

Lost Lake Watershed Advisory Committee (LLWAC)

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

Meeting Minutes - May 14, 2015

At Town Hall

Present: Mark Deuger, Susan Horowitz (BOH), Tom Orcutt (Groton Water Dept.), John Petropoulos (BOS), Arthur Prest (Finance Comm.)

Not present: Michael Rosa

Visitors: Alex Woodle; Chi Ho Sham, Ph.D., Senior Vice President, CADMUS; Jeanine Plummer, Ph.D., Worcester Polytechnic Institute, partner to CADMUS

Recorder: Stephen Legge

Call to Order: Chairman Prest called the meeting to order at 7:05 PM.

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

For reference, see the seven question list (one page) sent out by the committee to RFI responders, for tailoring their presentation responses at invited meetings.

Dr. Sham's office is in Waltham, MA. CADMUS is an employee-owned environmental consulting firm. It is not an architectural or engineering firm. The company was founded in 1983 to address drinking water issues, use watershed science practices and perform watershed and in-lake modeling.

Sham's expertise lies in drinking water, watershed protection, and water quality of lakes and rivers. He is a hydrologist. Sham is also an adjunct professor at Clarke University. He is originally from Hong Kong and has been in the Boston area since 1982.

Dr. Plummer is an Associate Professor of environmental engineering and civil engineering and has been at WPI for 15 years. She has taught undergraduate and graduate level courses in water quality modeling, water chemistry and water treatment. Plummer has expertise in physical and chemical treatment of water and control of non-point sources of pollution. She commented that WPI started its environmental engineering program nine years ago. It has a "real-world" focus, and students aim to improve living conditions.

Petropoulos asked "How should we go about retaining external services?"

Sham: believes we are concerned about phosphorous (hereinafter "P"); he thinks we should look carefully at what has been done previously and not re-invent the wheel.

Petropoulos asked, what is the relationship between CADMUS and WPI?

Sham: CADMUS routinely liaisons with academics to solve problems. Dr. Plummer may bring graduate students into a study. WPI has great lab facilities for testing water, with a large range of capabilities.

Sham said CADMUS takes a watershed science approach to problems, i.e., what data do we have, what do we need? They characterize the watershed, analyze it and recommend appropriate actions.

Plummer said that their laboratories perform fecal source tracking for E. coli bacteria found in water samples. Microbiological techniques allow identification of species that are the origin of contaminants (cows, birds, humans and others) – and also each species' contribution percentage.

Prest: how does one figure out for a big watershed what is coming from where?

Plummer: Upstream/downstream analysis. Sample in different places to figure out what each “ non-point source contributes.

Woodle: How do we deal with P bound up in sediments in a very shallow lake with a large volume of boat traffic? Studies have shown alum treatments may not work well in this situation.

Sham: dredging or selective dredging may help, but it is expensive.

Woodle/Plummer: graduate students working on a project may allow collection of much data, relatively inexpensively.

An interesting CADMUS project involving Pleasant Bay (Cape Cod) was briefly discussed. Pleasant Bay is one of the most biologically diverse marine habitats in New England.

Plummer explained that data sets analyzed for a number of WPI's projects have exhibited interesting and remarkable results with respect to seasonal variations. It is therefore wise to set up any data collection project in watersheds with an eye to comparing data in different seasons of the year, and understanding what biological mechanisms may be operating to create differences in P measurements (refer to the earlier example of P uptake and release by plants by season, in the ESS presentation 4/23/15).

Petropoulos asked, what range of costs might we expect to measure and analyze our problems at Lost Lake and its watershed? Sham more or less declined to give a specific answer, but suggested the Department of Agriculture (federal, state or both?) is offering financial assistance to fix watershed environmental problems.

Deuger asked Plummer, what assurance do we have that data from WPI labs is of good, consistent and repeatable quality? Dr. Plummer talked about their protocols and standards for instrumentation and the running of standards in the midst of test samples. She added that WPI has not attempted to acquire EPA or DEP certifications for their labs.

Sham and Plummer concluded their remarks and left the meeting at 8:47 PM.

Other Business:

Prest said that he would attempt to get the firm Lombardo, who also provided written response to the committee's RFI, to come for a presentation next, in early June.

Prest announced Town Meeting had approved the committee's request to re-purpose approximately \$17,000 (?) in funding for external consulting to the LLWAC. This brings total available funds to around \$32,000 (?).

Discussion of CADMUS presentation and comparison to ESS on 4/23:

Most felt rather strongly that ESS had taken a much more practical, and informed, approach to our problems than CADMUS had.

Deuger suggested we consider using some of the available external consulting funds to hire a grant writer to help secure \$50K – 75k in grants for measurement and analysis of the lakes and watershed.

Adjournment:

The meeting was adjourned with unanimous consent at 9:00 PM.

**** The next meeting will most likely be scheduled for early June, provided that one of the remaining two RFI responders can attend. ****