



## TOWNSHIP OF SEGUIN

**Prepared for:** Mayor & Council

**Department:** Community Services

**Agenda Date:** January 12, 2015

**File Number:** CS-FC-2015-001

### Subject

Water Quality Monitoring & Septic Re-inspection Program Report

### Recommendation

THAT Council receives the Water Quality Monitoring and Septic Re-inspection Program report for information.

### Purpose of Report

To provide the Council of the Township of Seguin a summary of key findings of the 2014 Water Quality and Septic Re-inspection Program.

### Background/Analysis

As an environment first municipality, being proactive at environmental planning initiatives and outreach helps to improve water quality and the overall health of our lakes in the future. Our Water Quality Monitoring Program and Septic Reinspection Program continue to monitor the ecological health of our lakes, maintains our septic systems and collaborates with our numerous Lake Association as part of our overall stewardship initiatives. This report will provide Council with an update for the 2014 season for both programs.

#### **Water Quality Program:**

The Seguin Lake Water Quality Monitoring Program, developed in 2008, is a field-based program that monitors approximately 120 lakes across Seguin on a rotating basis. The purpose of the Water Quality Monitoring Program is to establish a historical record of water quality parameters so that trends in water quality can be identified.

#### **The Water Quality Monitoring Program measures:**

- Spring Phosphorus concentrations (a measure of nutrient enrichment)
- Dissolved Organic Carbon
- Secchi Depth (a measure of water clarity)
- End of summer dissolved oxygen and temperature profiles

**Operation:**

The Water Quality Monitoring Program consists of two phases, one in May and the other in August. In May, dissolved oxygen testing and secchi disk readings are taken on our specified lakes and water samples are taken and transported to a lab in Dorset to be tested for phosphorous. In August, dissolved oxygen testing and secchi disk testing are completed.

In 2014, 47 lakes were chosen and tested. The data collected over time allows us to monitor future sensitivities to phosphorus or potential problems that may arise. In fact, the Ministry of the Environment recommends a minimum of two years of phosphorus data to be 95% confident of being within 20% of the mean annual concentration of a lake. Seguin now has 76 lakes that have at least three years of monitoring data. This set of lakes was chosen at the beginning of the program to include lakes that were over threshold for phosphorus based on the 2009 model, developed lakes, and then lakes of varying characteristics (shallow, deep, headwater, undeveloped), to make sure that we have a good dataset to validate the model and to evaluate the success of the approach to managing shoreline development for control of phosphorus.

The following summary and recommendations have been received from Hutcheson Environmental:

- A total of 74 of 128 lakes (58%) in Seguin Township have measured spring total phosphorus concentration data and at the conclusion of the 2014 spring monitoring program, and 71 lakes have a minimum of 3 years of data. There are now a sufficient number of lakes with measured phosphorus data to confidently validate the water quality model.
- We recommend that the Seguin Township monitoring program continue, as developed, with review and refinement if necessary, to monitor spring total phosphorus concentration for the existing monitoring lakes (76 lakes) on a 2-year rotation (approximately half of the lakes each year).
- If additional resources are available, we recommend monitoring lakes with no existing data and we will work with the Township to identify suitable lakes.
- Due to the complex lake shape and bathymetry of Horseshoe Lake, we continue to recommend that spring total phosphorus sampling be conducted at 3 locations in the lake as was done in 2014 to support multi-basin modeling of this lake.
- August monitoring of dissolved oxygen, temperature, lake depth and Secchi depth has been completed for 68 lakes. These data have been useful to flag shallow lakes, high DOC lakes and lakes that potentially undergo anoxia for refinement of the model.
- A large percentage of the Seguin Township monitoring lakes potentially have high dissolved organic carbon concentrations that could result in error in model predictions. If additional time or funding is available, we recommend that a subset of lakes be sampled for dissolved organic carbon. HESL will work with Seguin Township to select the most appropriate lakes for additional sampling if this is possible.
- There may be additional phosphorus data from LPP which could be used for the update of the model, but these data should be reviewed (bad splits, outliers, timing of sample collection, etc.) for consistency with the Seguin monitoring data.

For more information on the lakes tested in the 2014 year, please review the attached "Hutchinson Environmental 2014" report.

**Septic Re-inspection Program:**

The Township of Seguin Septic Re-inspection Program is a proactive strategy on the part of the municipality and serves to compliment the Seguin Lake Water Quality Program developed in 2008. The program was implemented in the spring of 2002 and currently is in its 13th year. The program is run in partnership with the North Bay Mattawa Conservation Authority.

In many small and rural communities like Seguin, septic systems are the common method of waste disposal and treatment. If properly designed, installed and maintained, a septic system could service a home for many years. However, poorly designed, installed or un-maintained systems may pose a threat to the environment and health through inadequately treated waste.

Since the implementation of the program in 2002, our main objective has been to inspect existing sewage disposal systems for malfunction, deterioration, erosion and overall compliance with the Ontario Building Code (OBC).

The goal of the program is to encourage regular maintenance of septic systems to avoid any possible threats to the environment.

**Operation:**

Throughout June, July and the first two weeks of August our students inspect septic systems throughout Seguin and encourage regular maintenance and proper care of these systems to avoid any possible threats to the environment.

This season, the majority of selected properties were located on:

- Silver Lake
- The Lake Joseph Road side of Clear Lake Road
- Rankin Lake Road

In addition to these inspections, 27 properties from the 2013 Septic Inspection list required re-inspection. Currently, nearly all of the properties on the western shorelines of Lake Rosseau and Lake Joseph have had an inspection completed. In addition, Tucker Lake was inspected this year as a precautionary measure given an out of character algae bloom that occurred on the lake in the early summer. It was found that only minor infractions were noted around the lake and therefore concluded that improper waste handling did not contribute to the bloom.

During the summer of 2014 the following was reported:

- A total of 87 properties were inspected from Silver Lake, Lake Joseph Road and Rankin Lake Road. Follow up inspections were completed on 27 properties in the Rosseau area.
- Of the 87 inspections
  - 11 properties were found to have deficiencies
  - 12 properties were re-inspected given previous infractions and of those 11 files were able to be closed.

Overall, the Community Services Department and North Bay Mattawa Conservation Authority have been working together to streamline the Septic Re-inspection program. In the past, all records for re-inspections of Seguin properties have been determined upon the beginning of the students summer program, therefore a considerable amount of time is spent pulling files and waiting. Following the conclusion of inspections in 2013, the data has once again been submitted to our GIS coordinator who will input the data into our GIS system. Therefore, students have been able to identify and target properties to be re-inspected in 2015. A request will be submitted to NBMCA to pull these files for 2015. This will streamline the program and make it more efficient.

For a the complete year-end report, please see the attached "Septic Re-Inspection Program Year End Report 2014"

**Policy & Budget Implications**

**N/A**

**Conclusion**

In conclusion, both the Seguin Water Quality Monitoring Program and the Septic Re-inspection Program are integral components to the Stewardship of our natural resources. Continued monitoring of our lakes will provide important historical data essential to the ongoing assessment of development capacities and the health of our lakes. Generally, the program has identified a positive trend in decreasing phosphorus levels in our Seguin Lakes.

Re-inspecting septic systems throughout the municipality will provide an indication of the violations present on residential properties. More importantly, it will provide an educational tool for residents focusing on the importance of maintaining septic systems through stewardship of their own properties.

We look forward to another successful year in 2015.

**Respectfully Submitted By:**



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**Dominique O'Brien                      Manager of Community Services**

**Reviewed By:**

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**Tom Stockie                      CAO**

**Attachments**

*Hutchinson Environmental Water Quality Report 2014*