The Lakes of MilBrook

Milbrook Homeowners Association
May 21, 2018

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Milbrook Lakes

- Watersheds
- Eutrophication
- Future care

Is it a Lake or a Pond?

Deep Lakes & Ponds

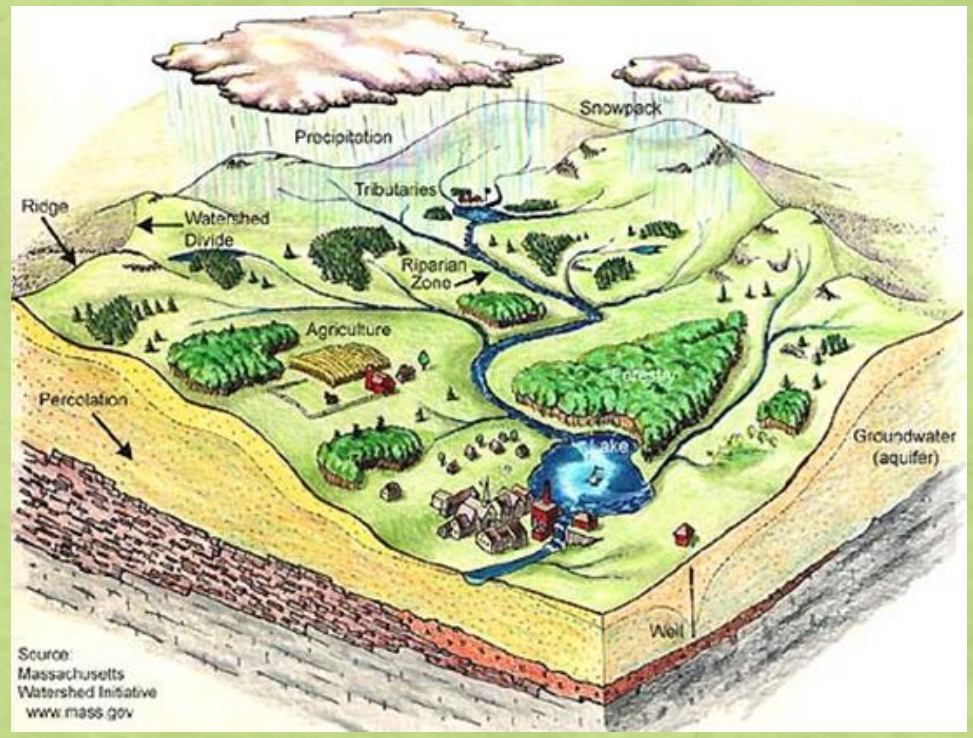
- Has both a shallow shoreline area that may potentially support rooted plant growth and a deeper portion where sunlight does not penetrate to the bottom.
- Water column stratifies into distinct thermal layers during the summer

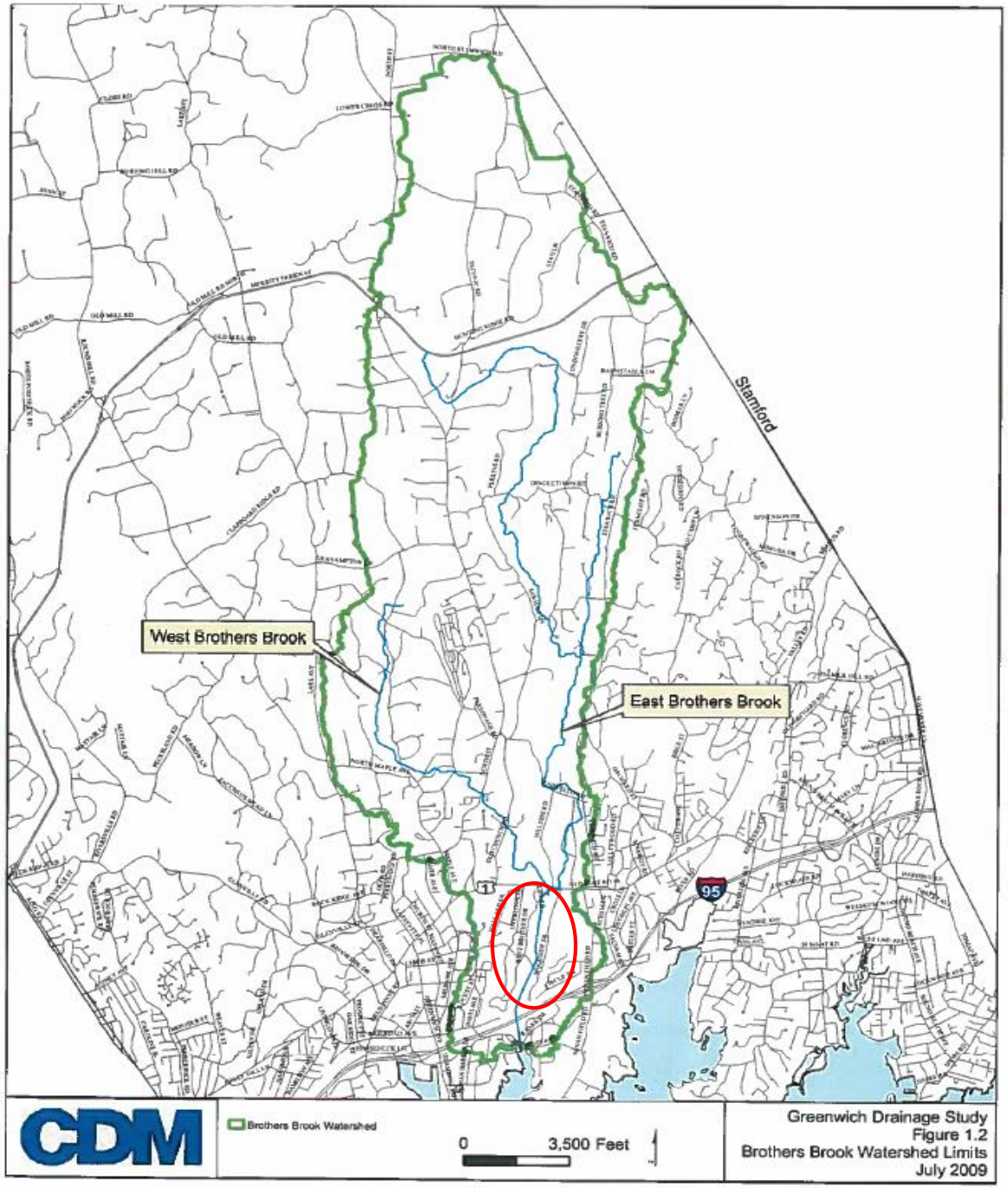
Shallow Lakes & Ponds

- Light penetrates to the bottom sediments to potentially support rooted plant growth throughout the waterbody
- Lack of thermal stratification
- The presence of muddy sediments throughout the basin bed

Watersheds

A region or area bounded peripherally by a divide and draining ultimately to a particular watercourse or body of water




Stamford
West Brothers Brook
East Brothers Brook
95
CDM
Brothers Brook Watershed
0
3,500 Feet
Greenwich Drainage Study
Figure 1.2
Brothers Brook Watershed Limits
July 2009

The Cold, Hard Truth

The decisions of many land owners affect the lakes and you have little to no control over their decisions.

