

Lost Lake Watershed Advisory Committee (LLWAC)

Town of Groton, Groton, MA 01450 978-448-1111

Meeting Minutes - April 23, 2015

At Legion Hall

Present: Mark Deuger, Susan Horowitz (BOH), John Petropoulos (BOS), Arthur Prest (Finance Comm.), Michael Rosa

Not present: Tom Orcutt (Groton Water Dept.)

Visitors: Alex Woodle; Carl Nielsen, CLM, Vice President, ESS Ecological Services & Environmental Permitting

Recorder: Stephen Legge

Call to Order: Chairman Prest called the meeting to order at 7:06 PM.

Presentation by ESS, Responder to the LLWAC Request for Information, February, 2015:

Mr. Nielsen's office is in East Providence, RI. Introductions were made. He made a presentation to the committee that was very responsive to the committee's desires. A copy of the slides will be made available to the committee. Summary points were made as follows:

ESS is very strong in both science and engineering relating to lake and watershed problems. The term "CLM" means Certified Lake Manager. Limnologists study lake chemistry and other aspects; a CLM determines how to fix the problems that scientists have concluded exist. Mr. Nielsen has worked in the area of interest for 24 years and has managed a number of projects concerning lakes and ponds in the town of Littleton, MA (Savos Danos). He also worked on a project for the town of Wrentham in 2005, which had issues similar to those of Lost Lake.

Nielsen commented, "to sewer or not to sewer", may not be the right question. He said sewerage will definitely not solve weed problems in most cases. CN recommended that sewerage was not the correct answer for Wrentham and the town voted 9-1 against a sewer. He said the right questions for us were:

1. Which nutrient is the limiting nutrient controlling algae growth and eutrophication of Lost Lake, and
2. Which sources can most cost-effectively be managed?

Other big questions should be:

3. Has the water quality in Lost Lake changed between the 1989 study and the 2013 study?
4. What is the issue with Martins Pond Brook? Can that be fixed?
5. Is E. coli a threat to drinking water? What is the source, human or animal?

Nielsen said his firm can use “ribotyping” (sp?), a test which determines through DNA which species are contributing E. coli, by percentage.

Prest commented that historically, E. coli has not been a big problem on Lost Lake.

ESS thinks it is likely that phosphorus (P) is the limiting nutrient in the lake. P loading in the lake appears to be around 40 ppb (parts per billion); 20-50 ppb is the breaking point for trouble. Warner’s Pond in Concord is a good example of a water body completely out of control - they are unable to fix the P problem there.

Nielsen said wetlands produce and shed P, and it is very much a seasonal process; in the spring plants take up P and measurements go down – in the fall plants return P to the water resulting in high measurements. Regarding Martins Pond Brook, measurements of concentration of P are not very helpful. What is needed are measurements of actual loads in kilograms.

Nielsen said that based on the Lost Lake CEI study, in-lake aggregate measurements of P show no meaningful change since 1989 (at around 40 ppb). Over that period of time sources may have changed, but the aggregate level is the same.

Nielsen addressed the subject of septic systems. He said that generally the ground absorbs P from them and it does not travel far. The amount moving to the lake from a given system would depend on the distance and depth change to the lake water. He mentioned, however, that it is possible that fissures in the ground can be conduits for much greater transport of P from a given system to the lake.

Nielsen mentioned that removal of weeds specifically to take P out of a water body is not very effective – only a tiny fraction of total P is bound up in the living plants themselves. He said it is better to use alum to seal off the P in sediments at the bottom than to try to remove the plants.

There was some discussion of how to address what meaningful things to measure in the lake, when and how much, in order to reduce assumptions and replace them with facts. This resonated with committee members. See the slides for more detail.

Nielsen commented that uptake of P into the water from bottom sediments can be very significant! ESS has numerous means by which to measure this, and also ground water seepage and “sheet-flow” from storm water runoff. See reference to “LIP” samplers in the slide presentation. Nielsen commented that the presence of iron in the ground affects the transport and absorption of P.

So, how do we fix problems? Nielsen said. See his slide titled “How do we fix the problems”. For the Long Lake project in Littleton, residential landowners located above and around the lake were convinced to build rain gardens on their properties. Apparently this has had good effect on the lake.

Petropoulos asked Nielsen what range of funds would be necessary to develop and implement a good testing program for our lakes and watershed. Nielsen answered that \$25K - 50K would get the kind of study he thinks is necessary. \$25 K would leave some gaps, \$50k would give a lot of good data. In answer to committee questions Nielsen said ESS would offer cooperation and savings with the use of local volunteers. They have done this in other cases on projects. A volunteer might typically supplant a junior staff member billed at \$100/hour. Of course volunteers would need to be trained, available and dependable.

Nielsen concluded his remarks and left the meeting at 8:30 PM.

Approval of March 26, 2015 Meeting Minutes:

Rosa moved and Prest seconded that the March 26th meeting minutes be accepted as revised by Prest. Passed unanimously.

Other Business:

Prest announced that the firm CADMUS, who provided written response to the committee's RFI, will make a presentation to the committee next Thursday, 4/30. Prest then proposes to take a several week break from more presentations to rest from Town Meeting preparations and attendance.

Discussion of ESS presentation reactions:

Horowitz asked Deuger's opinion. Deuger responded, it was ok, but he would have preferred more emphasis on ground water issues.

Prest commented he likes that ESS evaluates issues but leaves the solution to problems to someone else (engineers).

Deuger: we need to be careful what we ask consultants to do – we do not want reports that go on a shelf, but don't offer a way to go.

Rosa: likes that ESS is very open working with volunteers.

Petropoulos; like Prest, he appreciates very much that ESS is not involved in the solution.

Adjournment:

The meeting was adjourned with unanimous consent at 8:45 PM.

**** The next meeting will be scheduled for April 30th, provided that one of the RFI responders can attend. ****