



REPORT 09 – 06

To: Technical and Development Services Standing Committee
From: Brenda Black, Director of Administration/Treasurer
Date: December 15th, 2009
Subject: Water Quality Testing Review

PURPOSE:

To provide Committee with an update of the status of the Water Quality data collection.

BACKGROUND:

At a recent meeting, the approach to reviewing the Water Quality Testing issue was reviewed and it was determined that staff should meet with and/or collect data from all possible sources to create a database defining the specific details for the testing that is occurring on all water bodies in the Township.

In an effort to collect this information, the Township staff wrote to all the Cottage and Lake Associations that we could find requesting the following:

- Arrange a meeting with Township staff to discuss the details of water quality testing currently occurring on their specific body of water;
- Alternatively, if they would rather, please provide information relative to water quality testing in their respective areas and include details of “what” they are testing for; “where” they are testing, “how often” the tests are conducted and “who & when” they report their water quality tests results.

ANALYSIS:

Over the past weeks staff have met with Judi Browse and Keith Sherman to receive detailed reports on the kind of testing completed, the time frames of completion, the rationale for the specific testing and the specifics of where and when their testing is completed and finally, who they provide with the resulting details. Additional time was spent with Mr. Batten as well as reviewing his documentation. Several Lake and Cottage Associations have reported regarding their testing programs and the respective details.

In order to understand the processes currently undertaken, a brief history may help. The Paterson report (1969) recommended that strategic level planning become the responsibility of the District or Upper Tier municipal governments. During the mid 1970s there was a desire to manage recreational water quality, however, Ministry of the Environment (MOE) guidelines were too vague. As a result, the District worked closely with

the MOE to establish a program. The program that was developed was modeled on approximately 160 lakes and data was compiled by hand beginning in the early 1980s. The model was computerized and was known as the "Lake System Health Program" in 2007. Subsequently, the program expanded and became more proactive by involving the various lake associations.

As research continued and circumstances were monitored to determine how much development can occur around a lake before there is significant deterioration in recreational water quality, the model evolved to reflect the situation as it developed.

Monitoring is part of a broader program and results form the basis of land use policy that is reviewed on a mandatory five year term. The definitions used for the program development and policies are as follows:

Significant Deterioration: Increased algae blooms represents significant deterioration as these are directly linked to increases in phosphorus

Recreational Water Quality: the ability to use a waterbody for full body contact activities and visually enjoy the waterbody.

The program, as it has been established, does not address some of the other issues that may be questioned. There are a number of other measures of water quality that are either not a legislated municipal responsibility and/or are not impacted by development. These include:

- Private drinking water quality (not a municipal responsibility)
- Toxins (regulated by the MOE via water & sewage plants)
- Climate change (not a municipal responsibility and not impacted by development)
- Invasive species (not a municipal responsibility – a provincial responsibility).

The Lake System Health Program is a broad approach to protecting water bodies and includes testing for recreational water quality monitoring, testing to enhance development policies, substantiate the requirement for strong stewardship programs and to provide a basis for municipal infrastructure programs. The goal of the program is to **"Protect Lake Ecosystems and the Social and Economic Values they provide within the Legislative and Financial ability of the Municipality."**

This program is based on a partnership approach with the Ministry of the Environment (MOE) providing lab analysis and technical advice, the District undertakes monitoring, modeling and strategic planning, area municipalities implement policies through development control and lake associations undertake stewardship programs.

The principles of the Lake System Health Program include the following:

- Manage lakes on a watershed basis and to cover all of Muskoka
- Implement state of the art science
- Provide accessibility to both large and small lake associations
- Provide easy access to data for the public
- Develop remedial action programs where development or municipal programs impact water quality.

One component of the program is the monitoring program that includes spring phosphorus

to determine the overall health of the lake, water sample collection for base chemical parameters, secchi depth measurements, temperature and dissolved oxygen readings that are taken in mid June, shoreline land use surveys, benthic macro-invertebrate sampling, terrestrial forest plot establishment, record all shoreline structures, record status of shoreline where the water meets the shore and recorded approximately 20 metres back from the shore on Baxter Lake, Go Home Bay, Six Mile Lake, South Bay, Twelve Mile Bay..

