

Hot Spot Monitoring

A unique opportunity for public private
partnership

Chris Hirsch
Environmental Scientist

**Neponset River Watershed
Association**



Hot Spot Monitoring

Focused monitoring with the goal of finding and eliminating pollution sources



Part 1: Finding the pollution source

- Targeted sampling
- Talking with town and gathering inside knowledge
- Inspecting catchment areas



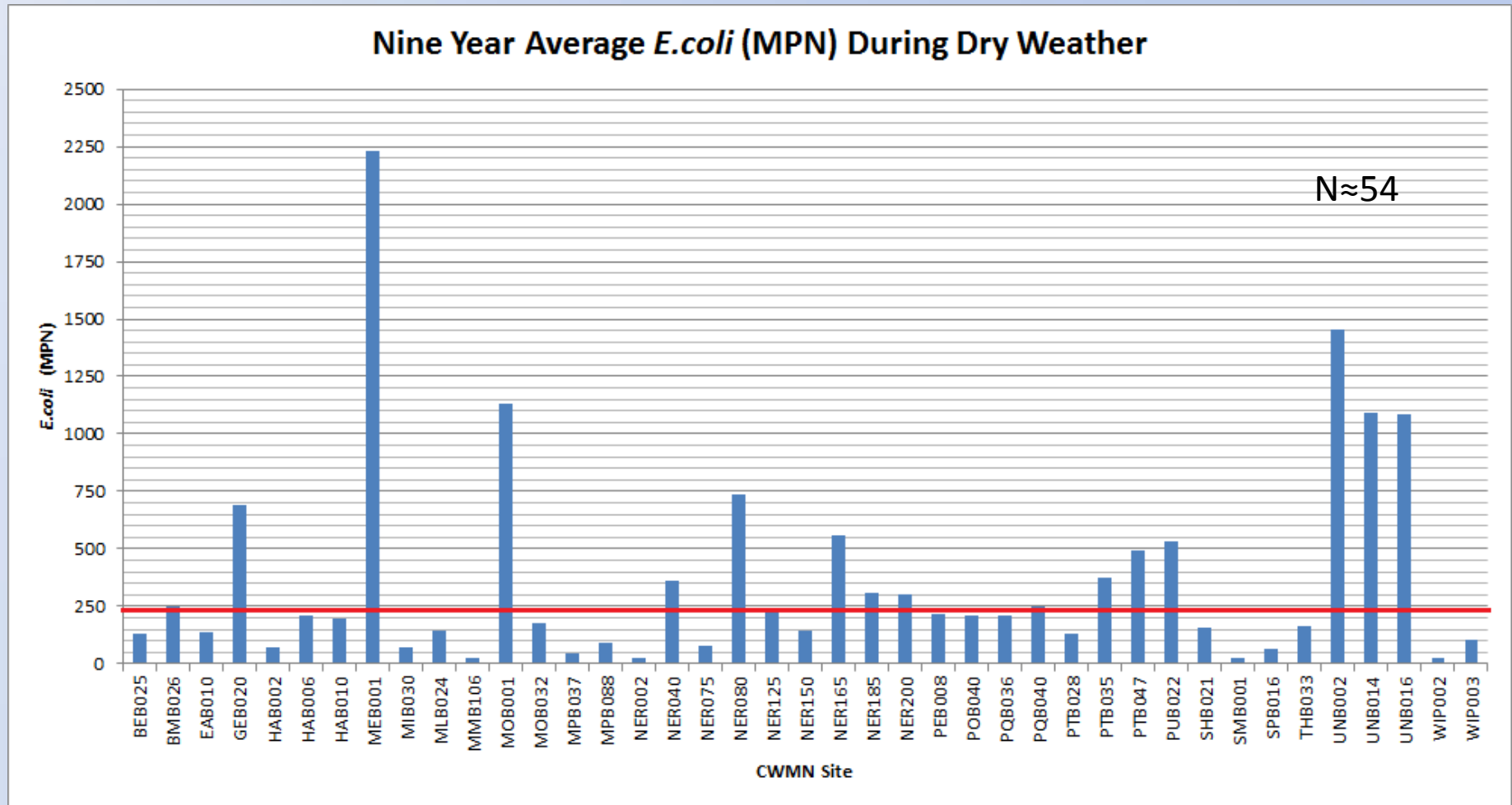
Part 2: Eliminating the pollution

- *Requires partnering with towns for:
- Sewer repairs
 - Stormwater retrofits
 - Water withdrawal optimization

Where Are The Hot Spots?