There is some help:

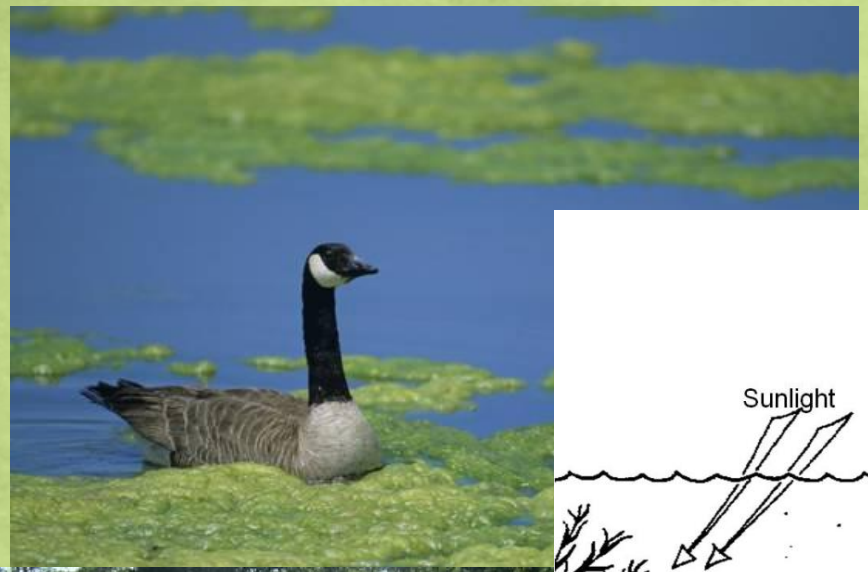
- Wetland regulations
- Public education
- Stormwater Management Guidelines
- Health Code
- The Milbrook homeowners

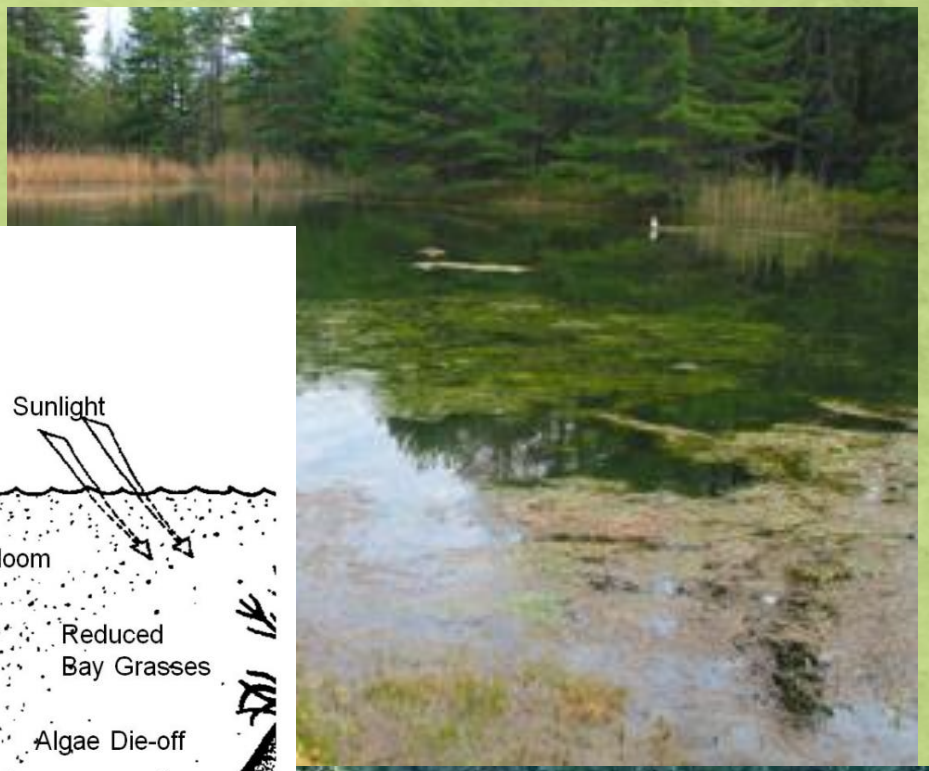
Eutrophication, which comes from the Greek *eutrophos*, "well-nourished."

Nitrates and phosphates, especially from lawn fertilizers, run off the land into rivers and lakes, promoting the growth of algae and other plant life, which take oxygen from the water, causing the death of aquatic life.

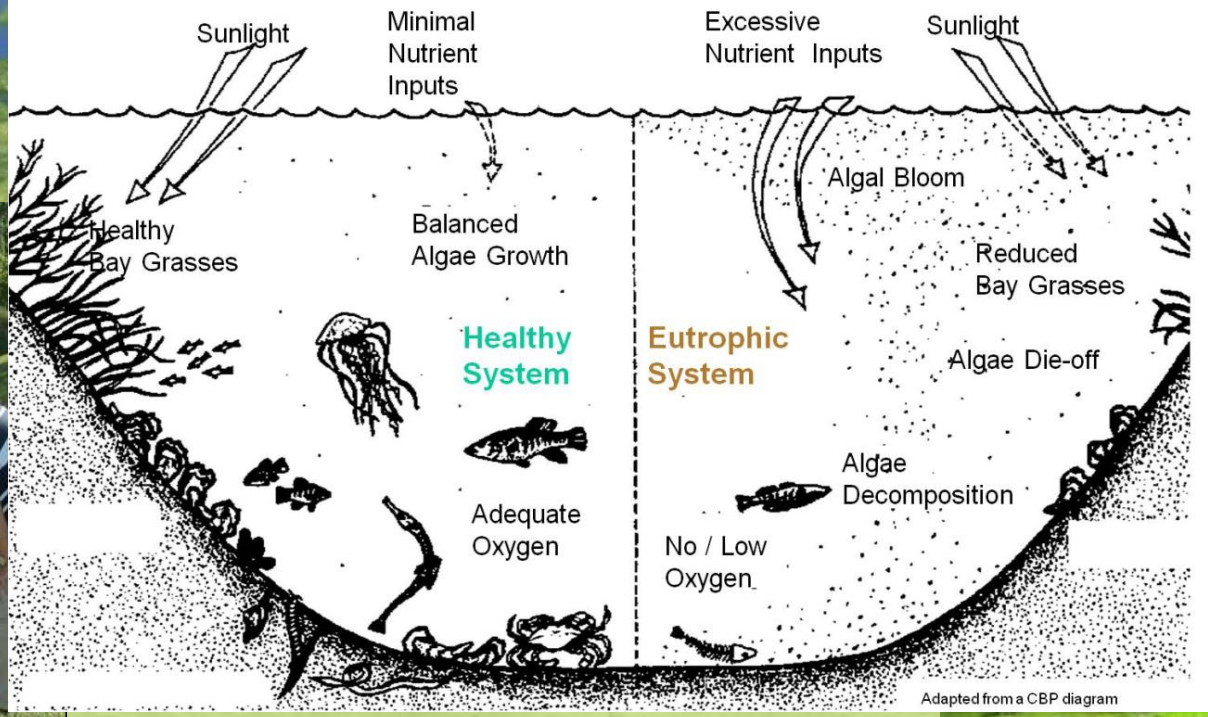
Fertilizers, detergents, and pet and human waste are often to blame as well.

