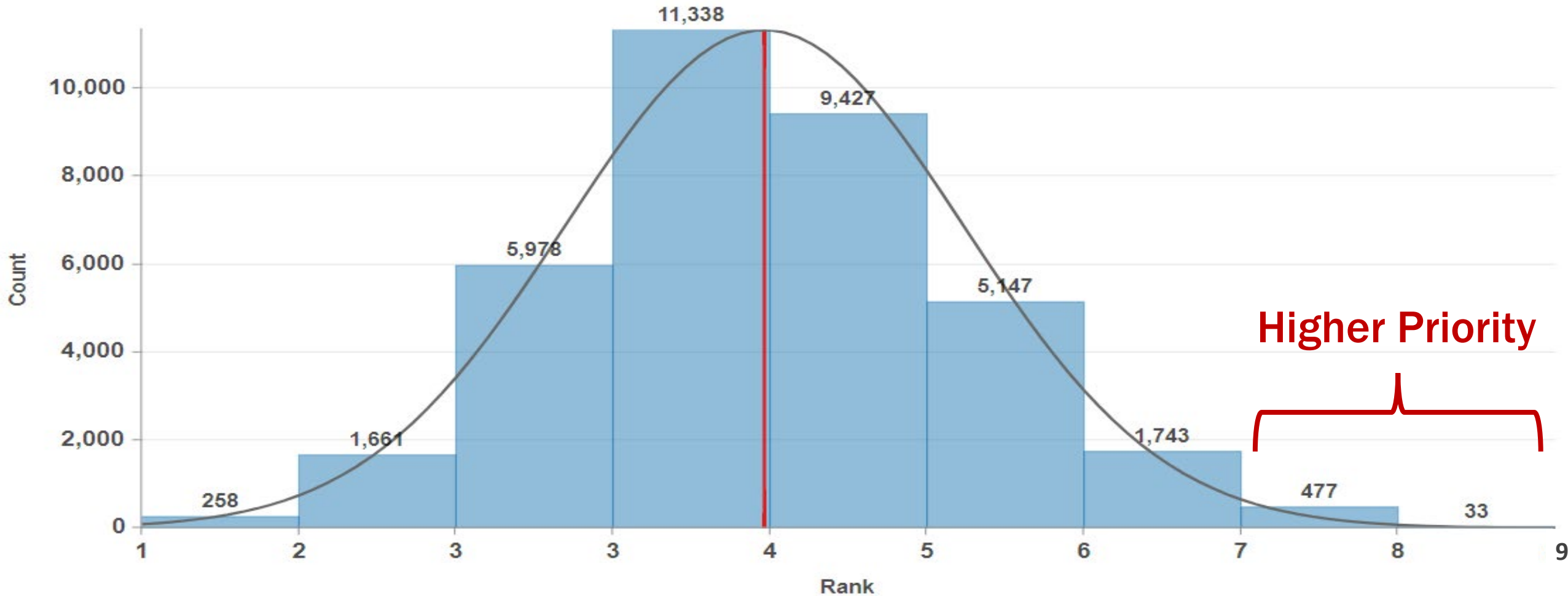
- More important metrics get higher weights.
- Sum of weights = 1
- The weight of a metric is divided among each sub-metric.
- Determined by expert opinion



Summarize Parcel Ranking

$$\text{Rank} = \sum \text{Weight} \times \text{Metric Score}$$

Score range 0 - 10



Source Water Protection Map Viewer

Zoom to

Parcel ID: 20_727

Rank: **7.49** out of 10

Town: Burlington Acre: 458.95

1a. Stream Metric

- Distance to stream: 0 ft Score: 10.00
- Length of stream: >5000 ft Score: 10.00

1b. Waterbody Metric

- Distance to waterbody: 0 ft Score: 10.00
- Percent of waterbody: 1.06% Score: 3.33