- Anecdotal Reports
 - Example: Sharon conservation agent mentioned soapy discharge coming from an outfall during dry weather.
- Follow up on previous monitoring projects
- Look at available water quality data
 - Citizen Water Monitoring Network
 - MWRA and MassDEP data

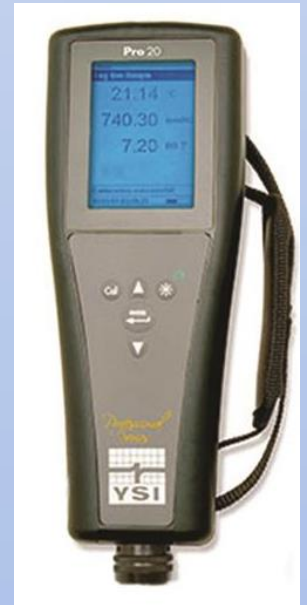
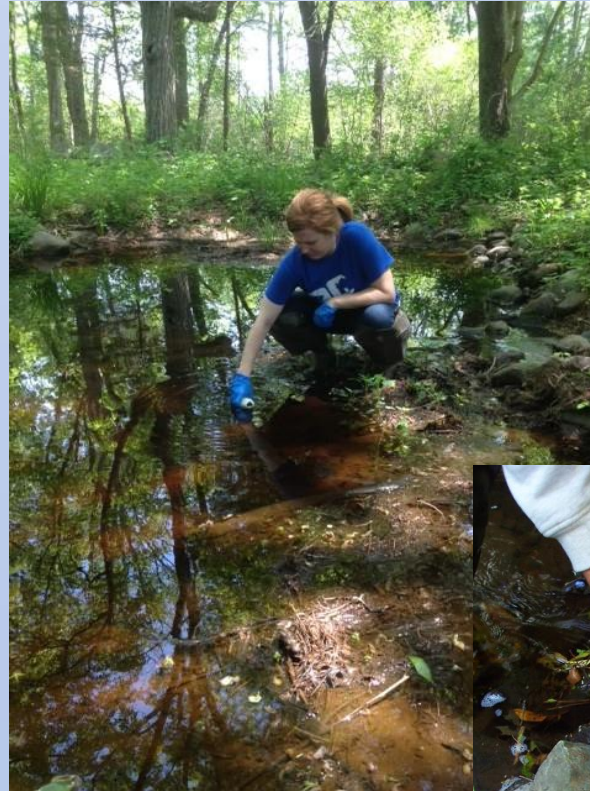
Site Selection Example



Class B water quality standard => No single sample shall exceed 235 cfu/100mL

What Do We Monitor?

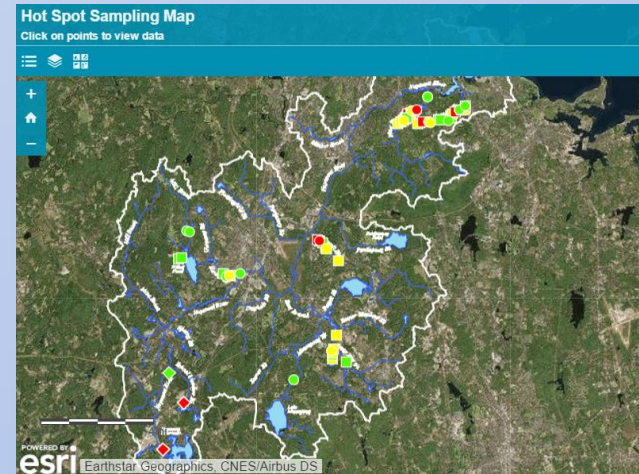
- Outfall and instream
 - E.coli
 - Surfactants
 - Ammonia
 - Chlorine
- Optical brighteners
 - Intermittent flows
- Continuous dissolved oxygen
 - Phosphorus
 - Flow rate