In addition, biological monitoring is completed at the request of the specific lake association and is a volunteer based program. The results of this monitoring is fed into the Provincial Benthic Biomonitoring Network.

A summary of the result received to date is attached for your review.

FINANCIAL CONSIDERATION:

This report has no direct financial impact.

SUMMARY & COMMENTS:

The results of the information collected indicate that it is the responsibility of the upper tier municipal government to provide effective monitoring on recreational water bodies to ensure that the water meets the standards under the Lake Water Health Program. The Lake Water Health Program was developed in conjunction with the MOE to provide guidelines and methodology to be used for the testing and monitoring of recreational water and to ensure consistency across the province. The results obtained are used as the basis to develop land use policies that must be followed by all lower tier municipalities within the upper tier borders.

In our case, the Lake Water Health Program is the standard that is being used by the Severn Sound Environmental Association as well as the District of Muskoka.

RECOMMENDATIONS:

THAT the Technical and Development Services Standing Committee receive this report for information and further provide the report to Council for review.

Respectfully submitted,

Brenda Black _____

Water Quality Testing Results - Summary Table

Waterbody	Testing Completed By	Frequency of Testing	Tests Completed	Results Sent To
Barron Lake	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships
Flat Rock	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships
McCrae	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships
McDonald	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships
Haggart Lake	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships
Stewart Lake	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships
Gloucester Pool	Paul Wiancko Paul Wiancko Ken Alborough	every two weeks 3 times/year 2 times/year	Bacterial Study Water Chemistry Depth Profiles Ecoli, Phosphorus, coliform	Georgian Bay Forever Georgian Bay Forever Georgian Bay Forever Gloucester Pool Cottagers

Waterbody	Testing Completed By	Frequency of Testing	Tests Completed	Results Sent To
Six Mile Lake	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships
Galla Lake	Paul Wiancko Paul Wiancko District of Muskoka/SSEA	every two weeks 3 times/year	Bacterial Study Water Chemistry Depth Profiles Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	Georgian Bay Forever Georgian Bay Forever District/Townships
Tadenac Bay	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships
Go Home Lake	Paul Wiancko Paul Wiancko District of Muskoka/SSEA	every two weeks 3 times/year	Bacterial Study Water Chemistry Depth Profiles Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	Georgian Bay Forever Georgian Bay Forever District/Townships
Gibson Lake	Paul Wiancko Paul Wiancko District of Muskoka/SSEA	every two weeks 3 times/year	Bacterial Study Water Chemistry Depth Profiles Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	Georgian Bay Forever Georgian Bay Forever District/Townships
Myers Lake	District of Muskoka/SSEA	Every three years	Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	District/Townships

Waterbody	Testing Completed By	Frequency of Testing	Tests Completed	Results Sent To
Baxter Lake	Paul Wiancko Paul Wiancko Ken Alborough District of Muskoka/SSEA	every two weeks 3 times/year 2 times/year	Bacterial Study Water Chemistry Depth Profiles Ecoli, Phosphorus, coliform Phosphorus, Alkalinity, Calcium, Chloride, Colour, Conductivity, Iron Secchi depth, Oxygen, Shoreline	Georgian Bay Forever Georgian Bay Forever Georgian Bay Forever District/Townships
Little Lake	Ken Alborough	2 times/year	Ecoli, Phosphorus, coliform	Georgian Bay Forever Gloucester Pool Cottagers
Mclean Lake	Ken Alborough	2 times/year	Ecoli, Phosphorus, coliform	Georgian Bay Forever Gloucester Pool Cottagers

Note: Paul Wiancko also indicated that he participates in the MOE Partnership Program, Benthic Studies at 2 locations, Invasive Species samples, participates in the Ont. Reptile Atlas study, Wetlands Classification, FOCA Dockettalk Program, and the District has completed a shoreline study/usage of the lake.

Prepared December 15th, 2009