2. Wetland Metric

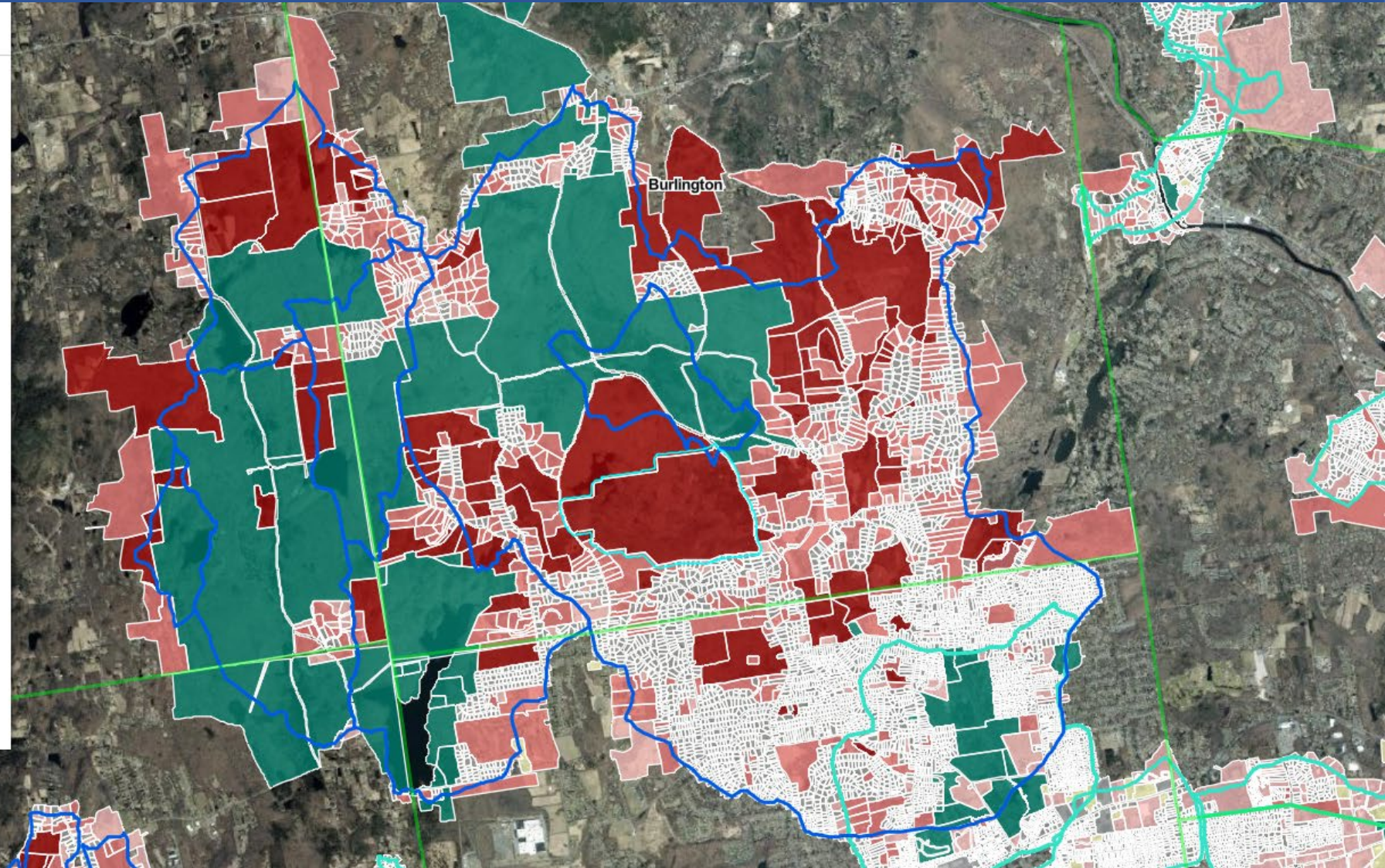
- Distance to waterbody: 0 ft Score: 10.00
- Percent of waterbody: 14.09% Score: 6.67

3. Intake Treatment Metric

- Distance to treatment buffer: >1000 ft Score: 0.00
- Distance to intake reservoir: >1000 ft Score: 0.00

4. Riparian Metric

- Area of riparian zone: 98.06 acre Score: 6.67
- Percent of riparian zone: 21.37% Score: 5.00



Review

- Know your watershed
- Understand the law and your authority
- Notify property owners, police, town in advance
- Know what to look for
- Track recurring/unaddressed issues
- Document your findings
- Know what to do next if you identify a problem (know your partners)
- Follow up
- Submit report by March 1

Thank you

Eric McPhee

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