

Lake Nipmuc Baseline Assessment Study

Kick-off Meeting Sampling Plan and Project Schedule

ESS Group, Inc.
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Background and Project Scope

- Task 1 – Project Kick-off and Existing Data Review
 - Tonight's meeting is part of this task
 - Provide your insights or data to help us understand Lake Nipmuc
- Task 2 – Surface Water Sampling
 - Starting as soon as possible
- Task 3 – Groundwater Seepage Survey
 - May/June
- Task 4 – In-Lake Sampling and Mapping
 - May/June
- Task 5 – Watershed Assessment Report and Presentation
 - Anticipated by October

Task 2 – Surface Water Sampling

- Two rounds of water quality sampling
 - One wet to capture stormwater inputs
 - One dry to capture background conditions
 - Analytes include:
 - Temperature, specific conductance, bacteria, phosphorus, nitrogen, flow (if present)



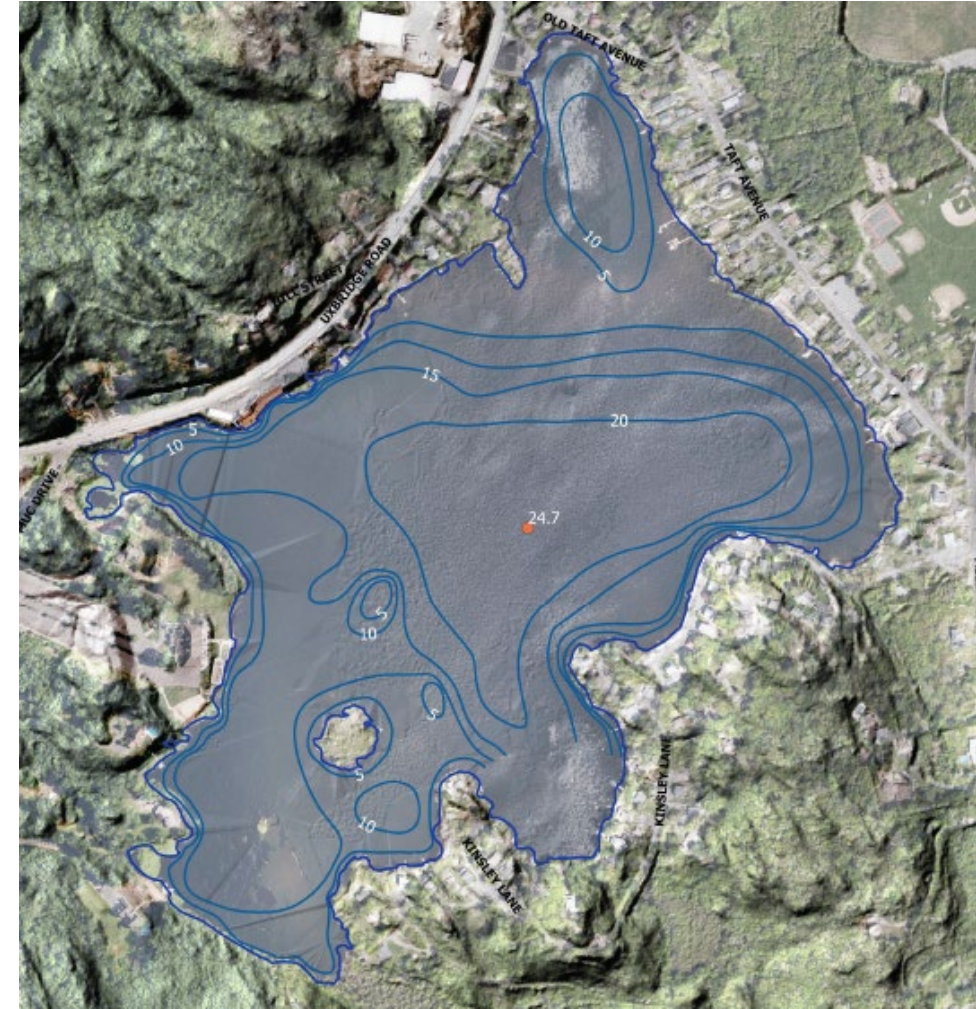
Task 3 – Groundwater Seepage Survey

- Measurement of shallow groundwater input and quality
 - Four shoreline segments
 - One near Town Beach, two along developed shorelines, and one along undeveloped shoreline
 - Sampling to include
 - Seepage rate, phosphorus, nitrogen (ammonia and nitrate), pH, specific conductance, temperature
 - Stable isotopes for improved understanding of nitrogen sources (septic vs. fertilizer)



Task 4 – In-Lake Sampling and Mapping

- Physical component – bathymetry of entire lake (mostly done)
- Biological component
 - Aquatic plant mapping of entire lake
 - Algae sample at deep hole
 - Wildlife observations (esp. resident waterfowl)
- Chemical component
 - Water quality at deep hole
 - Vertical profile of temperature, dissolved oxygen and specific conductance
 - Transparency measurement (Secchi disk)
 - pH, bacteria, phosphorus, & nitrogen at surface and bottom



Task 5 – Assessment Report and Presentation

- Final project report to include
 - Narrative description of approach and results
 - Supporting data tables and figures
 - Interpretation of results/identification of potential pollutant sources
 - Recommendations for next steps and associated costs
 - Summary of potential funding sources or opportunities
- Final presentation to the Town that touches on each element above



Thank You.

Questions?



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