Eutrophication





The Big Picture

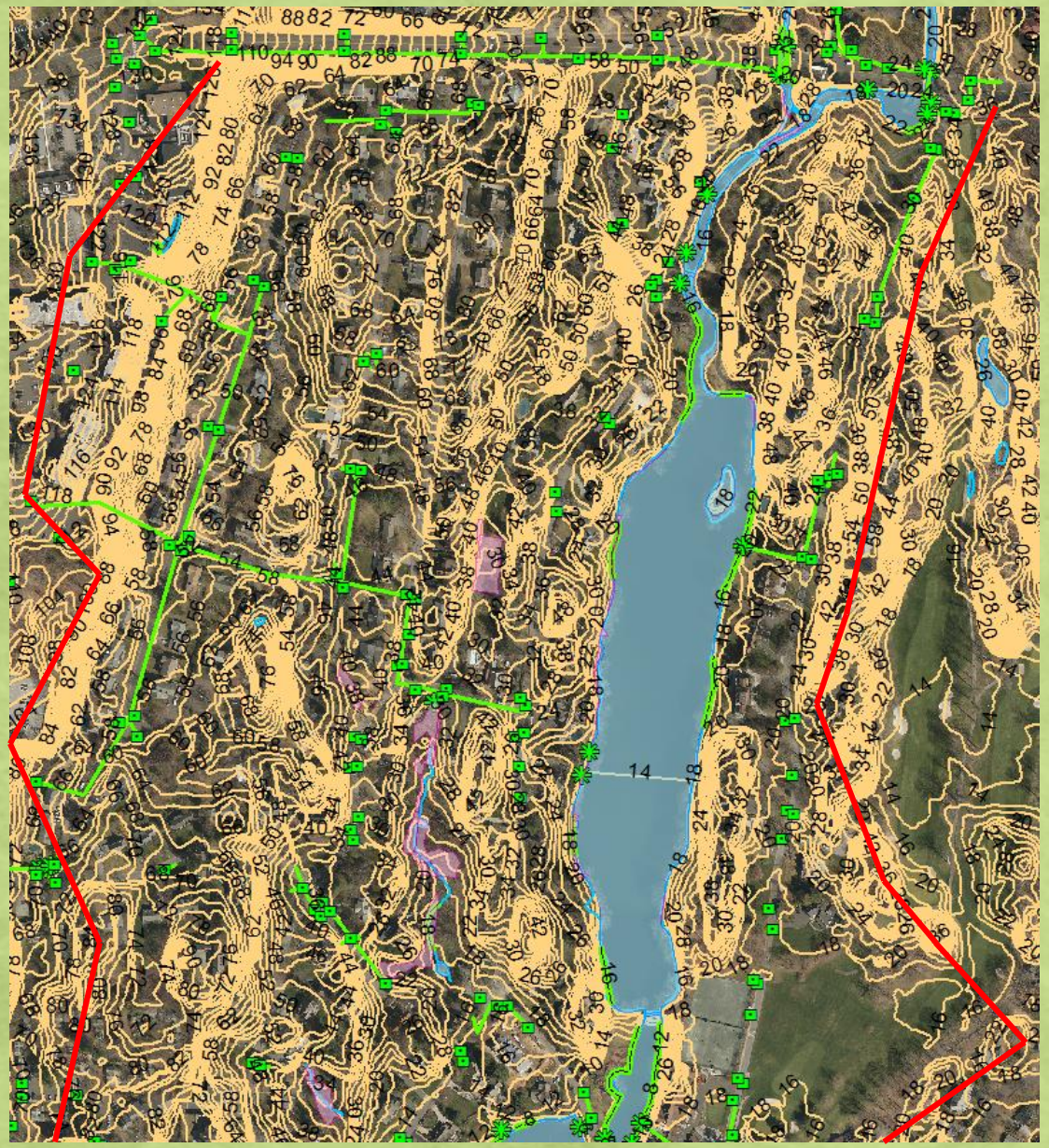


Non-Point Source Pollution

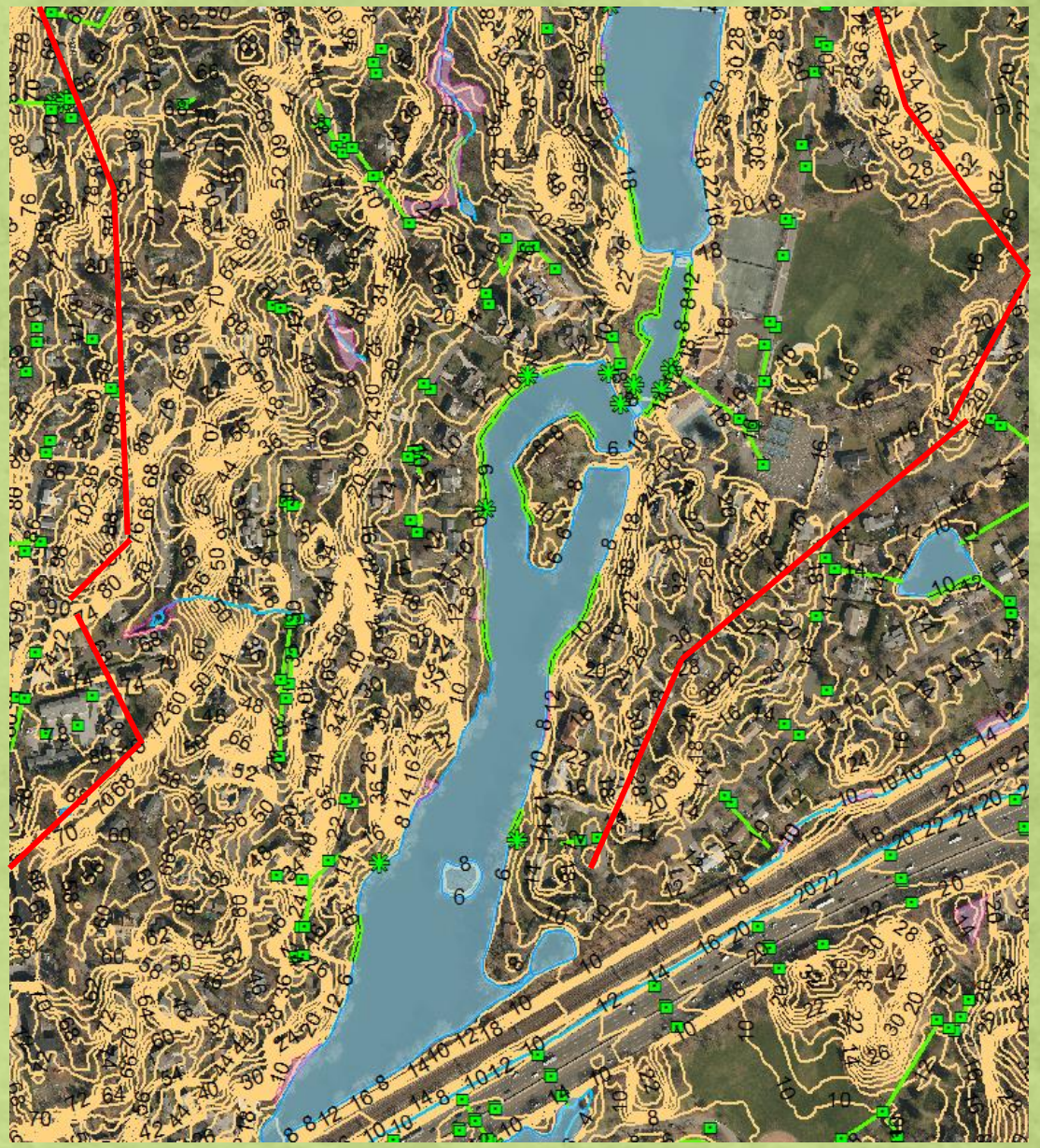
Lake-front landowners are not the only contributors of pollution.