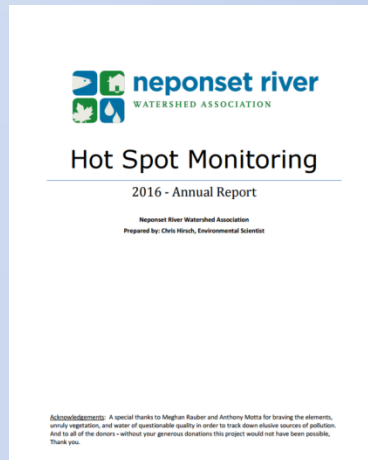
What Do We Do With The Data?



Update our towns regularly



Share it publicly via an interactive online map

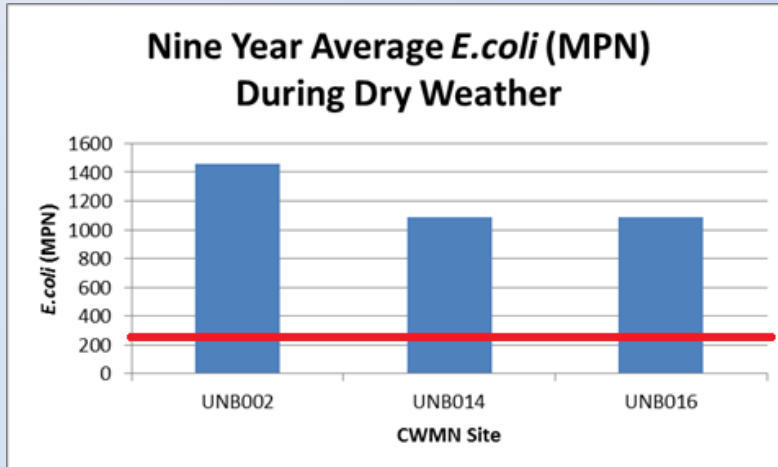


Distribute Annual Report

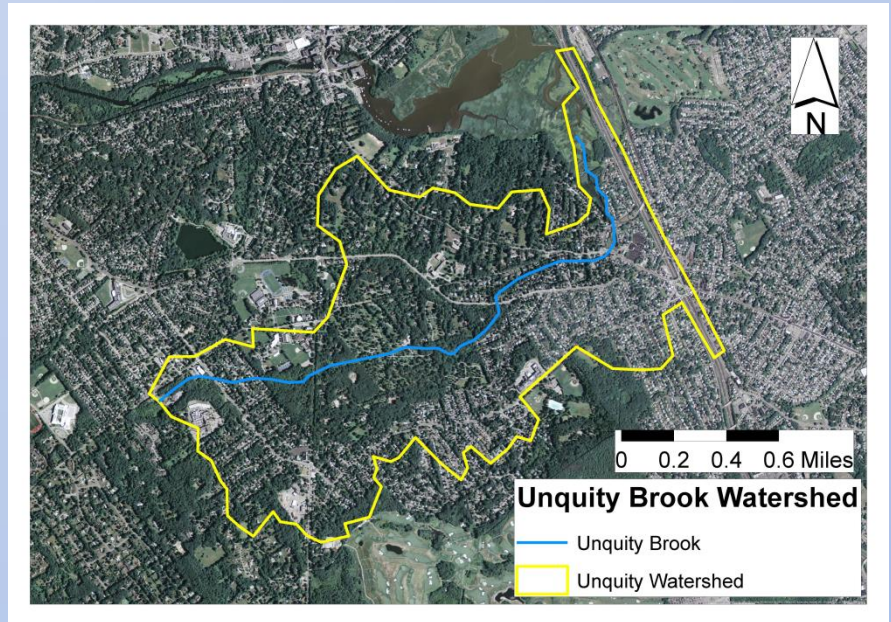


Share with EPA quarterly

Unquity Brook in Milton



**Unquity Brook has bacteria issues BUT,
It also has a smelt run...**

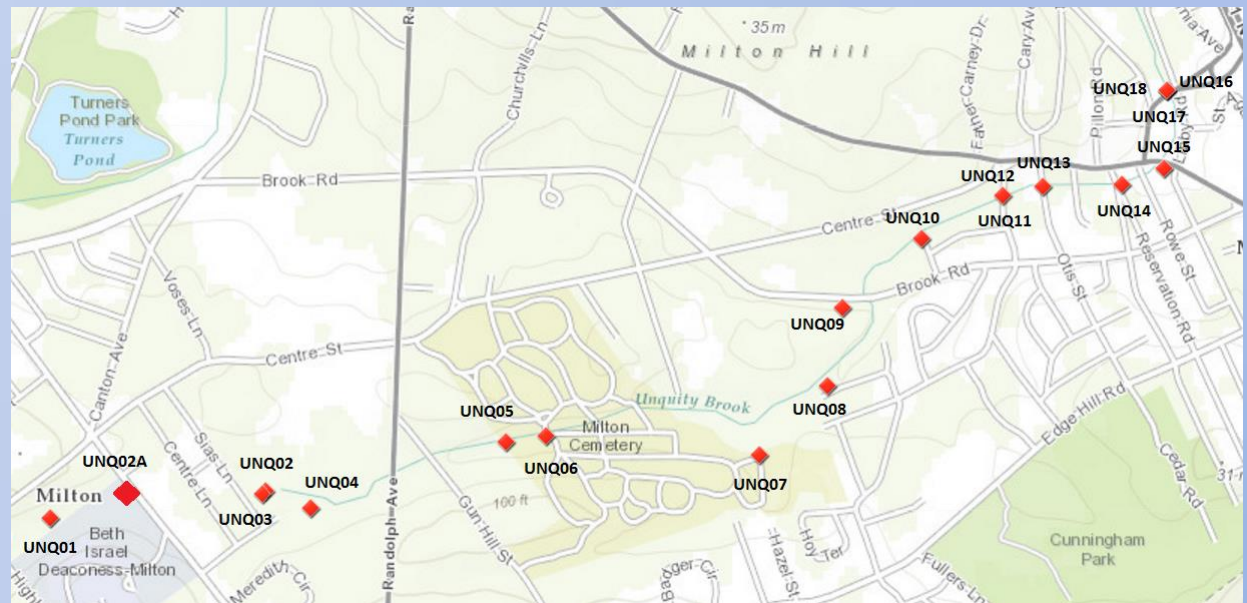


...so we went in with Milton on a CPR grant from CZM to:

1. Describe pollution stressors
2. Propose stormwater retrofits

Experimental Design

- **Wet weather and Dry weather sampling**
- **Broke stream down into segments**
 - mainstream, major tribs, and every outfall.
- **Utilized Microbial Source Tracking**
 - DNA analysis: Presence of Human or Dog



Results of Study

Problems

1. Runoff is a major source of pollution
2. There are two illicit discharges of sewage



Solutions

1. Stormwater Retrofits
2. Repair illicit connections

Partnership Needed



Partnership Roles

Milton

- Tracked down the illicit connections within system
- Top of list for next round of sewer repairs this year

NepRWA

- Conceptual designs for 5 BMP retrofits
- Will treat runoff from ~1.4 million square feet of roadways

Together

- Utilizing another grant from CZM to develop design plans for retrofits
- Plan to pursue follow-up grant to implement

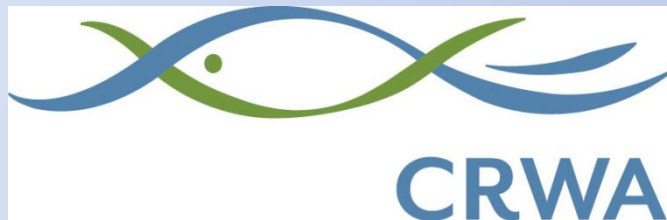
Other Partnerships



Neponset Stormwater Partnership



Stormwater Retrofits



SWMI Optimization



School Programs