

Report of the Tuxedo Park Lakes Committee

April 17, 2019

A. The condition of our lakes

- 1** Over the past ten years the ecological health of Tuxedo's lakes has deteriorated. Cyanobacteria blooms and the introduction and spread of Eurasian Watermilfoil (EWM) are symptoms of this decline.
- 2** Cyanobacteria can develop toxic strains that can be a danger to our drinking water. Dense stands of EWM can create still water habitats promoting Cyanobacteria blooms and create hot spots of cyanotoxins.
- 3** Both the algal blooms and the spread of EWM are aggravated by increased phosphate loading to our lakes. Some of this phosphate comes from the Lakes watershed and some from lake bottom sediments. To treat this problem, it is important to know the sources and quantities of phosphate entering our lakes waters and reduce them.
- 4** The extent of EWM in Tuxedo Lake is known its extent in Pond 3 and Wee Wah is not known.

B. Addressing the problems

1. Getting started

During the summer of 2018 the Tuxedo Park Lakes Committee (TPLC) contacted a number of lake associations that are addressing problems similar to ours. It became clear that lake associations that developed long term plans for lake monitoring and treatment have had the greatest success. This is because there is no quick solution so progress and costs need to be measured in multiple year terms. Accordingly, we decided Tuxedo Park needs a lake management company to help us develop a plan that has realistic short and long term goals and criteria to measure progress.

2. Beginning the search for a lake management company

We first consulted experts in the field e.g. the head of the graduate program in Lake Management at SUNY Oneonta as well as a respected scientist at the Darin Freshwater Institute on Lake George. Two companies emerged from this phase of the search processes, Princeton Hydro (PH) and North East Aquatic Research (NEAR).

3. Interviews

We interviewed representatives from both companies and brought them to Tuxedo Park for site visits.

- a. At each site visit they were interviewed by trustees McHugh and Gluck and the Tuxedo Park Lakes Committee (TPLC).
- b. We asked for and received recommendations from Lake Associations they have worked for.
- c. We asked for and received copies of reports they had produced for lake associations.

4. Proposals

We asked for proposals from both companies. We did not lead them, except we did ask for short term and long term treatment recommendations.

1. After receiving proposals, we sent each company two sets of questions, one compiled by the TPLC and the other by Trustee Paul Gluck. We received answers to all questions.
2. Throughout the search process we shared all e-mail communications with trustees Gluck and McHugh. They were both invited to all our meetings. As liaison from the Village Board of Trustees (BOT), Trustee Gluck

attended all our committee meetings and was an active and helpful participant.

4. Evaluation of proposals

We evaluated proposals from three companies NEAR, PH and Solitude. The Village currently has a contract with Solitude for treatment advice and the BOT asked Solitude to submit a proposal. Criteria used in the evaluation were, total cost, cost for individual procedures and procedures proposed. The committee was unanimous in their ranking with NEAR first, PH second and Solitude third.

1. NEAR is the least expensive, based on total cost and cost of individual procedures.
2. Near proposed more aquatic plant surveys of all three lakes.
3. NEAR proposed more water quality sampling of our lakes and tributary streams.
4. Both NEAR and PH proposed modeling of nutrient budgets Solitude did not.
5. NEAR received strong recommendations from lake associations and companies administering treatments. Both noted NEAR's

aquatic plant mapping procedures were better than other companies.

6. NEAR does not do lake treatments thus their recommendations for specific treatments should be free of potential bias.

C. Recommendations

1. The BOT appoint NEAR as Tuxedo Park's lake management company.
2. Working with the lake manager and the TPLC we recommend the BOT:
 - (a) develop long term goals (ten years) for the management and treatment of our lakes and watershed.
 - (b) develop strategies for achieving goals.
 - (c) establish methodologies for measuring progress.
 - (d) Annually, review progress, make plans for the coming year and issue a report to village residents.
 - (e) Estimate short and long term costs.
 - (f) Explore sources of funding to meet costs.

D. Recommended treatments this summer

Discuss summer treatments of three lakes with the lake manager.

Because the location of dense patches of EWM in Tuxedo Lake is known, we recommend intensive DASH harvesting in that lake this summer.

We do not recommend treatment of either Wee Wah or Pond 3 until the extent of EWM is evaluated with quantitative surveys. We recommend such surveys be done this summer.