Road & Storm Drainage Networks provide distant properties with a direct connection.

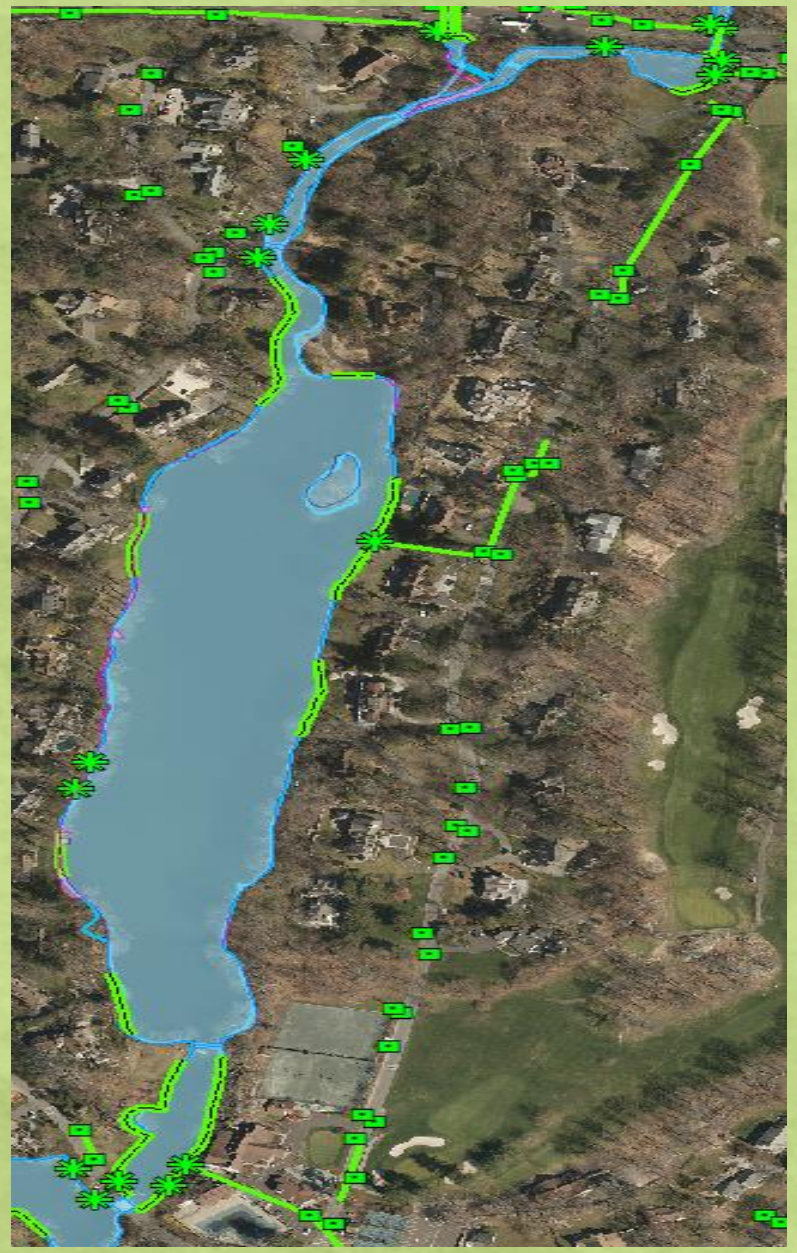
Upper Lake



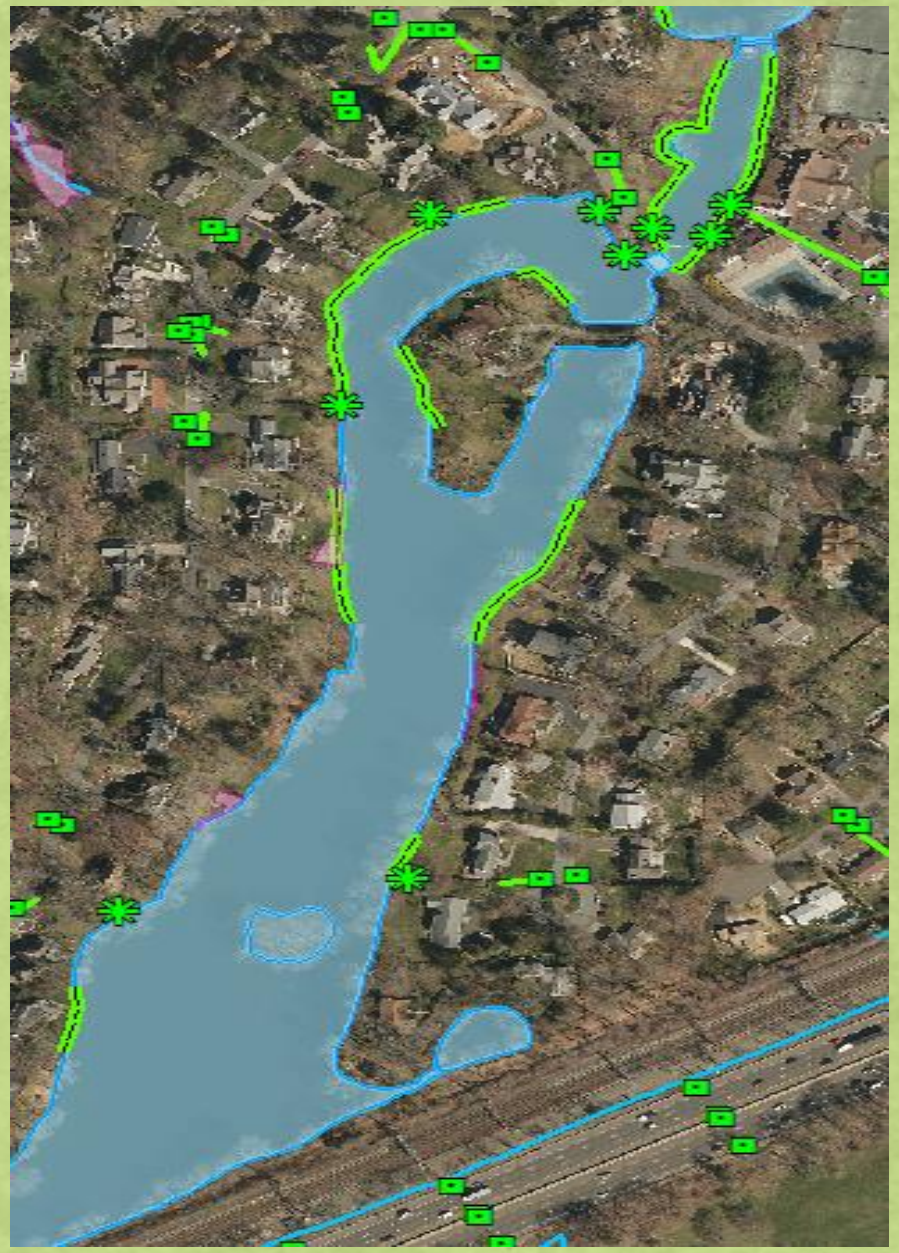
Lower Lake



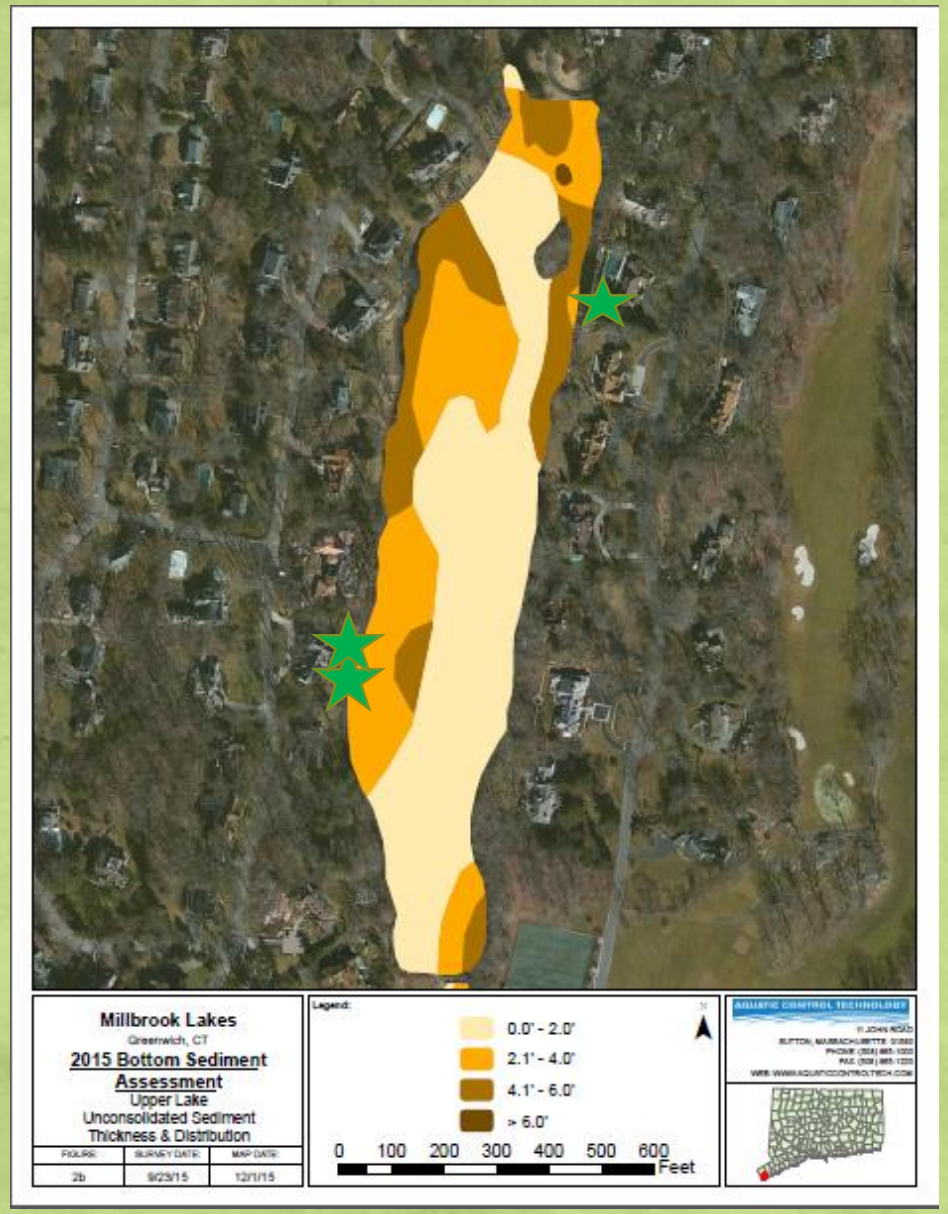
Upper & Middle Lakes



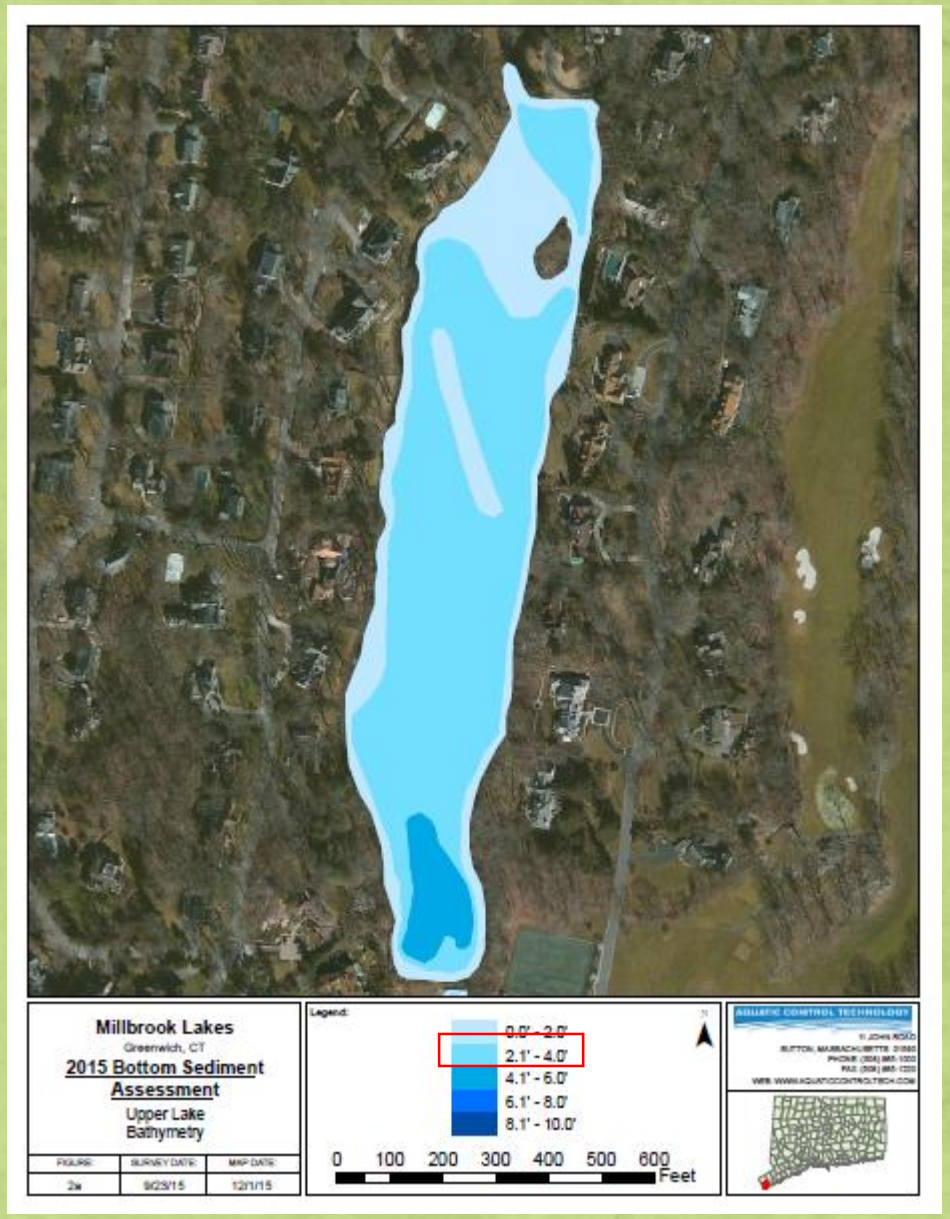
Middle & Lower Lakes



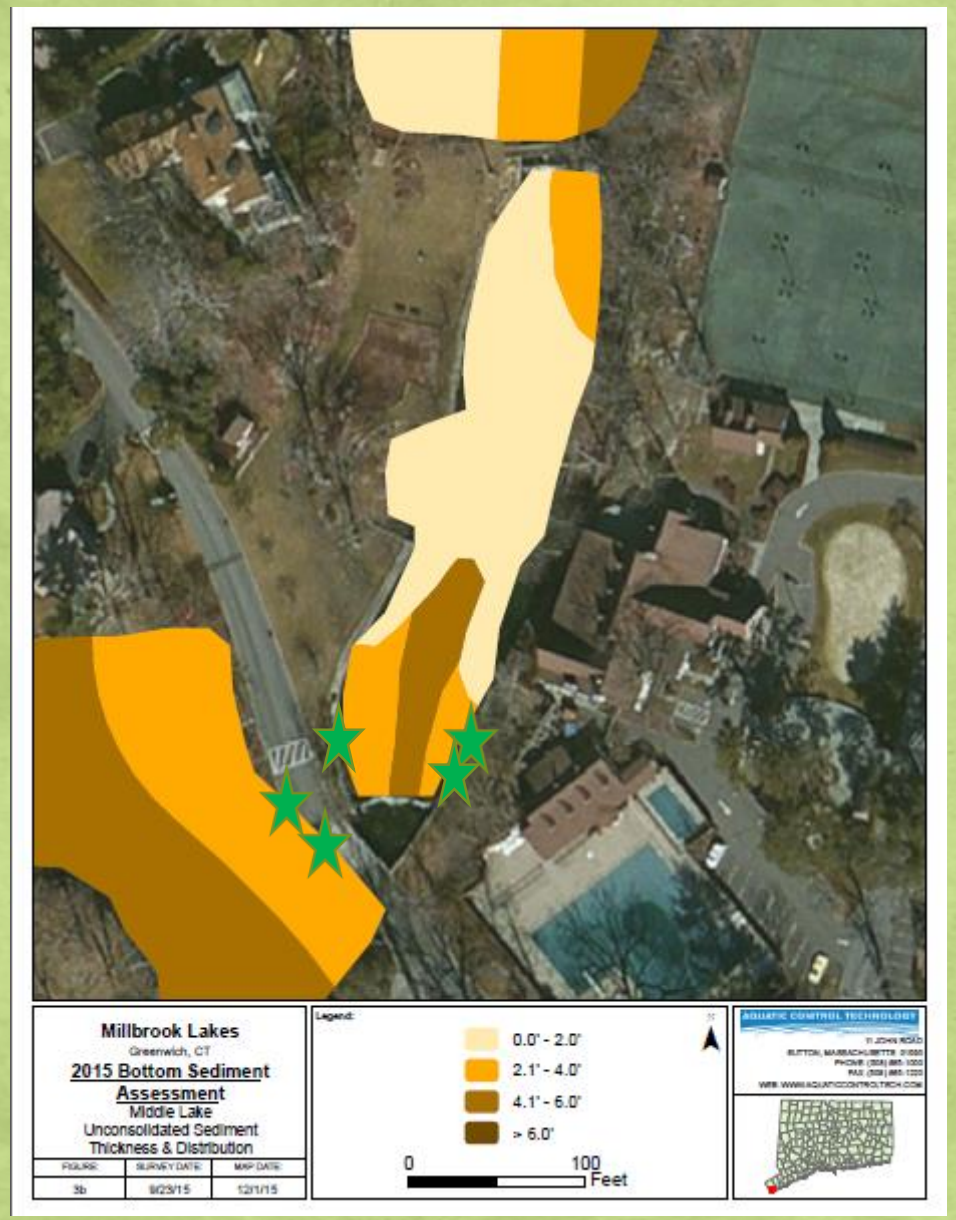
Upper Lake Sediment Depth



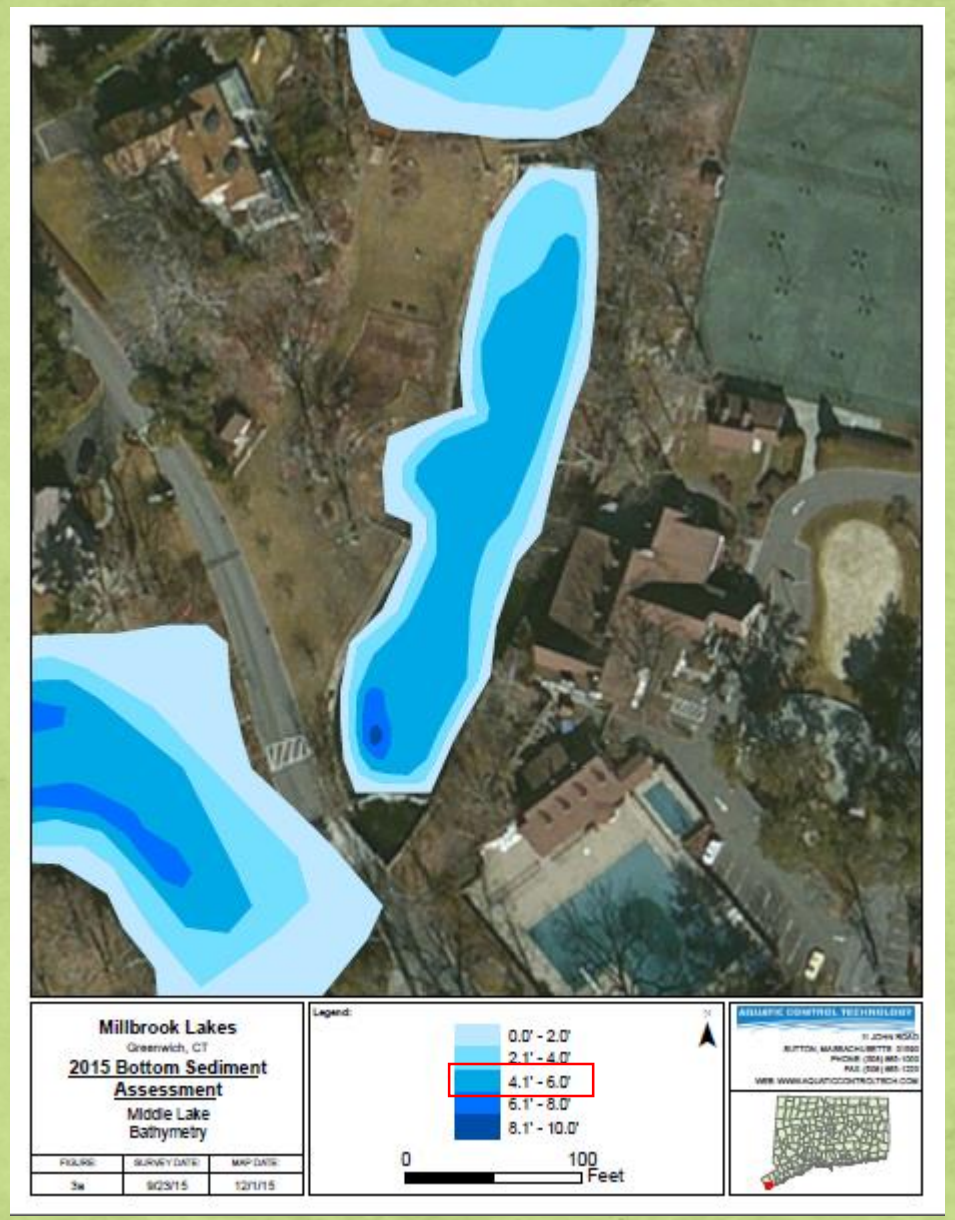
Upper Lake Water Depth



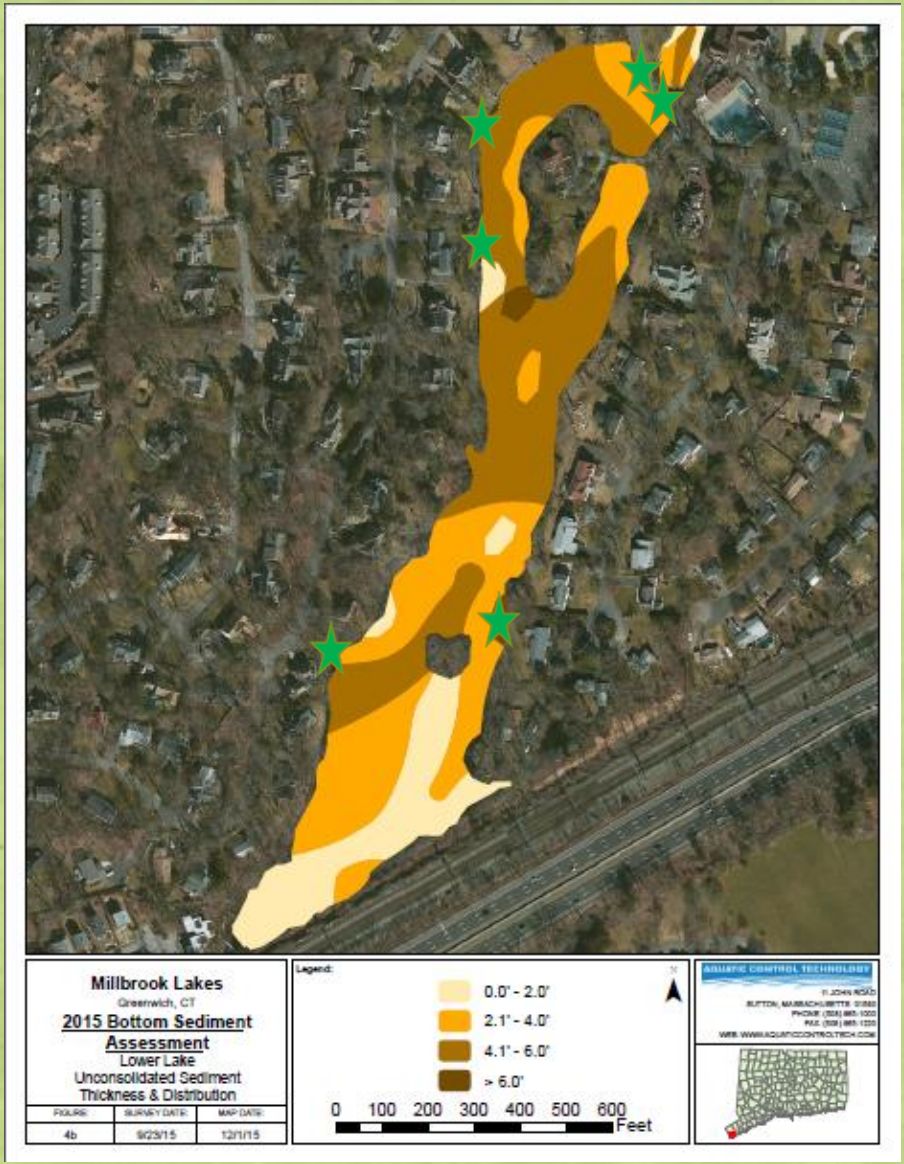
Middle Lake Sediment Depth



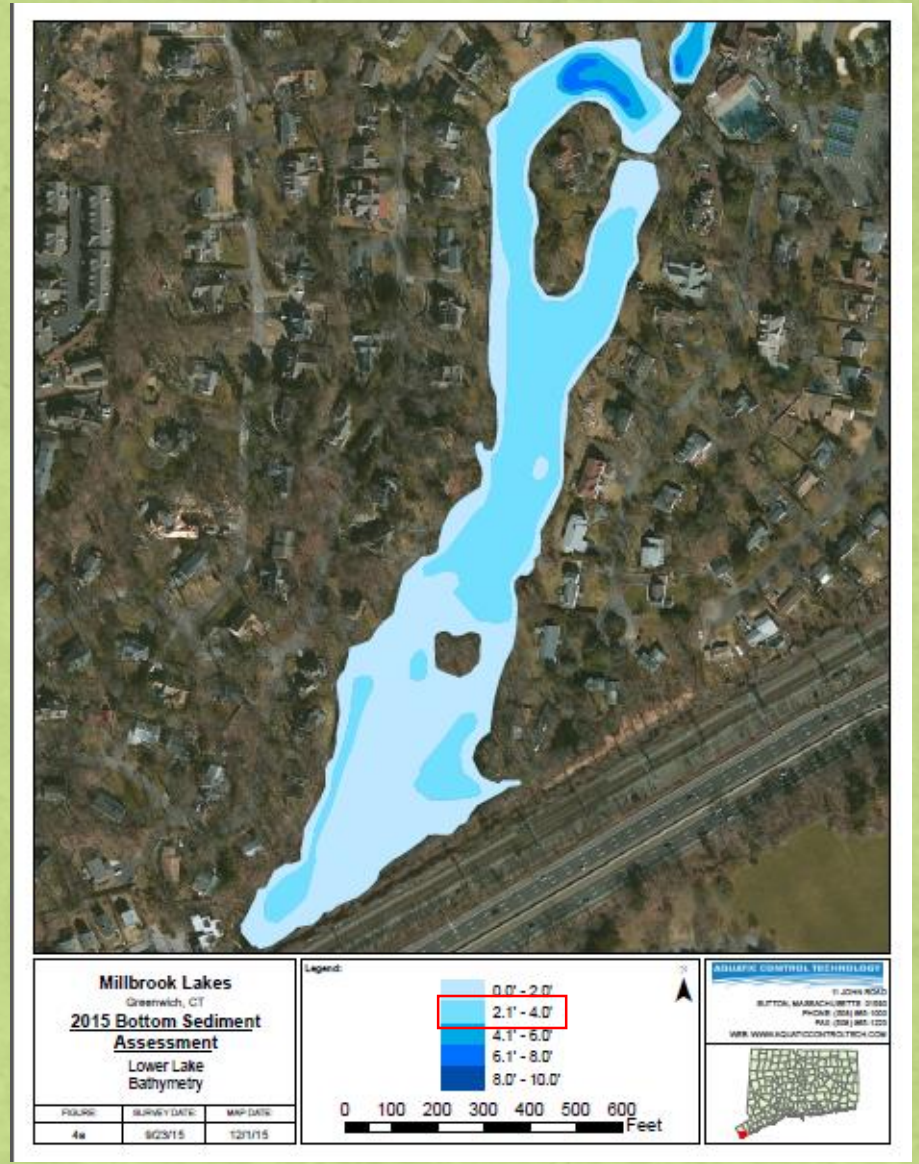
Middle Lake Water Depth



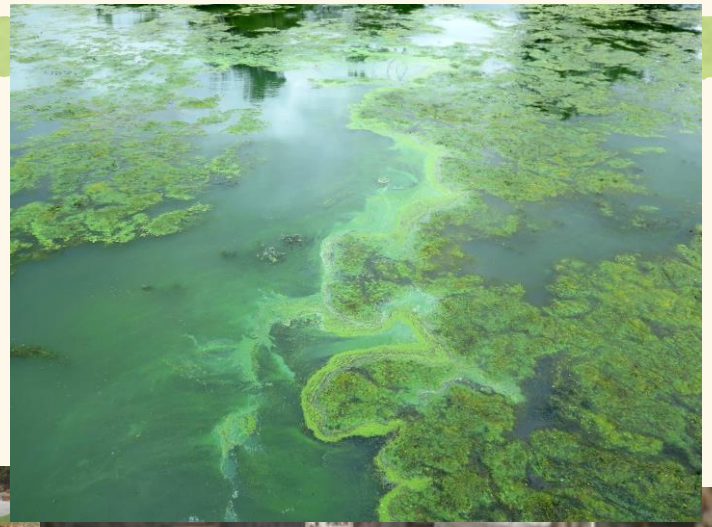
Lower Lake Sediment Depth



Lower Lake Water Depth



Factors Contributing to "Cultural" Eutrophication



…Namely Us

- Road Sand
- Accelerated Erosion
- Algal Blooms
- Blowing Leaves into Waterbody

Nitrogen Pollution

- Excessive algae
  - Hypoxia
- Decreased water clarity
  - Loss of native plant diversity
  - Loss of native fauna
  - Warmer water = less oxygen
- Lost recreational value

Sources

At a rate of 1lb of nitrogen per 1,000 s.f., 630,000 lbs of N are spread in Greenwich per application

Dog waste: 16,000 families X 1.6 dog avg. =
25,000 lbs of poop per day

Phosphorous Pollution

- More of an issue with fresh water systems
- Unhealthy freshwater negatively impacts salt water
- Same type of damage as nitrogen in salt water

Sources

- At a rate of .25 lb of phosphorous per 1,000 s.f., 126,000 lbs of P are spread in Greenwich per application
- Wastewater
- Detergents

Lawn Care
Septic/Sewer Maintenance
Pet Waste
Landscaping
Dredging

Solutions

Lawn Care

Do's

- Customized fertilizer and Pesticide Applications
- Leave grass 3 in. tall or more
- Leave lawn clippings behind
- Water only twice a week, as needed

Don'ts

- Don't have grass down to water's edge
- Don't allow grass clipping to enter catch basins or waterbodies
- Don't apply fertilizers without first testing soil

Septic/Sewer Maintenance

Septic Systems

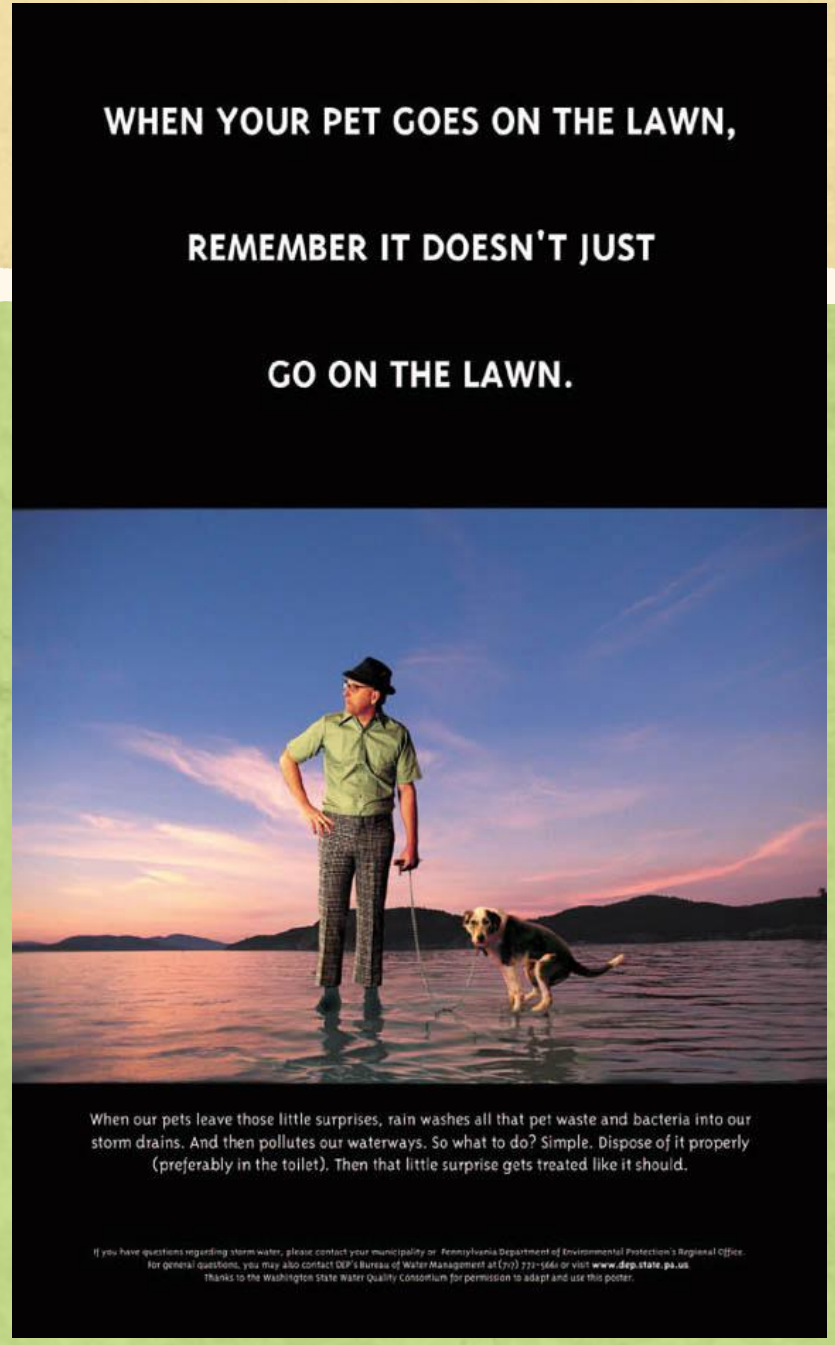
- Pump septic tanks every 3-5 years
- Don't dispose of hazardous materials down the drain
- Use low phosphorus detergents
- Don't allow ignore foul smells or especially green grass

Sewer Lines

- Video inspection of lines
- Correct any failures

Pet and Animal Waste

- Pick up after your dogs
  - Flush it, bury it, or throw it away
  - Never drop it into a catch basin
  - 100 Millbrook families = 160 lbs of poop per day
- Oil Goose Eggs



Landscaping

- Embrace buffers!
  - Deters geese
  - Filters pollutants
  - Reduces erosion
  - They can be beautiful!
- Keep track of what your landscaper is doing
- Shift the paradigm away from lawns
- Plant trees to provide shade

Dredging

- The only long term solution to fix issues associated with depth is to dredge.
- Ponds should be at least 8 feet deep
- Filling in is natural, ponds aren't

Thank you.

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